APPENDIX D Part 3

Biological Resources Technical Report

4.3 Flora Diversity

4.3.1 Boulder Brush Corridor

A total of 321 vascular plant species, consisting of 287 native species (89%), and 34 non-native species (11%), were recorded on site during surveys[1] conducted in 2017, 2018, and 2019 (Attachment D). Fifty-seven families are represented, with nearly half of species coming from the *Asteraceae*, *Boraginaceae*, *Poaceae*, *Polemoniaceae*, *Fabaceae*, and *Brassicaceae* families. Seven special-status plant species were observed within the Boulder Brush Corridor: Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), Tecate tarplant (*Deinandra floribunda*), sticky geraea (*Geraea viscida*), desert beauty (*Linanthus bellus*), southern jewelflower (*Streptanthus campestris*), and Colorado Desert larkspur (*Delphinium parishii* ssp. *subglobosum*).

4.3.2 Campo Corridor

During surveys conducted by Dudek biologists in 2017 and 2018, 119 vascular plant species, consisting of 96 native species (81%) and 23 non-native species (19%), were recorded on site during vegetation mapping, jurisdictional delineation, and Quino checkerspot surveys. In 2010 and 2011, AECOM performed focused rare plant surveys. An additional 237 vascular plant species were recorded during these previous surveys conducted by AECOM, including an additional 218 native species and 19 non-native species[2]. Fifty-nine families are represented on site, with nearly half of the species coming from the Asteraceae, Boraginaceae, Poaceae, Fabaceae, and Brassicaceae families. No federally listed plant species were observed within the Campo Corridor. A cumulative list of plants species observed during these surveys is provided in the *Campo Wind Project Biological Technical Report* (Appendix H to the Campo EIS).

4.4 Wildlife Diversity

4.4.1 Boulder Brush Corridor

The Boulder Brush Corridor supports habitat for common upland and riparian species. Chaparral, sagebrush scrub, woodland, and riparian habitat within the Boulder Brush Corridor provide foraging and nesting habitat for migratory and resident birds and other wildlife species. Rock

[1] These species were recorded as part of efforts for a prior wind project on the same land, the Torrey Wind project, and the Boulder Brush Facilities project.

[2] Many more plant species were observed during the previous efforts because focused plant surveys were performed in 2010. Focused plant surveys were not performed as part of this current effort.

outcroppings, chaparral, sagebrush scrub, and woodlands within the Boulder Brush Corridor provide cover and foraging opportunities for wildlife species, including reptiles and mammals.

There were 207 species observed in the Boulder Brush Corridor during surveys conducted for the site. Of the total species observed, 27 of these are considered special status, one of which is a federally listed species. Species observed within the Boulder Brush Corridor were recorded during focused surveys, habitat assessments, vegetation mapping, and sensitive plant surveys. A cumulative list of wildlife species observed during these surveys is provided in Attachment E, Wildlife Species Observed. Species richness in the Boulder Brush Corridor is moderate due to the property size, amount of undeveloped land, and the number of native upland habitats. Species richness is generally increased with the presence of more habitat types and ecotones. The Boulder Brush Corridor is dominated by four habitat types: granitic northern mixed chaparral comprises 39%, sagebrush scrub communities comprise 14%, red shank chaparral comprises 16%, and semi-desert chaparral comprises 15% of the Boulder Brush Corridor. Although species richness is moderate, the number of species and the wildlife population levels (i.e., number of individuals) is typical for undeveloped areas in this region, particularly those areas that support multiple upland habitat types. The Boulder Brush Corridor supports numerous special-status wildlife species, which are addressed in Section 4.6, Sensitive Wildlife Species.

Reptiles and Amphibians

Thirteen reptile species were observed within the Boulder Brush Corridor during surveys. Commonly observed reptiles include western fence lizard (*Sceloporus occidentalis*) and common side-blotched lizard (*Uta stansburiana*). One amphibian species, western toad (*Anaxyrus boreas*), was observed within the Boulder Brush Corridor during surveys.

Special-status reptiles observed include San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), and Blainville's horned lizard (*Phrynosoma blainvillii*). No special-status amphibian species were documented within the Boulder Brush Corridor. Special-status species are discussed further in Section 4.6.

Birds

Ninety-nine bird species were observed within the Boulder Brush Corridor. Commonly observed birds included western meadowlark (*Sturnella neglecta*), California scrub-jay (*Aphelocoma californica*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), turkey vulture (*Cathartes aura*), wrentit (*Chamaea fasciata*), common raven (*Corvus corax*), greater roadrunner (*Geococcyx californianus*), California towhee

(*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), ash-throated flycatcher (*Myiarchus cinerascens*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo maculatus*), bushtit (*Psaltriparus minimus*), and Bewick's wren (*Thryomanes bewickii*).

Special-status birds observed included Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk, turkey vulture, loggerhead shrike (*Lanius ludovicianus*), California horned lark (*Eremophila alpestris actia*), golden eagle, northern harrier (*Circus hudsonius*), red-shouldered hawk (*Buteo lineatus*), western bluebird (*Sialia mexicana*), barn owl (*Tyto alba*), merlin (*Falco columbarius*), Bell's sage sparrow, and yellow warbler (*Setophaga petechia*). Special-status species are discussed further in Section 4.6.

Mammals

Nineteen mammal species were detected (directly or indirectly) during biological surveys within and adjacent to the Boulder Brush Corridor. Commonly observed mammals included desert cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), California ground squirrel (*Spermophilus (Otospermophilus) beecheyi*), and coyote (*Canis latrans*).

Special-status mammals observed included San Diego black-tailed jackrabbit (*Lepus californica bennettii*) and mule deer (*Odocoileus hemionus*).

Acoustical bat surveys were conducted in 2011 for the previously Jewell Wind project proposed by a different applicant. The surveys resulted in the detection of 13 bat species within the vicinity of the broadband acoustic detectors, which were located along the eastern edge of the Boulder Brush Boundary. It is assumed that all bat species recorded during the surveys would utilize suitable habitat within the Boulder Brush Corridor for foraging.

To evaluate the levels of activity for bats that could occur in the Boulder Brush Corridor, a comparison of total index of activity (IA), or the magnitude of each species' contribution to spatial use, was prepared for similar habitat from long-term acoustic studies within Clark County, Nevada (O'Farrell 2018). Within the Boulder Brush Corridor, there are no apparent attractant features (e.g., dense riparian habitat, open water). While there are rock outcroppings within and surrounding the Boulder Brush Corridor, these features are not large enough to support large roosting populations of bats. Compared to the Clark County project locations with those attractant features, the bats likely to occur within the Boulder Brush Corridor demonstrated IA values lower than those obtained at locations with attractant features. For example, the IA values at the Virgin River sample area had an IA of 46,583 (O'Farrell 2006a) and the Las Vegas Wash sample area had IA values ranging from 28,594 to 168,428 (O'Farrell 2006b). The Table Mountain sample area was a mid-elevation site on a large mountain plateau with ridgelines and lacked attractant features similar to the Boulder

Brush Corridor; the IA values ranged from 75-345 (O'Farrell 2007). Table 4-2, Acoustic Activity Indices for All Bats Detected in the Vicinity of the Boulder Brush Corridor, provides the bat species observed within the vicinity of the Anabat equipment and their IA. Each of these species is expected to use the site for foraging, while one special-status bat species, western small-footed myotis (*Myotis ciliolabrum*), has a potential to roost within the Boulder Brush Corridor. Compared to areas that have attractant features, the IA for the Boulder Brush Corridor is very low (215-855) and is consistent with other sites that have limited habitat attractants for bats. The Ocotillo Wind and Tule Wind projects, both located within the Project Vicinity, have also conducted bat surveys. The Tule Wind surveys recorded 22 bat species while the Ocotillo Wind surveys recorded 5 species (Gruver et al. 2011 and Ocotillo Express 2012). The IA for these sets of surveys was not included in any reports prepared for those projects.

Table 4-2
Acoustic Activity Indices for All Bats Detected
in the Vicinity of the Boulder Brush Corridor

Common Name	Index of Activity	
	High Microphone	*Low Microphone*
Special-Status Bats		
Pallid bat (*Antrozous pallidus*)	—	6
Townsend's big-eared bat (*Corynorhinus townsendii*)	—	20
Western mastiff bat (*Eumops perotis californicus*)	9	5
Hoary bat (*Lasiurus cinereus*)	9	4
Western yellow bat (*Lasiurus xanthinus*)	—	2
Western small-footed myotis (*Myotis cilioloabrum*)	—	218
Yuma myotis (*Myotis yumanensis*)	1	18
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	98	37
Big free-tailed bat (*Nyctinomops macrotis*)	1	—
Total	**118**	**310**
Non-Special-Status Bats		
Big brown bat (*Eptesicus fuscus*)	6	44
California myotis (*Myotis californicus*)	—	19
Canyon bat (*Parastrellus hesperus*)	27	460
Brazilian free-tailed bat (*Tadarida brasiliensis*)	64	22
Total	**97**	**545**

Special-status species are discussed further in Section 4.6.

Invertebrates

Sixty-two invertebrate species were observed within the Boulder Brush Corridor during the 2018 and 2019 protocol surveys conducted for Quino checkerspot butterfly. Commonly observed species included painted lady (*Vanessa cardui*), Behr's metalmark (*Apodemia mormo virgulti*), funereal duskywing (*Erynnis funeralis*), checkered white (*Pontia protodice*), and Pacific sara orangetip (*Anthocharis sara sara*). No Quino checkerspot butterfly individuals were observed during the 2018 surveys. No Quino larval host plants were observed within the Quino survey area during the habitat assessment or focused surveys in 2018; however, surveyors did observe some dead *Cordylanthus rigidus* remaining from the previous year's rainfall. Previous surveys conducted in 2011 for the Jewell Valley project, which overlaps partially with the Boulder Brush Corridor, did not result in the detection of any host plants. A total of five Quino checkerspot butterfly individuals were observed along the southeastern side of the Boulder Brush Corridor during the 2019 protocol surveys (see Section 4.6.1).

Fish

No fish species were documented during the numerous surveys (see Table 3-1) conducted within the Boulder Brush Corridor. There are no areas within the Boulder Brush Corridor that would support fish species (i.e., large areas of open water or perennial water sources).

4.4.2 Campo Corridor

There were 181 wildlife species observed in the Campo Corridor during surveys conducted by Dudek during Quino checkerspot butterfly surveys, bird count surveys, eagle surveys, and 2011-2012 bat surveys. In 2010, AECOM conducted Quino checkerspot butterfly surveys, arroyo toad surveys, riparian bird surveys, eagle surveys, and bat surveys. There were 124 additional species observed in the Campo Corridor during these previous surveys conducted by AECOM. Of the 305 total species observed, 83 were butterflies and moths, 16 were reptiles, 3 were amphibians, 171 were avian species, 16 were terrestrial mammal species, and 16 were bat species.[3] A cumulative list of wildlife species observed during these surveys is provided in the *Campo Wind Project Biological Technical Report* (Appendix H to the Campo EIS).

Commonly observed reptiles include western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), and gophersnake (*Pituophis catenifer*).

[3] Bat species recorded within the Campo Corridor were noted during acoustical bat surveys conducted from September 2011 to September 2012.

Commonly observed birds include western meadowlark (*Sturnella neglecta*), California scrub-jay (*Aphelocoma californica*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), turkey vulture (*Cathartes aura*), wrentit (*Chamaea fasciata*), common raven (*Corvus corax*), greater roadrunner (*Geococcyx californianus*), California towhee (*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), ash-throated flycatcher (*Myiarchus cinerascens*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo maculatus*), bushtit (*Psaltriparus minimus*), and Bewick's wren (*Thryomanes bewickii*).

Commonly observed mammals included desert cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), California ground squirrel (*Spermophilus [Otospermophilus] beecheyi*), and coyote (*Canis latrans*).

Commonly observed invertebrate species included painted lady (*Vanessa cardui*), Behr's metalmark (*Apodemia mormo virgulti*), funereal duskywing (*Erynnis funeralis*), checkered white (*Pontia protodice*), and Pacific sara orangetip (*Anthocharis sara sara*).

4.5 Sensitive Plant Species

Endangered, rare, or threatened plant species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status plant species" in this report and include (1) endangered or threatened plant species recognized in the context of CESA and FESA (CDFW 2018b), (2) plant species with a CRPR 1 through 4 (CDFW 2018c; CNPS 2018), and (3) plant species considered "sensitive" by the County (Table 2 in County of San Diego 2010a).

In considering rarity, the CNPS inventory of rare and endangered vascular plants of California was the primary reference (CNPS 2018). Use of the CNPS inventory is helpful because it defines levels of endangerment and rarity for all of the species addressed in the inventory. The CNPS inventory divides its subject taxa into four ranks: CRPR 1 (which is further divided into 1A and 1B), CRPR 2 (which is further divided into 2A and 2B), CRPR 3, and CRPR 4. Plants with a CRPR of 1A are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. Plants with a CRPR of 1B are rare throughout their range, with the majority of them endemic to California. Plants with a CRPR of 2A are presumed extirpated because they have not been observed or documented in California for many years. Except for being common beyond the boundaries of California, plants with a CRPR of 2B would have been ranked 1B. Plants with a CRPR of 3 have not had sufficient information collected to assign them to one of the other ranks or to reject them. Plants with a CRPR of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

Some of the plants constituting CRPR 4 meet the definitions of CESA of the California Fish and Game Code, and few, if any, are eligible for state listing; this rank is considered to be a watch list. Nevertheless, many of them may be significant locally, and it is recommended that CRPR 4 plants be evaluated for impact significance during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines Section 15125(c) and/or 15380. This may be particularly appropriate for the following:

- The type locality of a CRPR 4 plant
- Populations at the periphery of a species' range
- Areas where the taxon is especially uncommon
- Areas where the taxon has sustained heavy losses
- Populations exhibiting unusual morphology or occurring on unusual substrates

In addition to CRPR 1–4 species, plant species listed on County Lists A through D (County of San Diego 2010a) also were included in the consideration of sensitive plant species for this analysis.

4.5.1 Boulder Brush Corridor

Focused plant surveys were conducted in portions of the Boulder Brush Corridor in 2017 and the Boulder Brush Corridor in 2018 to determine the presence or absence of special-status plant species that are considered endangered, rare, or threatened under CEQA Guidelines Section 15380 (14 CCR 15000 et seq.). In June 2019, due to changes in the Boulder Brush Facilities development footprint, 27.1 acres were added to the Boulder Brush Corridor. These areas consist of 12 extended polygons ranging from less than 0.01 acres to 4.6 acres. Although these areas generally support the same type of vegetation communities as previously analyzed, a total of 27.1 acres were not surveyed.

Special-status plant species directly observed during focused surveys or known to occur in the surrounding region are described in Attachment F-1, Special-Status Plant Species Detected or Potentially Occurring in the Boulder Brush Corridor, which describes their known occurrences or potential to occur within the Boulder Brush Corridor based on their general biology (primary habitat associations, life form, blooming period, and known elevation range).

Sensitive plant species directly observed within the Boulder Brush Corridor include the following County List A-D species: Tecate tarplant (*Deinandra floribunda*, List A), Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*, List A), sticky geraea (*Geraea viscida*, List B), desert

beauty *(Linanthus bellus*, List B), southern jewelflower (*Streptanthus campestris*, List A), and Colorado Desert larkspur (*Delphinium parishii* ssp. *subglobosum*, List D).

Payson's jewelflower (*Caulanthus simulans*, List D) has high potential to occur within the Boulder Brush Corridor. Plants that are not expected to occur or have low potential to occur are listed in Attachment G-1, Special-Status Plant Species with Low Potential or Not Expected to Occur in the Boulder Brush Corridor. The Attachments F-1 and G-1 include all County Lists A–D species (County of San Diego 2010a), as well as species recorded in the Live Oak Springs quadrangle and the surrounding eight quadrangles (CDFW 2018a; CNPS 2018; SDNHM 2018; USFWS 2018a). The potential-to-occur determination is based on elevation, habitat, and soils present within the Boulder Brush Corridor, and Dudek biologists' knowledge of biological resources in the area and regional distribution of each species.

County List A and B Species

Plants categorized as County List A species are plants that are rare, threatened, or endangered in California and elsewhere. Plants categorized as County List B are rare, threatened, or endangered in California, but more common elsewhere (County of San Diego 2010a). County List A and B species that have been observed in the Boulder Brush Corridor are described below and included in Attachment F-1. Additional species that have low potential to occur are described in more detail in Attachment G-1. The location of the populations within the Boulder Brush Corridor are described for each species and shown in the Figure 4-1 series.

Tecate Tarplant (*Deinandra floribunda*, List A)

Tecate tarplant is a CRPR List 1B.2 (CNPS 2018) and a County List A species (County of San Diego 2010a). A member of the sunflower (Asteraceae) family, this species blooms from August through October in chaparral and coastal scrub habitats. Tecate tarplant is an annual herb that occurs at elevations of 230 to 4,003 feet amsl. It has been recorded in San Diego County and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for Tecate tarplant is based on the elevation range restrictions, which shows its potential range throughout inland San Diego County, a portion of southern Riverside County, and parts of Orange County. Specimen records are primarily from Jamul to the Boulevard area (Jepson Flora Project 2018). This species is relatively common within dry, ephemeral drainages and washes in upland habitats in this region based on the results of plant surveys in the area. Within the washes where Tecate tarplant occurs a deep sandy alluvium is present which creates limited shrub cover allowing for well adapted species like Tecate tarplant to grow unencumbered. Vegetative competition in these sandy ephemeral drainages is limited (Reiser 2001).

Within the Boulder Brush Corridor, Tecate tarplant occurs only within the ephemeral drainages and in some instances at the top of the ephemeral drainage banks (where overbank flow would occur during heavy rain events). The ephemeral drainages consisted of sandy soils within the Boulder Brush Corridor where Tecate tarplant was present and many times could be classified as a non-vegetated channel. Tecate tarplant was more likely to be present within high gradient incised ephemeral drainages and less likely to be found in the low gradient ephemeral drainages. Within the Boulder Brush Corridor there were approximately 3,059 individuals of Tecate tarplant, based on the survey conducted in 2018. Tecate tarplant occurs in the south central portion of the Boulder Brush Corridor and did not occur in the northernmost sections of the Boulder Brush Corridor. Ephemeral drainages with Tecate tarplant run through a variety of vegetation communities, including big sagebrush scrub, red shank chaparral, montane buckwheat scrub, granitic chamise chaparral, coast live oak woodland, unvegetated stream channel, and disturbed habitat. Tecate tarplant occurs within four larger drainages that flow either to associated willow riparian communities or montane wet meadow communities.

Jacumba Milk-Vetch (*Astragalus douglasii *var.* perstrictus*, List A)

Jacumba milk-vetch is a CRPR List 1B.2 (CNPS 2018) and County List A species (County of San Diego 2010a). This perennial herb in the pea or bean family (Fabaceae) blooms from April through June. It occurs in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland, and rocky communities at elevations of 2,953 to 4,495 feet amsl. It has been recorded in San Diego County and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for Jacumba milk-vetch is based on the elevation range restrictions, which shows its potential range along the foothills of the Peninsular Ranges, San Jacinto Mountain, and Santa Ana Mountain (Jepson Flora Project 2018). Specimen records include Boulevard, Jacumba, La Posta, Tierra del Sol, Live Oak Springs, Kitchen Creek, and Julian (Jepson Flora Project 2018). La Posta loams are one soil type used by Jacumba milk-vetch (Reiser 2001). Jacumba milk-vetch is associated with chamise, sticky geraea and mountain mahogany (Reiser 2001). Jacumba milk-vetch is relatively common in upland habitats and roadsides in this region based on the results of plant surveys in the area.

Within the Boulder Brush Corridor, numerous occurrences of Jacumba milk-vetch were observed. Jacumba milk-vetch thrives where soils have been noticeably disturbed. Top soils are no longer intact where the largest populations of Jacumba milk-vetch occur. Some descriptions of the habitat where Jacumba milk-vetch is most likely to occur within the Boulder Brush Corridor include general disturbed habitat where numerous annual weeds occur (i.e., cheatgrass fields), disturbed pastures containing numerous animals tracks (i.e., historical lands grazed likely by cattle), old dirt roads no longer in use, currently disturbed areas with numerous vehicle tracks, motorcycle trails, off-road-

vehicle trails, in open areas where soils have been moved, on old road turnarounds, areas of disturbed washes and within openings of vegetation where soils are less disturbed. Within the Boulder Brush Corridor there were approximately 255 individuals of Jacumba milk-vetch, based on the survey conducted in 2018. Jacumba milk-vetch populations were scattered throughout the entire Boulder Brush Corridor. These populations occur within nine of the vegetation communities: big sagebrush scrub, semi-desert chaparral, red shank chaparral, montane buckwheat scrub, coast live oak woodland, disturbed habitat, granitic northern mixed chaparral, wildflower fields, and unvegetated stream channel. The largest populations of Jacumba milk-vetch within the Boulder Brush Corridor occur within wildflower field, disturbed habitat and coast live oak woodland.

Sticky Geraea (*Geraea viscida*, List B)

Sticky geraea is a CRPR List 2.3 (CNPS 2018) and a County List B species (County of San Diego 2010a). A member of the sunflower (Asteraceae) family, this perennial herbaceous species has rayless flowers and blooms from May through June in chaparral habitats. Sticky geraea occurs at elevations from 1,476 to 5,557 feet amsl (CNPS 2018). It has been recorded in San Diego County, Imperial County, and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for sticky geraea is based on the elevation range restrictions, which shows its potential range throughout inland San Diego County, a portion of southern Riverside County, and parts of Orange County. Specimen records are primarily from Campo to the Ocotillo area (Jepson Flora Project 2018). This species is relatively common within openings in upland habitats in this region based on the results of plant surveys in the area. High desert chaparral openings are the preferred habitat for this short-lived herbaceous perennial and fires promote reproduction. Sticky geraea is associated with tollhouse rocky coarse sandy loam (Reiser 2001). Sticky geraea is found to be associated with Jacumba milk-vetch, white daisy tidytips (*Layia glandulosa*) and desert beauty (*Linanthus bellus*) (Reiser 2001).

Within the Boulder Brush Corridor, sticky geraea occurs within exposed sandy openings. Top soils are intact where sticky geraea occurs. Sandy, xeric soils, which was found within the Boulder Brush Corridor, are frequently used by sticky geraea (Reiser 2001). Within the Boulder Brush Corridor, Jacumba milk-vetch, white daisy tidytips and desert beauty are associates. Within the Boulder Brush Corridor there were approximately 673 individuals of sticky geraea, based on the survey conducted in 2018. Sticky geraea is found throughout the Boulder Brush Corridor, but is most abundant within central portions of the Boulder Brush Corridor. Populations of sticky geraea occur within seven of the vegetation communities: big sagebrush scrub, red shank chaparral, montane buckwheat scrub, coast live oak woodland, granitic northern mixed chaparral, semi-desert chaparral, and disturbed habitat. The largest populations of sticky geraea within the Boulder Brush Corridor occur within red shank chaparral.

Desert Beauty (*Linanthus bellus*, List B)

Desert beauty is a CRPR List 2.3 (CNPS 2018) and a County List B species (County of San Diego 2010a). A member of the phlox (Polemoniaceae) family, this annual herb blooms from April through May in chaparral habitats typical of the high desert region (Reiser 2001). This species typically occurs at elevations of 3,281 to 5,493 feet amsl. It has been recorded in San Diego County and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for desert beauty is based on the elevation range restrictions, which shows its potential range along the foothills of the Peninsular Ranges, San Jacinto Mountain, and Santa Ana Mountain (Jepson Flora Project 2018). Specimen records are primarily from the Boulevard and McCain Valley areas, with a couple of records also north of Warner Springs, Tierra del Sol, and Jacumba (Jepson Flora Project 2018). This species is relatively common within openings in upland habitats in this region based on the results of plant surveys in the area. Desert beauty uses Mottsville loamy coarse sand. Desert beauty is typically associated with sticky geraea and variable linanthus (*Leptosiphon parviflorus*) and coastal gilia (*Gilia diegensis*) (Reiser 2001).

Within the Boulder Brush Corridor, broad sandy openings within upland habitat are the typical habitat of desert beauty. Desert beauty is associated with sticky geraea and viable linanthus. Trails, roads, off road vehicle routes and other disturbed soils lack desert beauty populations within the Boulder Brush Corridor. Top soils are undisturbed where desert beauty is found. Within the Boulder Brush Corridor there were approximately 1,400 individuals of desert beauty, based on the survey conducted in 2018. Desert beauty occurs more frequently within the central portion of the Boulder Brush Corridor. Populations of desert beauty occur within three vegetation communities: red shank chaparral, montane buckwheat scrub, and granitic northern mixed chaparral. The largest populations of desert beauty in the Boulder Brush Corridor occur within red shank chaparral.

Southern Jewelflower (*Streptanthus campestris*, List A)

Southern jewelflower is a CRPR List 1B.3 (CNPS 2018) and a County List A species (County of San Diego 2010a). A member of the mustard (Brassicaceae) family, this tall annual herb blooms from May through June in chaparral, yellow pine forest, and pinyon-juniper woodland habitats. It is most likely to occur within the high desert region (Reiser 2001). Near Boulevard, southern jewelflower is found within large boulder fields with partial shade typically from junipers and in Miller Valley, chamise chaparral is the more typical habitat of southern jewelflower (Reiser 2001). Southern jewelflower has been documented from Julian, California, to In-Koh-Pah Mountains, California (Reiser 2001). Tollhouse rocky coarse sandy loam is the typical soil type of southern jewelflower (Reiser 2001). This species typically occurs at elevations of 2,900 feet to 7,500 feet amsl. Cleveland's beardtougue (*Penstemon clevelandii*) is a likely associate of southern jewelflower.

Within the Boulder Brush Corridor, shaded habitats are the typical habitat of southern jewelflower. Southern jewelflower occurs within sandy loam soils around both chamise plants and redshank plants. Areas with southern jewelflower are undisturbed and top soils are intact. Within the Boulder Brush Corridor there were approximately 30 individuals of southern jewelflower, based on the survey conducted in 2018. Southern jewelflower occurs more frequently within the central portion and northern portions of the Boulder Brush Corridor. Populations of southern jewelflower occur within four of the vegetation communities: red shank chaparral, granitic northern mixed chaparral, unvegetated stream channel, and disturbed habitat. The largest populations of southern jewelflower occur within redshank chaparral.

County List C and D Species

Plants categorized as County List C species are plants that may be rare but more information is needed to determine their true rarity status. Plants categorized as County List D are of limited distribution and are uncommon, but are not presently rare or endangered (County of San Diego 2010a). Two County List D species were observed in the Boulder Brush Corridor. There are no County List C and D species that have high potential to occur.

Payson's Jewelflower (*Caulanthus simulans*, *List D)

Payson's jewelflower is a CRPR 4.2 (CNPS 2018) and a County List D species (County of San Diego 2010a). A member of the mustard (Brassicaceae) family, this annual herb blooms from March through June in chaparral and coastal sage scrub. Payson's jewelflower has also been documented in Juniper woodland and pinyon pine (Reiser 2001). Payson's jewelflower has been documented from Julian, California, to Jacumba Hotsprings, California (SDNHM 2018). Reports of Payson's jewelflower have been documented from McCain Valley, Jacumba and Campo. Payson's jewelflower is found on sheephead rocky fine sandy loam (Reiser 2001). Payson's jewelflower is associated with California juniper (*Juniperus californica*), Desert apricot (*Prunus fremontii*), and hairy lotus (*Acmispon strigosus*). This species typically occurs at elevations of 1,300 feet to 7,200 feet amsl. It has been recorded in San Diego County.

Payson's jewelflower was observed north of the Boulder Brush Corridor during 2019 Quino checkerspot butterfly surveys. It was not observed during 2017 or 2018 rare plant surveys, despite being in full bloom at the start of February 2018 within nearby Campo, California (based on personal communication with botanists (Mulligan 2018)). The Boulder Brush Corridor consists of quality habitat for Payson's jewelflower and is within the distribution of this species. Based on this information and the typical distribution of Payson's jewelflower, it has high potential to occur in suitable habitat but was not documented in 2017 or 2018 due to timing of rare plant surveys and

perhaps lower rainfall. Given that Payson's jewelflower is a CRPR 4.2 (CNPS 2018) and a County List D species (County of San Diego 2010a), impacts to this species would not be significant.

Colorado Desert Larkspur (*Delphinium parishii *ssp.* subglobosum*, List D)

Colorado Desert larkspur is a CRPR 4.3 (CNPS 2018) and a County List D species (County of San Diego 2010a). A member of the buttercup (Ranunculaceae) family, this perennial herb blooms from March through April in creosote bush scrub, chaparral and pinyon-juniper woodland. According to Reiser, open Sonoran desert scrub is the most favorable habitat for Colorado Desert larkspur. Colorado Desert larkspur is found within both high and low desert plant communities but favorable to partially shaded locations (Reiser 2001). Historical records of Colorado Desert larkspur document populations within McCain Valley and Lost Valley (near Boulevard, California) but numerous populations are found within the desert (Reiser 2001). Colorado Desert larkspur is associated with Pectocarya species, Arizona lupine (*Lupinus arizonicus*) and California barrel cactus (*Ferocactus cylindraceus*) (Reiser 2001). This species typically occurs at elevations of 1,900 feet to 4,200 feet amsl.

Within the Boulder Brush Corridor, Colorado Desert larkspur is associated with buckwheat species and documented growing within or near the buckwheat shrubs in many cases. The Boulder Brush Corridor consists of a mixture of desert and high desert areas which Colorado Desert larkspur is successful within. Buckwheat within the Boulder Brush Corridor may provide shade needed for Colorado Desert larkspur germination or overall growth. Colorado Desert larkspur was also documented near numerous Pectocarya plants as cited by Reiser 2001. Areas with Colorado Desert larkspur are undisturbed and topsoils are intact. Within the Boulder Brush Corridor there were approximately 82 individuals of ~~southern~~ Colorado Desert larkspur, based on the survey conducted in 2018. Colorado Desert larkspur occurs more frequently within the southwestern sections of the Boulder Brush Corridor. Colorado Desert larkspur occur within six of the vegetation communities: montane buckwheat scrub, coast live oak woodland, semi-desert chaparral, granitic northern mixed chaparral, red shank chaparral, and disturbed habitat. The largest populations of Colorado Desert larkspur were within montane buckwheat scrub.

4.5.2 Campo Corridor

Based on habitat assessments, no federally listed plant species have the potential to occur in the Campo Corridor. Focused surveys for plants were conducted by AECOM on an overlapping project site in spring and fall of 2010 and spring 2011 (AECOM 2012). Special-status plant species directly observed during focused surveys or known to occur in the surrounding region are described in Attachment F-2, Special-Status Plant Species Detected or Potentially Occurring in the

Campo Corridor, which describes their known occurrences or potential to occur within the Campo Corridor based on their general biology (primary habitat associations, life form, blooming period, and known elevation range).

Sensitive plant species directly observed within the Campo Corridor for the Shu'luuk Wind project include the following County List A-D species: Tecate cypress (*Hesperocyparis forbesii*, List A), Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*, List A), sticky geraea (*Geraea viscida*, List B), southern jewelflower (*Streptanthus campestris*, List A), Payson's jewelflower (List D), Peninsular spineflower (*Chorizanthe leptotheca*, List D), Colorado desert larkspur (*Delphinium parishii* ssp. *subglobosum*, List D), and pride-of-California (*Lathyrus splendens*, List D).

Additional plant species with a moderate to high potential to occur are listed in Attachment F-2 and described below. Plants that are not expected to occur or have low potential to occur are listed in Attachment G-2, Special-Status Plant Species with Low Potential or Not Expected to Occur in the Campo Corridor. Attachments F-2 and G-2 include all County Lists A–D species (County of San Diego 2010a), as well as species recorded in the Live Oak Springs, Cameron Corners, Campo, and Tierra Del Sol quadrangles and the surrounding quadrangles (CDFW 2018a; CNPS 2018; USFWS 2018a). The potential-to-occur determination is based on elevation, habitat, and soils present within the Campo Corridor, and Dudek biologists' knowledge of biological resources in the area and regional distribution of each species.

County List A and B Species

Plants categorized as County List A species are plants that are rare, threatened, or endangered in California and elsewhere. Plants categorized as County List B are rare, threatened, or endangered in California, but more common elsewhere (County of San Diego 2010a). County List A and B species that have been observed during surveys for an overlapping project in 2010 and 2011 (AECOM 2012) are described below and included in Attachment F-2. Species with a moderate or high potential to occur are also discussed below. Additional species that are not expected to occur or have low potential to occur are described in more detail in Attachment G-2. Location information for the species observed during surveys in 2010 and 2011 is not available because AECOM did not map non-federally listed species (AECOM 2012).

Jacumba Milk-Vetch (*Astragalus douglasii *var.* perstrictus*, List A)

Jacumba milk-vetch is a CRPR List 1B.2 (CNPS 2018) and County List A species (County of San Diego 2010a). This perennial herb in the pea or bean family (Fabaceae) blooms from April through June. It occurs in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub,

valley and foothill grassland, and rocky communities at elevations of 2,953 to 4,495 feet amsl. It has been recorded in San Diego County and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for Jacumba milk-vetch is based on the elevation range restrictions, which shows its potential range along the foothills of the Peninsular Ranges, San Jacinto Mountain, and Santa Ana Mountain (Jepson Flora Project 2018). Specimen records include Boulevard, Jacumba, La Posta, Tierra del Sol, Live Oak Springs, Kitchen Creek, and Julian (Jepson Flora Project 2018). La Posta loams are one soil type used by Jacumba milk-vetch (Reiser 2001). Jacumba milk-vetch is associated with chamise, sticky geraea and mountain mahogany (Reiser 2001). Jacumba milk-vetch is relatively common in upland habitats and roadsides in this region based on the results of plant surveys in the area.

Jacumba milk-vetch was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor on the Reservation.

Tecate Tarplant (*Deinandra floribunda*, List A)

Tecate tarplant is a CRPR List 1B.2 (CNPS 2018) and a County List A species (County of San Diego 2010a). A member of the sunflower (Asteraceae) family, this species blooms from August through October in chaparral and coastal scrub habitats. Tecate tarplant is an annual herb that occurs at elevations of 230 to 4,003 feet amsl. It has been recorded in San Diego County and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for Tecate tarplant is based on the elevation range restrictions, which shows its potential range throughout inland San Diego County, a portion of southern Riverside County, and parts of Orange County. Specimen records are primarily from Jamul to the Boulevard area (Jepson Flora Project 2018). This species is relatively common within dry, ephemeral drainages and washes in upland habitats in this region based on the results of plant surveys in the area. Within the washes where Tecate tarplant occurs a deep sandy alluvium is present which creates limited shrub cover allowing for well adapted species like Tecate tarplant to grow unencumbered. Vegetative competition in these sandy ephemeral drainages is limited (Reiser 2001).

While Tecate tarplant was not observed during focused surveys conducted for the Shu'luuk Wind project, it has a high potential to occur within the Campo Corridor, because suitable habitat occurs on site.

Tecate Cypress (*Hesperocyparis forbesii*, List A)

Tecate cypress is a CRPR List 1B.1 (CNPS 2018) and County List A species (County of San Diego 2010a). This perennial evergreen tree occurs in closed-cone coniferous forest and chaparral communities with clay, gabbroic, or metavolcanic substrates at elevations of 206 to 4,920 feet amsl. It has been recorded in Orange, Riverside, and San Diego counties as well as Baja California, Mexico (CNPS 2018).

Tecate cypress was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

Sticky Geraea (*Geraea viscida*, List B)

Sticky geraea is a CRPR List 2.3 (CNPS 2018) and a County List B species (County of San Diego 2010a). A member of the sunflower (Asteraceae) family, this perennial herbaceous species has rayless flowers and blooms from May through June in chaparral habitats. Sticky geraea occurs at elevations from 1,476 to 5,557 feet amsl (CNPS 2018). It has been recorded in San Diego County, Imperial County, and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for sticky geraea is based on the elevation range restrictions, which shows its potential range throughout inland San Diego County, a portion of southern Riverside County, and parts of Orange County. Specimen records are primarily from Campo to the Ocotillo area (Jepson Flora Project 2018). This species is relatively common within openings in upland habitats in this region based on the results of plant surveys in the area. High desert chaparral openings are the preferred habitat for this short-lived herbaceous perennial and fires promote reproduction. Sticky geraea is associated with tollhouse rocky coarse sandy loam (Reiser 2001). Sticky geraea is found to be associated with Jacumba milk-vetch, white daisy tidytips (*Layia glandulosa*) and desert beauty (*Linanthus bellus*) (Reiser 2001).

Sticky geraea was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

Desert Beauty (*Linanthus bellus*, List B)

Desert beauty is a CRPR List 2.3 (CNPS 2018) and a County List B species (County of San Diego 2010a). A member of the phlox (Polemoniaceae) family, this annual herb blooms from April through May in chaparral habitats typical of the high desert region (Reiser 2001). This species typically occurs at elevations of 3,281 to 5,493 feet amsl. It has been recorded in San Diego County

and Baja California, Mexico (CNPS 2018). The Jepson bioregional range for desert beauty is based on the elevation range restrictions, which shows its potential range along the foothills of the Peninsular Ranges, San Jacinto Mountain, and Santa Ana Mountain (Jepson Flora Project 2018). Specimen records are primarily from the Boulevard and McCain Valley areas, with a couple of records also north of Warner Springs, Tierra del Sol, and Jacumba (Jepson Flora Project 2018). This species is relatively common within openings in upland habitats in this region based on the results of plant surveys in the area. Desert beauty uses Mottsville loamy coarse sand. Desert beauty is typically associated with sticky geraea and variable linanthus (*Leptosiphon parviflorus*) and coastal gilia (*Gilia diegensis*) (Reiser 2001).

While Desert beauty was not observed during focused surveys conducted for the Shu'luuk Wind project, it has a high potential to occur within the Campo Corridor, because suitable habitat occurs on site.

Southern Jewelflower (*Streptanthus campestris*, List A)

Southern jewelflower is a CRPR List 1B.3 (CNPS 2018) and a County List A species (County of San Diego 2010a). A member of the mustard (Brassicaceae) family, this tall annual herb blooms from May through June in chaparral, yellow pine forest, and pinyon-juniper woodland habitats. It is most likely to occur within the high desert region (Reiser 2001). Near Boulevard, southern jewelflower is found within large boulder fields with partial shade typically from junipers and in Miller Valley, chamise chaparral is the more typical habitat of southern jewelflower (Reiser 2001). Southern jewelflower has been documented from Julian, California, to In-Koh-Pah Mountains, California (Reiser 2001). Tollhouse rocky coarse sandy loam is the typical soil type of southern jewelflower (Reiser 2001). This species typically occurs at elevations of 2,900 feet to 7,500 feet amsl. Cleveland's beardtougue (*Penstemon clevelandii*) is a likely associate of southern jewelflower.

Southern jewelflower was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

County List C and D Species

Plants categorized as County List C species are plants that may be rare but more information is needed to determine their true rarity status. Plants categorized as County List D are of limited distribution and are uncommon, but are not presently rare or endangered (County of San Diego 2010a). Four County List D species were observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project and are described below.

Colorado Desert Larkspur (*Delphinium parishii *ssp.* subglobosum*, List D)

Colorado Desert larkspur is a CRPR 4.3 (CNPS 2018) and a County List D species (County of San Diego 2010a). A member of the buttercup (Ranunculaceae) family, this perennial herb blooms from March through April in creosote bush scrub, chaparral and pinyon-juniper woodland. According to Reiser, open Sonoran desert scrub is the most favorable habitat for Colorado Desert larkspur. Colorado Desert larkspur is found within both high and low desert plant communities but favorable to partially shaded locations (Reiser 2001). Historical records of Colorado Desert larkspur document populations within McCain Valley and Lost Valley (near Boulevard, California) but numerous populations are found within the desert (Reiser 2001). Colorado Desert larkspur is associated with Pectocarya species, Arizona lupine (*Lupinus arizonicus*) and California barrel cactus (*Ferocactus cylindraceus*) (Reiser 2001). This species typically occurs at elevations of 1,900 feet to 4,200 feet amsl.

Colorado Desert larkspur was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

Payson's Jewelflower (*Caulanthus simulans*, List D)

Payson's jewelflower is a CRPR 4.2 (CNPS 2018) and a County List D species (County of San Diego 2010a). A member of the mustard (Brassicaceae) family, this annual herb blooms from March through June in chaparral and coastal sage scrub. Payson's jewelflower has also been documented in Juniper woodland and pinyon pine (Reiser 2001). Payson's jewelflower has been documented from Julian, California, to Jacumba Hotsprings, California (SDNHM 2018). Reports of Payson's jewelflower have been documented from McCain Valley, Jacumba and Campo. Payson's jewelflower is found on sheephead rocky fine sandy loam (Reiser 2001). Payson's jewelflower is associated with California juniper (*Juniperus californica*), Desert apricot (*Prunus fremontii*), and hairy lotus (*Acmispon strigosus*). This species typically occurs at elevations of 1,300 feet to 7,200 feet amsl. It has been recorded in San Diego County.

Payson's jewelflower was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

Peninsular spineflower (*Chorizanthe leptotheca*, List D)

Peninsular spineflower is a CRPR 4.2 (CNPS 2018) and a County List D species (County of San Diego 2010a). A member of the buckwheat (Polygonaceae) family, this annual herb blooms from

May through August in chaparral, coastal scrub, and lower montane coniferous forest vegetation communities. It occurs associated with alluvial fans or on granitic substrates. Peninsular spineflower has been documented from Otay east to Campo and north to Palomar Mountain area (SDNHM 2018). Peninsular spineflower may be associated with California cottonrose (*Logfia filaginoides*), hooked pincushionplant (*Navarretia hamata*), and sapphire woollystar (*Eriastrum sapphirinum*) (Reiser 2001). This species typically occurs at elevations of 980 feet to 6,235 feet amsl. It has been recorded in Riverside, San Bernardino, and San Diego counties, as well as Baja California, Mexico (CNPS 2018).

Peninsular spineflower was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

Pride-of-California (*Lathyrus splendens*, *List D)

Pride-of-California is a CRPR 4.3 (CNPS 2018) and a County List D species (County of San Diego 2010a). A member of the legume family (Fabaceae), this climbing perennial herb blooms from March through June in chaparral habitats, typically those dominated by chamise (Reiser 2001; CNPS 2018). This species is only known from San Diego County and Baja California, Mexico (CNPS 2018). This climbing species with tendrils is generally found growing through woody shrubs (Reiser 2001). Pride-of-California has been documented from Jamul to Boulevard, California in southern San Diego County (SDNHM 2018). This species typically occurs at elevations of 655 feet to 5,005 feet amsl (CNPS 2018). Black sage (*Salvia mellifera*), ladies' tobacco (*Pseudognaphalium californicum*), and Peninsular spineflower are likely associates of pride-of-California (Reiser 2001).

Pride-of-California was observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind project (AECOM 2012), which is located in the same general area as the Campo Corridor.

4.6 Sensitive Wildlife Species

The County divides sensitive wildlife species into County Group 1 and County Group 2 based on the species' rarity and known threats (County of San Diego 2010a). County Group 1 species include those that have a high level of sensitivity, are listed as threatened or endangered, or have a natural history requirement that increases their sensitivity. County Group 2 species include those that are becoming less common, although not so rare that extinction is imminent without immediate action. CDFW assigns status to species whose population levels are declining, have limited ranges, and/or are vulnerable to extinction due to continuing threats (CDFW 2018b). In addition, Fully Protected

species are protected by CDFW, and Watch List (WL) species are candidates for higher sensitivity status. USFWS provides the Birds of Conservation Concern (BCC) status to migratory and non-migratory bird species that adhere to the 1988 amendment to the Fish and Wildlife Conservation Act that mandates USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973" (USFWS 2008).

County Group 1 and/or Species of Special Concern (SSC), as well as County Group 2 species that have been observed in the Boulder Brush Corridor, or those that have a high potential to occur, are also discussed in this section and included in Attachment H-1, Special-Status Wildlife Species Detected or Potentially Occurring in the Boulder Brush Corridor and Attachment H-2, Special-Status Wildlife Species Detected or Potentially Occurring in the Campo Corridor. Additional species that have moderate potential to occur are also described in more detail in Attachments H-1 and H-2. Species that have been observed or have potential to occur, but not during the life history phase that is considered "special-status" (e.g., roosting or nesting), are described in Attachment I-1, Special-Status Wildlife Species Not Expected or Low Potential to Occur in the Boulder Brush Corridor and Attachment I-2, Special-Status Wildlife Species Not Expected or Low Potential to Occur in the Campo Corridor. For example, certain bat species may have potential to forage in the Boulder Brush Corridor or Campo Corridor, but would not roost, due to lack of roosting structures.

4.6.1 Boulder Brush Corridor

The following special-status wildlife species were observed within or adjacent to the Boulder Brush Corridor during surveys conducted in 2011, 2012, 2017, 2018 and/or 2019: turkey vulture, loggerhead shrike, golden eagle, California horned lark, San Diego black-tailed jackrabbit, Cooper's hawk, sharp-shinned hawk, northern harrier, red-shouldered hawk, western bluebird (*Sialia mexicana*), yellow warbler, barn owl, Bell's sage sparrow, mule deer, San Diegan tiger whiptail, Blainville's horned lizard, and Quino checkerspot butterfly. One merlin was observed flying over the site in October 2018.

Special-status wildlife species with a high potential to occur within the Boulder Brush Corridor include Coronado skink (*Plestiodon skiltonianus interparietalis*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), San Diego ringneck snake (*Diadophis punctatus similis*), rosy boa (*Lichanura trivirgata*), San Diego banded gecko (*Coleonyx variegatus abbotti*), San Diego

desert woodrat (*Neotoma lepida intermedia*[4]), cougar (*Puma concolor*), western small-footed myotis (*Myotis ciliolabrum*; roosting potential), and Peninsular metalmark (*Apodemia virgulti peninsularis*) (Attachment H-1).

The Project Site does not overlap within any critical habitat for plant or wildlife species (Figure 2-1, USFWS Critical Habitat). The Project Site is located approximately 2.1 miles west of designated critical habitat for Peninsular bighorn sheep.

4.6.1.1 County Group 1 Species and/or Species of Special Concern

County Group 1 species and/or a SSC that have been observed in the Boulder Brush Corridor or have high potential to occur are described below, and are included in Attachment H-1. Additional species that have moderate potential to occur are described in more detail in Attachment H-1. One federally listed species was observed within the Boulder Brush Corridor: Quino checkerspot butterfly. No state-listed species were observed or have potential to occur within the Boulder Brush Corridor.

Amphibians and Reptiles

San Diegan Tiger Whiptail (*Aspidoscelis tigris stejnegeri*), SSC/County Group 2

San Diegan tiger whiptail is a SSC and County Group 2 species. It is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, north into Ventura County, and south into Baja California, Mexico (Lowe et al. 1970; Stebbins 2003).

Tiger whiptail (*A. tigris*) is found in a variety of habitats, primarily in areas where plants are sparse and there are open areas for running. According to Stebbins (2003), the species range occurs from deserts to montane pine forests, where the species prefers warmer and drier areas. The species is also found in woodland and streamside growth, and it avoids dense grassland and thick shrub growth.

San Diegan tiger whiptail was observed several times during surveys in 2018 and 2019.

San Diego Banded Gecko (*Coleonyx variegatus abbotti*), SSC/County Group 1

San Diego banded gecko is a SSC and County Group 1 species. San Diego banded gecko is only recorded in Riverside, San Diego, and San Bernardino Counties in California (CDFW 2018a). San

[4] The San Diego Mammal Atlas (Tremor et al. 2017) describes this species as N. bryanti, a distinct species from N. lepida, with N. bryanti occurring in Baja and Southern California west of Imperial and Coachella Valley. However, wildlife agencies still refer to this species as N. l. intermedia and, therefore, this name is used for this analysis.

Diego banded gecko is active at night and hides in burrows during daylight (Nafis 2016). The typical breeding season for San Diego banded gecko occurs during April and May, and hibernation is generally November through February (Nafis 2016). General habitat for this species includes coastal scrub and chaparral, and this species is typically found in granite or rocky outcrops (CDFW 2018a).

This species has high potential to occur within the Boulder Brush Corridor. Suitable habitat within the Boulder Brush Corridor includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral), and sage scrub (montane buckwheat scrub and big sagebrush scrub).

Blainville's Horned Lizard (*Phrynosoma blainvillii*), SSC/County Group 2

Blainville's horned lizard (previously coast horned lizard) is a SSC, and County Group 2 species. It is found from the Sierra Nevada foothills and central California to coastal Southern California. It is often associated with coastal sage scrub, especially areas of level to gently sloping ground with well-drained loose or sandy soil, but the species can also be found in annual grasslands, chaparral, oak woodland, riparian woodland, and coniferous forest between 30 and 7,030 feet amsl (Jennings and Hayes 1994). This reptile typically avoids dense vegetation, preferring 20% to 40% bare ground in its habitat. Blainville's horned lizard can be locally abundant in areas where it occurs, with densities of near 20 adults per acre. Adults are active from late March through late August, and young are active from August through November or December.

Blainville's horned lizard was observed numerous times during Project surveys in 2018 and 2019.

Coast Patch-Nosed Snake (*Salvadora hexalepis virgultea*), SSC/Group 2

Coast patch-nosed snake is a SSC and County Group 2 species. This species occurs in California from the northern Carrizo Plains along the coast toward coastal northern Baja California (Nafis 2018). Coast patch-nosed snake inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains. This species is known to dig with the tip of its nose into underground burrows. The typical breeding season for coast patch-nosed snake occurs May through August (Nafis 2018).

This species has high potential to occur within the Boulder Brush Corridor. The Boulder Brush Corridor is within the species' range (Nafis 2018). Within the Boulder Brush Corridor, suitable habitat includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral), and sage scrub (flat-topped buckwheat and big sagebrush scrub).

Birds

Cooper's Hawk (*Accipiter cooperii*), WL/County Group 1

Cooper's hawk is a WL, and County Group 1 species. It is found throughout California in wooded areas. This species inhabits live oak, riparian, deciduous, or other forest habitats near water. Nesting and foraging usually occur near open water or riparian vegetation. Nests are built in dense stands with moderate crown depths, usually in second-growth conifer or deciduous riparian areas. Cooper's hawk uses patchy woodlands and edges with snags for perching while it hunts for prey such as small birds, small mammals, reptiles, and amphibians within broken woodland and habitat edges (Zeiner et al. 1990a).

A Cooper's hawk was observed foraging and nesting on site in the norther, central and western portion of the Boulder Brush Corridor during Project surveys in 2018 and 2019.

Sharp-Shinned Hawk (*Accipiter striatus*), WL/County Group 1

Sharp-shinned hawk is a WL and County Group 1 species. This species is a common migrant and winter resident throughout California, and an uncommon permanent resident and breeder in mid-elevation habitats (Zeiner et al. 1988–1990). Sharp-shinned hawk breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats on north-facing slopes with perches. This species prefers riparian habitats, and roosts in intermediate- to high-canopy forest, often to forage in openings at edges of woodlands. Nests are found in dense, even-aged, single-layered forest canopy. The sharp-shinned hawk is the least common breeding *Accipiter* species in California (Zeiner et al. 1988–1990).

Sharp-shinned hawk was observed flying over the site in December 2017. Since sharp-shinned hawk's special status is associated with nesting, it is not analyzed further in this report, except as part of the raptor foraging discussion.

Golden Eagle (*Aquila chrysaetos*), BCC/Fully Protected, WL/County Group 1

Golden eagle is a BCC, WL, fully protected, and County Group 1 species. In addition, golden eagle is protected under the federal Bald and Golden Eagle Protection Act.

Golden eagle is a year-round, diurnally active species that is a permanent resident and migrant throughout California. Golden eagle is more common in northeast California and the Coast Ranges than in Southern California and the deserts. In Southern California, the species tends to occupy mountain, foothill, and desert habitats. Foraging habitat for this species includes open habitats with

scrub, grasslands, desert communities, and agricultural areas. This species nests on cliffs within canyons and escarpments and in large trees (generally occurring in open habitats), and occurs primarily in rugged, topographically complex landscapes (Garrett and Dunn 1981; Johnsgard 1990). Most nests are located on cliffs or trees near forest edges, in trees within woodland savannas, or in small stands near open habitats (Kochert et al. 2002). Nest locations tend to be more closely associated with topographic heterogeneity than with a particular vegetation type (Call 1978).

Nest building can occur almost any time during the year. This species nests on cliffs, rock outcrops, large trees, and artificial structures such as electrical transmission towers, generally near open habitats used for foraging (Garrett and Dunn 1981; Johnsgard 1990; Kochert et al. 2002; Scott 1985). Golden eagle commonly builds, maintains, and variably uses multiple alternative nest sites in its breeding territory, routinely refurbishing and reusing individual nests over many years. Generally, the nests are large platforms composed of sticks, twigs, and greenery that are often 10 feet across and 3 feet high (Zeiner et al. 1990a). Pairs may build more than one nest and tend multiple nests prior to laying eggs (Kochert et al. 2002). Each pair can have up to a dozen nests, especially in cliff-nesting habitat where nests persist for longer than they do in trees, but generally only two to three nests are used in rotation from one year to the next. Some pairs use the same nest each year, but others use alternative nests more regularly. Succeeding generations of eagles may even use the same nest (Terres 1980, as cited in CPUC and BLM 2011).

In California, golden eagle breeds January through August, with peak breeding activity occurring February through July. Breeding typically begins in January with courtship and nest building, and egg laying typically occurs in February and March (Brown 1976; CPUC and BLM 2011; WRI 2010). Golden eagles typically lay one to three eggs, which they incubate for 43 to 45 days (Beebe 1974). Hatching and then the feeding of nestlings takes place March through June. After their young fledge, the adult eagles may continue to feed the young birds for several months (CPUC and BLM 2011; WRI 2010). In the prey-rich oak woodland and savannah habitats of the California Coast Ranges, established golden eagle breeding pairs typically nest in most years (Hunt and Hunt 2006; Hunt et al. 1999); however, the long breeding cycle may contribute to some pairs breeding only every-other-year, even when food is abundant (CPUC and BLM 2011; WRI 2010). In other situations, where overall ecosystem productivity is lower or more variable from year to year, pairs need to range farther in search of food and may not nest every year because of the energetic demands of securing dispersed prey (Kochert et al. 2002).

Lagomorphs (rabbits and hares) and ground squirrels are of primary importance in the diet of most golden eagles, including in San Diego County, but their diet may include a wide variety of other mammals, reptiles, and birds, and frequently includes carrion, especially during winter (Johnsgard 1990; Kochert et al. 2002; Olendorff 1976).

Based on the review of the Boulder Brush Corridor, there are no suitable large trees or cliffs present for nesting within the Boulder Brush Corridor; therefore, this species is not expected to nest on site. Unitt (2004) states that "golden eagle is absent from some surprisingly large yet little disturbed areas of San Diego County, such as Cuyamaca Mountains and the Campo Plateau between Lake Morena and Jacumba." The historical breeding distribution map and general occurrence maps in Unitt (2004) also present a pocket of unoccupied habitat in the Project Vicinity. All-day eagle surveys were conducted on site between May and June 2018, and October through November 2018; 30-minute point counts were performed between September 2017 and September 2019. No golden eagles were observed during these focused surveys, indicating that this species does not occur in the Boulder Brush Corridor with much frequency. One golden eagle was observed flying adjacent to the Boulder Brush Corridor during the focused Quino checkerspot butterfly surveys in April 2018.

The USGS has been tagging eagles with affixing telemetry transmitters that minimally collect data every 15 minutes and up to every 30 seconds in San Diego County, and collecting 100,000s of datapoints since 2014 (Tracy et al. 2016, 2017). This data is the most comprehensive data set available, and includes real-time and continual data on each individual. The Figure 4-3 series depicts the data for each individual that occurred within a 10-mile radius of the Boulder Brush Corridor; the data for each is summarized below by individual. Tabular data for each data point captured within the 10-mile zone is provided in Attachment J, 2015 and 2016 Golden Eagle Biotelemetry Data.

Although there are data points of golden eagle within the 10-mile zone and occurrences of the species flying over the Boulder Brush Boundary, these are very minor when compared to eagle overall use areas and geographic range. As shown in the figures; in Table 4-3, Biotelemetry Data for Golden Eagles Within 10 Miles of the Boulder Brush Boundary; and in the discussion above, the Boulder Brush Boundary appears to be at the very fringe of individual eagle territories or use areas, and likely mostly represent brief exploratory searches.

Table 4-3
Biotelemetry Data for Golden Eagles Within 10 Miles of the Boulder Brush Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity On/Near Boulder Brush Boundary (10-Mile Buffer)
GOEA-SD-F004	12/27/2014	Marron Valley	Biotelemetry data shows this individual traveling from southeast San Diego County north through the Peninsular Ranges into the San Jacinto and San	The data show a flight path through the southern portion of the Boulder Brush Boundary on April 11, 2015. Within the 10-mile buffer, the data show flight paths west and southwest of the Boulder Brush Boundary on April 10, 2015, and October 22, 2015, as well

Table 4-3
Biotelemetry Data for Golden Eagles Within 10 Miles of the Boulder Brush Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity On/Near Boulder Brush Boundary (10-Mile Buffer)
			Bernardino Mountains. There is limited flight activity west to the San Gabriel Mountains and back east.	as some points south, west, and northwest of the Boulder Brush Boundary in January–April, July, September, and October 2015 (Figure 4-3a, USGS Golden Eagle Bird F004 – 2015).
GOEA-SD-F006	2/2/2015	Santa Ysabel	Biotelemetry data shows this individual travelling from Baja California north into Otay, Ramona, Anza Borrego and through Palm Desert and Cathedral City.	Within the 10-mile buffer, the data show points northwest and west from May and June 2015 (Figure 4-3b, USGS Golden Eagle Bird F006 – 2015).
GOEA-SD-F007	2/23/2015	Long Potrero	Biotelemetry data shows this individual concentrated in two areas: east of Tecate, Mexico and around Barrett Lake. Flight paths also show travel to the surrounding areas as far north as Julian and farther south of Tecate, Mexico.	Within the 10-mile buffer, the data show a flight pattern from December 23, 2015. There are several points within the southwest portion of the Reservation from November 2015. There are points from November and December 2015 west of the Boulder Brush Boundary and along the western side of the buffer (Figure 4-3c, USGS Golden Eagle Bird F007 – 2015). Data from 2016 show flight paths through the western portion of the Reservation on April 2, 2016; July 15, 2016; August 10, 12, and 13, 2016; September 22 and 30, 2016; October 15, 2016; and November 8, 2016. There are also numerous point data within the western half of the buffer in 2016 (Figure 4-3d, USGS Golden Eagle Bird F007 – 2016).
GOEA-SD-F013	2/11/2016	Gregory Mountain	Biotelemetry data shows this individual travelling around the Gomez Trail and Agua Tibia Creek areas on the Pauma and Pala Reservations.	Within the 10-mile buffer, the data show a north–south flight path west of the Boulder Brush Boundary (Figure 4-3e, USGS Golden Eagle Bird F013 – 2016).
GOEA-OC-F014	2/12/2016	Fremont Canyon	Biotelemetry data shows this individual travelling throughout Southern California including Baja California, the San Joaquin Valley and from California to Wyoming and back.	The data show a flight path through the northern portion of the Boulder Brush Boundary on March 8, 2016. The transmitter recorded the eagle flying through Project Area between 11:41 a.m. and 11:56 a.m. and the individual continued flying in a southwest direction. There are also several points from March 2016 along the eastern and southeastern side of the buffer (Figure 4-3f, USGS Golden Eagle Bird F014 – 2016).

Table 4-3
Biotelemetry Data for Golden Eagles Within 10 Miles of the Boulder Brush Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity On/Near Boulder Brush Boundary (10-Mile Buffer)
GOEA-SD-F016	3/5/2016	Barrett Lake	Biotelemetry data shows this individual concentrated around Barrett Lake and flight paths in the Cleveland National Forest area as well as into Mexico.	Within the 10-mile buffer, the data show points from March, April, June, and August 2016 west of the Boulder Brush Boundary (Figure 4-3g, USGS Golden Eagle Bird F016 – 2016).
GOEA-SD-M005	12/1/2015	Barrett Lake	Biotelemetry data shows this individual concentrated in the hills just south of Barrett Lake with some flight paths north toward Pothole Canyon and northwest toward the San Diego Country Estates.	Within the 10-mile buffer, the data show a flight path from October 1, 2015, through the very southern portion of the buffer into Mexico (Figure 4-3h, USGS Golden Eagle Bird M005 – 2015).
GOEA-SD-M007	12/9/2015	Long Valley	Biotelemetry data shows this individual concentrated around the La Jolla Reservation with flights south toward Campo and into Ensenada, Mexico.	Within the 10-mile buffer, the data show points from December 2015 along the southwestern portion of the buffer (Figure 4-3i, USGS Golden Eagle Bird M007 – 2015). In 2016, there are a couple of flight paths on the western edge of the Project Area in September and October 2016, as well as flight paths in the western half of the buffer in January, May, June, July, August, and September 2016. There are also point data within the buffer throughout most of the 2016 (Figure 4-3j, USGS Golden Eagle Bird M007 – 2016).
GOEA-SD-M010	12/17/2015	Proctor Valley	Biotelemetry data shows this individual concentrated east and south of Tijuana, Mexico with flight paths east of Tecate, Mexico and the Jamul Mountains.	There are no points from 2015 within the 10-mile buffer. Within the 10-mile buffer, the data show a flight path in the southwest from February 17, 2016; there are points from February and March 2016 south of the Boulder Brush Boundary and into Mexico (Figure 4-3k, USGS Golden Eagle Bird M010 – 2016).
GOEA-SD-M011	12/21/2015	Barrett Lake	Biotelemetry data shows this individual concentrated the Presa El Carrizo Lake southwest of Tecate, Mexico with additional concentrated flights around the Otay Lakes, Barrett Lake.	There are no points from 2015 within the 10-mile buffer. The 2016 data shows a flight path on January 25, 2016, in the southwestern portion of the buffer; there are also points from January and July 2016 southwest and north of the Boulder Brush Boundary (Figure 4-3l, USGS Golden Eagle Bird M011 – 2016).

Bell's Sage Sparrow (*Artemisiospiza belli belli*), BCC/WL/County Group 1

Bell's sparrow is a BCC, WL, and County Group 1 species. The recently designated Bell's sparrow (*Artemisiospiza belli*) consists of *A. b. belli* and *A. b. canescens*, both formerly considered subspecies of the sage sparrow (*Amphispiza belli*) and now split from sagebrush sparrow (*A. nevadensis*) (Chesser et al. 2013). The nominate form of Bell's sparrow, Bell's sage sparrow, is designated as a special-status species. This species occurs in chaparral and coastal scrub communities along the Coast Ranges of central California and in the Transverse Ranges of Southern California. This species occurs as a non-migratory resident on the western slope of the central Sierra Nevada range, and in the coastal ranges of California, southward from Marin County and Trinity County, extending into north-central Baja California, Mexico (County of Riverside 200~~3~~8). The range of this species overlaps with that of at least one other subspecies of sage sparrow (County of Riverside 200~~3~~8). This species occupies semi-open habitats with evenly spaced shrubs that are 3.3 to 6.6 feet high. This species is uncommon to fairly common in dry chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and lower foothills of the mountains within its range (County of Riverside 200~~3~~8).

Bell's sage sparrow was observed adjacent to the Boulder Brush Corridor during wildlife surveys in 2019. This species was audibly detected during wildlife surveys in the norther portion of the Boulder Brush Corridor. Within the Boulder Brush Corridor, suitable habitat includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral), and sage scrub (montane buckwheat scrub and big sagebrush scrub).

Red-Shouldered Hawk (*Buteo lineatus*), County Group 1

Red-shouldered hawk is not considered special status by any state or federal agencies; however, it is a County Group 1 species. Red-shouldered hawk inhabits a broad range of North American forests, but favors mature, mixed deciduous–coniferous woodlands, especially bottomland hardwood, riparian areas, flooded deciduous swamps, oak woodlands, eucalyptus groves, and suburban areas with nearby woodlots (Dykstra et al. 2008). This species nests in riparian habitats near permanent water and forages along edges of wet meadows, swamps, and emergent wetlands (Zeiner et al. 1990a).

Red-shouldered hawks were observed adjacent to the Boulder Brush Corridor during surveys in 2018 and have potential to nest in woodland habitat on site.

Turkey Vulture (*Cathartes aura*), County Group 1

Turkey vulture is not considered special status by any state or federal agencies; however, it is considered a County Group 1 species. In California, it is common during the nesting season and is a year-round resident west of the Sierra Nevada, especially in coastal areas. Summer and year-round ranges also include the southeastern United States; portions of Texas, Mexico, Central America, and South America; and some islands in the Caribbean (Kirk and Mossman 1998).

Turkey vultures use a variety of habitats while foraging on wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, non-intensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner et al. 1990a). Nest locations tend to be difficult to find and are usually located in a crevice among granite boulders (Unitt 2004). This species prefers hilly areas that provide deflective updrafts for flight, and generally avoids extensive areas of row-crop farmland (Kirk and Mossman 1998).

Turkey vultures were observed foraging throughout the Boulder Brush Corridor during biological surveys in 2018 and 2019, but the observations were not mapped. The Boulder Brush Corridor does not support suitable cliffs for nesting, and no nests were observed in the trees in the Boulder Brush Corridor. There is suitable foraging habitat within the Boulder Brush Corridor. Suitable foraging habitat includes most vegetation communities and undeveloped land cover.

Northern Harrier (*Circus hudsonius*), SSC/County Group 1

Northern harrier is an SSC, and County Group 1 species. Northern harriers use a wide variety of open habitats in California, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, estuaries, flood plains, and marshes. This species can also forage over coastal sage scrub or other open scrub communities. Nesting areas are associated with marshes, pastures, grasslands, prairies, croplands, desert shrub-steppe, and riparian woodland (Macwhirter and Bildstein 2011). Winter habitats similarly include a variety of open habitats dominated by herbaceous cover. Northern harrier populations are most concentrated in areas with low vegetation.

One northern harrier was observed during wildlife surveys adjacent to the southern portion of the Boulder Brush Corridor in April 2018. Although there is some potential nesting habitat in the meadow habitat along Tule Creek, this species has not been documented nesting in the region (Unitt 2004).

Loggerhead Shrike (*Lanius ludovicianus*), BCC/SSC/County Group 1

Loggerhead shrike is a BCC, SSC, and County Group 1 species. It is found in lowlands and foothills throughout California, and it remains in the southern portion of the state year-round. Preferred habitats for loggerhead shrike are open areas that include scattered shrubs, trees, posts, fences, utility lines, and other structures that provide hunting perches with views of open ground, nearby spiny vegetation or built structures (such as the top of chain-link fences or barbed wire) that provide means to skewer prey items. This species occurs most frequently in riparian areas along the woodland edge, grasslands with sufficient perch and butcher sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas. They can sometimes be found in mowed roadsides, cemeteries, and golf courses, although they occur rarely in heavily urbanized areas (Zeiner et al. 1990a). Loggerhead shrike builds nests in stable shrubs or trees requiring dense foliage for well-concealed nests, and likely nests in the Boulder Brush Corridor.

Loggerhead shrike was observed adjacent to the Boulder Brush Corridor during surveys in 2017 and likely nests within the Boulder Brush Corridor.

Yellow Warbler (*Setophaga petechia*), BCC/SSC/County Group 2

Yellow warbler is a BCC, SSC, and County Group 2 species. Yellow warbler inhabits riparian woodland in coastal and desert lowlands, montane chaparral, open ponderosa pine, and mixed conifer habitats (Zeiner et al. 1990a). This species breeds along the coast of California west of the Sierra Nevada and in eastern California from Lake Tahoe south to Inyo County. Yellow warbler occurs in medium-density woodlands and forests with heavy brush understory, and migrates to sparse to dense woodland and forest habitats.

Yellow warbler was observed adjacent to the Boulder Brush Corridor during the riparian bird surveys conducted in 2018 within riparian habitat in the Boulder Brush Corridor and during wildlife surveys in 2019. There is a potential for this species to nest within suitable habitat.

Mammals

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*), SSC/County Group 2

San Diego black-tailed jackrabbit is a SSC, and County Group 2 species. It is confined to coastal Southern California, with marginal eastern records in Mount Piños, Arroyo Seco, Pasadena, San Felipe Valley, and Jacumba (Hall 1981). It is found in many diverse habitats, but primarily in arid regions supporting short-grass habitats. Jackrabbits typically are not found in high grass or dense

brush where it is difficult for them to move quickly, and the openness of open scrub habitat likely is preferred over dense chaparral. Jackrabbits are common in grasslands that are overgrazed by cattle, and they are well adapted to using low-intensity agricultural habitats (Hall 1981). This species was regularly observed throughout the Boulder Brush Corridor in 2018 and 2019.

San Diego Desert Woodrat (*Neotoma lepida intermedia*), SSC/County Group 2

San Diego desert woodrat is a SSC and County Group 2 species. This species is found in coastal Southern California into Baja California, Mexico (Reid 2006). Marginal eastern records for San Diego desert woodrat in the United States include San Luis Obispo, San Fernando in Los Angeles County, the San Bernardino Mountains and Redlands in San Bernardino County, and Julian in San Diego County (Hall 1981). Desert woodrat is found in a variety of shrub and desert habitats, and are primarily associated with rock outcroppings, boulders, cacti, and areas of dense undergrowth.

San Diego desert woodrat middens were observed during biological surveys in 2018 and 2019. Within the Boulder Brush Corridor, suitable habitat includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral).

Invertebrates

Peninsular Metalmark (*Apodemia virgulti peninsularis*), County Group 1

Peninsular metalmark is a County Group 1 species. This species is common within mountain meadows usually near the edges of woods, Great Basin sagebrush, and montane buckwheat scrub (Faulkner and Klein 2012). Peninsular metalmark is found in the San Jacinto, Palomar, and Laguna Mountains (Butterflies of North America 2018; Faulkner and Klein 2012) and in areas where its host plant, *Eriogonum wrightii* ssp. *membranaceum*, occurs.

Peninsular metalmark was potentially observed within the Boulder Brush Corridor. Behr's metalmark (*Apodemia virgulti*), which is very similar in appearance to Peninsular metalmark, was observed frequently in the Boulder Brush Corridor. The host plant occurs within the Boulder Brush Corridor and therefore, this species could have been observed during the Project surveys.

Quino Checkerspot Butterfly (*Euphydryas editha quino*), FE/County Group 1

In response to comments received on the Notice of Preparation, additional information regarding the potential for Quino checkerspot butterfly to occur within the Boulder Brush Corridor is being provided. Quino checkerspot butterfly was listed as endangered on January 16, 1997 (62 FR 2313–2322). A recovery plan was published for the species on September 17, 2003 (USFWS 2003).

Critical habitat was first designated on April 15, 2008 (67 FR 18356–18395), later revised on June 17, 2009 (74 FR 28776–28862). The Draft Recovery Plan Revisions for Quino checkerspot butterfly is currently undergoing revisions, with draft revisions released in March 2019 (USFWS 2019d), public comment through September 5, 2019, and final revisions to be prepared thereafter.

Quino checkerspot butterfly is found only in western Riverside County, southern San Diego County, and northern Baja California, Mexico (USFWS 2003). This species is found on sparsely vegetated hilltops, on ridgelines, and occasionally on rocky outcrops in open chaparral and coastal sage scrub habitat (typically at less than 3,000 feet above mean sea level). This species requires host plants within these vegetation communities for feeding and reproduction. The primary larval host plant is dotseed plantain; however, several other species have been documented as important larval host plants, including desert plantain, sometimes called woolly plantain (*Plantago patagonica*); thread-leaved bird's beak (*Cordylanthus rigidus*); white snapdragon (*Antirrhinum coulterianum*); owl's clover (*Castilleja exserta*); and Chinese houses (*Collinsia* spp.) (USFWS 2003).

Focused surveys for Quino checkerspot butterfly were conducted in 2011, 2018, and 2019. The 2011 surveys did not cover the full extent of the Boulder Brush Corridor but the 2018 and 2019 surveys did, with the exception of 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. During the first two years of surveys in 2011 and 2018, no Quino checkerspot butterfly individuals were observed within the Boulder Brush Corridor. However, there is suitable habitat within the Boulder Brush Corridor. No Quino larval host plants were observed within the 2018 Quino survey area during the habitat assessment or focused surveys. Surveyors did observe some dead *Cordylanthus rigidus* remaining from the previous year's rainfall; however, since only live host plants are mapped during this effort, these locations were not recorded. No host plants were observed within the Boulder Brush Boundary during the 2011 protocol surveys. The nearest Quino observation is approximately 1.5 miles (almost 2.5 kilometers) east of the Boulder Brush Corridor within the Reservation Boundary.

A total of five Quino checkerspot butterfly individuals were observed during the 2019 focused surveys by Ms. Erin Bergman on April 10, 2019 (Figure 4-1 series) (Attachment B-2). The Quino checkerspot butterfly individuals were observed in an area with open decomposed granite soils, hilltops, ridges, numerous granitic rock outcrops, and various nectar sources. No host plants were observed anywhere within the immediate survey area. Quino checkerspot butterfly individuals spent much of the observation time nectaring on Clearwater cryptantha (*Cryptantha intermedia* var. *intermedia*) and pointed cryptantha (*Cryptantha muricata* var. *jonesii*) for short periods of time (a few seconds), landing on bare ground (a few seconds) and performing hill topping behaviors the majority of the time. These

Quino checkerspot butterfly individuals were only observed during this one survey week on this one day. No other Quino checkerspot butterfly individuals were observed during the protocol surveys.

Quino Checkerspot Butterfly Modeled Habitat

Potentially occupied habitat was modeled based on Quino checkerspot butterfly records and host plants observed in 2019, hilltops, and ridgelines. The habitat model is created from the following parameters based on general industry guidance from USFWS for other projects:

- 200-meter buffer around Quino checkerspot butterfly locations
- 200-meter buffer around "significant" plant populations (i.e., >20 individuals)
- Hilltops
- Ridgelines (centerline with 100-foot (31.2-meter) buffer

Plant population buffers, hilltops, and ridgelines were added to the primary Quino checkerspot butterfly detection polygon or each other as they would connect. If the link was broken by distance or unsuitable habitat, then the potentially occupied patch would end.

The 2019 Quino checkerspot butterfly exclusion areas were removed from the model since those areas were determined to be unsuitable for this species. This model resulted in approximately 121.8 acres of potentially occupied habitat mapped within the Boulder Brush Corridor, a portion of which was considered occupied in 2019 based on the Quino checkerspot butterfly observation on April 10, 2019. Figure 4-6 shows the model and estimated occupied habitat.

4.6.1.2 County Group 2 Species

County Group 2 species that have been observed or have high potential to occur in the Boulder Brush Corridor are described below and included in Attachment H-1. Additional species that have moderate potential to occur are described in more detail in Attachment H-1.

Reptiles

Coronado Skink (*Plestiodon skiltonianus interparietalis*), WL/County Group 2

Coronado skink is a WL and County Group 2 species. This species is common within grassland, woodlands, pine forests, chaparral, especially open sunny areas (e.g., clearings, edges of creeks), and rocky areas near streams with lots of vegetation. However, this species may also be found in

areas away from water. Coronado skink is found in inland Southern California south through the north Pacific coast region of northern Baja California (Nafis 2014).

Although Coronado skink was not detected during surveys, this species has high potential to occur within the Boulder Brush Corridor. Suitable habitat in the Boulder Brush Corridor includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral) and coast live oak woodland.

Rosy Boa (*Lichanura trivirgata*), County Group 2

Rosy boa is not considered special status by any state or federal agencies; however, it is a County Group 2 species. Rosy boa in California ranges from Los Angeles, eastern Kern, and southern Inyo Counties, and south through San Bernardino, Riverside, Orange, and San Diego Counties (Spiteri 1988; Stebbins 2003; Zeiner et al. 1990b). It occurs at elevations from sea level to 5,000 feet amsl in the Peninsular and Transverse Ranges. Within its range in Southern California, rosy boa is absent only from the southeastern corner of California around the Salton Sea and the western and southern portions of Imperial County (Zeiner et al. 1990b). Rosy boa inhabits rocky shrubland and desert habitats, and is attracted to oases and streams, but does not require permanent water (Stebbins 2003).

Although rosy boa was not detected during surveys, this species has high potential to occur within the Boulder Brush Corridor. Within the Boulder Brush Corridor, suitable habitat includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral), sage scrub (montane buckwheat scrub and big sagebrush scrub), and coast live oak woodland.

San Diego Ringneck Snake (*Diadophis punctatus similis*), County Group 2

San Diego ringneck snake is a County Group 2 species. San Diego ringneck snake is found in San Diego County along the coast and into the Peninsular range, and in southwestern Riverside County. This species occupies moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. San Diego ringneck snake is usually found under the cover of rocks, wood, and other surface debris (Nafis 2018).

Although San Diego ringneck snake was not detected during surveys, this species has high potential to occur within the Boulder Brush Corridor. Suitable habitat includes moist chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral), sage scrub (montane buckwheat scrub and big sagebrush scrub), and coast live oak woodland.

Birds

California Horned Lark (*Eremophila alpestris actia*), WL/County Group 2

California horned lark is a WL and County Group 2 species. California horned lark is a permanent resident found throughout much of the southern half of California. This species breeds and resides in the coastal region of California from Sonoma County southeast to the U.S./Mexico border, including most of the San Joaquin Valley, and eastward to the foothills of the Sierra Nevada (Beason 1995; Grinnell and Miller 1944). It is found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above the tree line. This species prefers open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, and fallow grain fields, and it nests on the ground in a hollow scrape.

This species was observed in the open scrub and grassland areas adjacent to the Boulder Brush Corridor in 2018, but its specific location was not mapped.

Merlin (*Falco columbarius*), WL/County Group 2

Merlin is a WL and County Group 2 species. Merlin occurs in San Diego County during October to March, generally. Many birds migrate through the County and some winter, typically more along the coastal lowlands and less towards the desert (Unitt 2004). This winter visitor to San Diego County is not well-documented in southeast San Diego (Unitt 2004). It is often seen in grassland, though it occurs occasionally in any habitat except dense woodland.

One merlin was observed in October 2018 during bird count surveys. Because only one merlin has been observed throughout the bird count and eagle surveys in the fall/winter months (October – December), it likely is not regularly using the site for wintering. However, it could use the site for foraging in the limited grassland or other open habitat types on site.

Barn Owl (*Tyto alba*), County Group 2

Barn owl is a not considered special status by any state or federal agencies; however, it is a County Group 2 species. It is common throughout its range throughout most continents; in the Americas, it occurs in much of continental United States, south through Central and South America, to Tierra del Fuego (Marti et al. 2005). In San Diego County, it is an uncommon permanent resident and occurs in urban settings, roosting in buildings, palm leaves, and nest boxes.

Barn owls do not seem to use specific habitat affinities, provided there are ample sites for nesting opportunities and adequate ground for hunting small mammals (Taylor 1994). Habitat types that

are commonly used include open habitats such as grassland, chaparral, riparian, and other wetland types from sea level to 5,512 feet amsl (Zeiner et al. 1990a).

This species was observed in the oak woodland in the Boulder Brush Corridor in 2018 and 2019, but its specific location was not mapped.

Western Bluebird (*Sialia mexicana*), County Group 2

Western bluebird is a County Group 2 species. It is a common resident bird in San Diego County, where it prefers montane coniferous and oak woodlands (Unitt 2004). It nests in old-growth red fir, mixed conifer, and lodegpole pine habitats near wet meadows used for foraging. Because this species is not considered special status by state or federal agencies, it is not tracked in the California Natural Diversity Database.

Western bluebirds were observed during surveys in the oak woodland adjacent to the Boulder Brush Corridor in 2018 and 2019, but its specific locations were not mapped as it is expected to utilize all oak woodlands.

Mammals

Mule Deer (*Odocoileus hemionus*), County Group 2

Mule deer is a County Group 2 species. It is a common species with a widespread distribution throughout the western United States and Canada, and south into mainland and Baja California, Mexico (Hall 1981). It occurs throughout most of California, except in deserts and intensively farmed areas without cover (Zeiner et al. 1990b). Throughout its range, mule deer uses coniferous and deciduous forests, riparian habitats, desert shrub, coastal scrub, chaparral, and grasslands with shrubs. It is often associated with successional vegetation, especially near agricultural lands (NatureServe 2014). It uses forested cover for protection from the elements and open areas for feeding (Wilson and Ruff 1999). Mule deer fawn in a variety of habitats that have available water and abundant forage, including moderately dense shrubs and forests, dense herbaceous stands, and higher-elevation riparian and mountain shrub vegetation.

Mule deer or their sign were observed during biological surveys in the Boulder Brush Corridor in 2018 and 2019, but the locations were not mapped due to the high mobility of this species. Mule deer were flushed from upland habitats several times during surveys and are likely to use most of the Boulder Brush Corridor.

Cougar (*Puma concolor*), County Group 2

Cougar is a County Group 2 species and is a Specially Protected Mammal under California Fish and Game Code Section 4800. Its range throughout California extends from deserts to humid forests in the Coast Ranges, and from sea level to 10,000 feet amsl. It is most abundant in habitats that support its primary prey, mule deer, and its seasonal movements tend to follow migrating deer herds.

Cougar prefers habitats that provide cover, such as thickets in brush and timber in woodland vegetation (Zeiner et al. 1990b). It also uses caves and other natural cavities for cover and breeding. It requires extensive areas of riparian vegetation and brushy stages of various habitats with interspersions of irregular terrain, rocky outcrops, and tree/brush edges. Although the Boulder Brush Corridor lacks riparian habitats, suitable rocky outcrops, irregular terrain, and good connectivity to large open spaces may serve as suitable habitat for this species.

This species has high potential to occur within the Boulder Brush Corridor, as this species was detected On-Reservation (AECOM 2012). Within the Boulder Brush Corridor, suitable habitat includes chaparral (granitic northern mixed chaparral, granitic chamise chaparral, red shank chaparral, and semi-desert chaparral), sage scrub (montane buckwheat scrub and big sagebrush scrub), southern arroyo willow riparian forest, and coast live oak woodland.

Western Small-Footed Myotis (*Myotis ciliolabrum*), Group 2

Western small-footed myotis is a County Group 2 species. Western small-footed myotis occurs in California in arid uplands, coastal Contra Costa County south to the Mexican border, west and east sites of the Sierra Nevada, and in Great Basin and desert habitats from Modoc to Kern and San Bernardino Counties (Zeiner et al. 1990b). This species occurs in arid wooded and brushy uplands near water and in open stands in forests and woodlands. Western small-footed myotis is considered locally common.

This species was detected during the acoustical bat survey conducted in 2011 and has high potential to roost within oak trees and riparian forest within the Boulder Brush Corridor. Suitable habitat includes oak and riparian woodlands. This is the only bat species that has a high potential to roost within the Boulder Brush Corridor.

4.6.2 Campo Corridor

4.6.2.1 County Group 1 Species and/or Species of Special Concern

County Group 1 species and/or an SSC that have been observed in the Campo Corridor or have high potential to occur are described below and are included in Attachment H-2. Additional species that have moderate potential to occur are described in more detail in Attachment H-2. For species that occur, or have high potential to occur, in both the Boulder Brush Facilities Boulder Brush Corridor and the Campo Corridor, their life history and habitat requirements are not repeated below. Refer to Section 4.6.1 for that information.

Amphibians and Reptiles

San Diegan Tiger Whiptail (*Aspidoscelis tigris stejnegeri*), SSC/County Group 2

San Diegan tiger whiptail was observed several times during surveys in 2018.

San Diego Banded Gecko (*Coleonyx variegatus abbotti*), SSC/County Group 1

This species has high potential to occur within the Campo Corridor. Suitable habitat within the Campo Corridor includes chaparral and sage scrub.

Blainville's Horned Lizard (*Phrynosoma blainvillii*), SSC/County Group 2

Blainville's horned lizard was observed numerous times during Project surveys in 2018.

Coast Patch-Nosed Snake (*Salvadora hexalepis virgultea*), SSC/Group 2

This species has high potential to occur within the Campo Corridor. The Campo Corridor is within the species' range (Nafis 2018). Within the Campo Corridor, suitable habitat includes chaparral and sage scrub.

Western spadefoot (*Spea hammondii*), SSC/County Group 2

Western spadefoot is an SSC and County Group 2 species. It is endemic to California and northern Baja California, Mexico. Spadefoot ranges from the north end of California's Central Valley near Redding, south, west of the Sierras and the deserts, and into northwest Baja California, Mexico (Jennings and Hayes 1994; Stebbins 2003). Although this species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its range, western spadefoot occurs from sea level to 4,000 feet amsl, but mostly at elevations below 3,000 feet amsl (Stebbins 2003).

Western spadefoot is almost completely terrestrial, entering temporary pools and drainages only to breed. The species aestivates in upland habitats near potential breeding sites in burrows approximately 3 feet in depth (Stebbins 1972). The species prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Holland and Goodman 1998; Stebbins 2003). However, the species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman 1998).

This species was recorded on site (AECOM 2012). There are several areas with ponded water where spadefoot could breed within the Campo Corridor: the small freshwater marsh in the northeastern portion of the Campo Corridor and the emergent wetlands in the central portion of the Campo Corridor just west of Church Road where ponded water was observed.

Birds

Cooper's Hawk (*Accipiter cooperii*), WL/County Group 1

Cooper's hawk was observed foraging and nesting on site during 2010 and 2011 surveys (AECOM 2012) and 2017 and 2018 surveys.

Golden Eagle (*Aquila chrysaetos*), BCC/Fully Protected, WL/County Group 1

There are no suitable large trees and cliffs present for nesting; therefore, this species is not expected to nest on site. Unitt (2004) states that "The golden eagle is absent from some surprisingly large yet little disturbed areas of San Diego County, such as Cuyamaca Mountains and the Campo Plateau between Lake Morena and Jacumba." The historical breeding distribution map and general occurrence maps in Unitt (2004) also present a pocket of unoccupied habitat near the Project Area Weekly focused eagle surveys in support of eventual USFWS and CDFW coordination regarding the need for an eagle take permit have been conducted on site in 2017 through 2019. Nine golden eagles were observed flying over the Reservation Boundary during the 2017 through 2019 surveys (Figure 12, Results of Eagle Count Surveys). During the 30-minute point-count surveys, only one juvenile golden eagle was detected on April 11, 2019, for 2 minutes. Single juvenile golden eagles were also detected during the all-day eagle surveys on October 6 and October 8, 2018. Additionally, eight golden eagles were detected between November 2017 and October 2018 on seven occasions for a total of 13 minutes (Table 4-4). In total, as of September 2019, eagles were observed flying over the Reservation Boundary site for approximately 15 of more than 131,600 minutes during the 2017–2019 all-day eagle surveys and avian 30-minute point-count surveys.

Table 4-4
Golden Eagle Detection Data

Survey Type	Date	Number/Age	Minutes of Detection	Distance from Observer (Meters)	Flight Height Range (Meters)
Fall Migration All-Day	11/21/2017	1 adult	1	270	67–152
Fall Migration All-Day	11/21/2017	1 adult	1	900	101–171
Fall Migration All-Day	5/16/2018	1 adult	1	1,300	110–198
Fall Migration All-Day	10/6/2018	1 adult	3	3,000	762–914
Fall Migration All-Day	10/6/2018	1 juvenile	3	150	0–30
Fall Migration All-Day	10/8/2018	1 juvenile	3	—	305–677
Fall Migration All-Day	10/16/2018	2 adults	1	1,600	244–853
30-Minute Point Count	4/11/2019	1 juvenile	2	—	121–213

Table 4-5 shows the level of survey effort applied for 30-minute point-count surveys and fall migration eagle surveys.

Table 4-5
Point Count and Eagle Survey Effort

Survey	Survey Date Range	Total Sites Visited	Survey Length	Total Survey Minutes	Total Survey Hours
30-Minute Point Count	09/08/2017–09/26//2019	1,510	30 minutes	45,300[1]	684.00
Eagle Survey	10/02–12/01/2017 and 10/02–11/28/2018	206.00	Varies	86,316.00	1,438.60

Note:
[1] Includes 82 visits to site A, which overlaps with the Campo Wind Corridor.

Additionally, USGS has been capturing eagles, affixing telemetry transmitters that minimally collect data either 15-minute, 30-second, or 6-second intervals, depending on the equipment and golden eagle behavior, and collecting hundreds of thousands data points since 2014 (Tracy et al. 2016, 2017, 2018). As of February 23, 2016, USGS has 15 eagles with active transmitters (Tracey et al. 2016), and from February 2016 to February 2017 there were 18 eagles with active transmitters (Tracey et al. 2017). This dataset is the most-comprehensive dataset available and includes real-time and continual data on each individual. The Figure 4-4 series depicts the data for each individual that occurred within the 10-mile Project Area over this period; the data for each is summarized below by individual. Tabular data for each data point captured within the 10-mile buffer is provided in the *Campo Wind Project Biological Technical Report* (Appendix H to the Campo EIS).

This detailed data, combined with the extensive surveys and past surveys on site and in the vicinity, results in a comprehensive dataset from which to develop conclusions. Although there are data points of golden eagles within the 10-mile buffer from the Project Area and the data shows golden eagles traveling in a straight line instead of their actual flight path, including a few brief incursions over the Campo Corridor, these are very minor when compared to their overall use areas and geographic range. Therefore, line paths created from the telemetry data are considered to be substantial analysis for the Reservation Boundary. As shown in the figures, Table 4-6, and the discussion below, the Campo Corridor appears to be at the very fringe of their individual territories or use areas, and likely mostly represent brief exploratory searches. Figure 4-4 series shows this information.

Table 4-6
Biotelemetry Data for Golden Eagles within 10 Miles of the Reservation Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity on/near Project Site (10-Mile Buffer)
F004	12/27/2014	Marron Valley	Biotelemetry data show this individual traveling from southeast San Diego County north through the Peninsular Ranges into the San Jacinto and San Bernardino Mountains. There is limited flight activity west to the San Gabriel Mountains and back east.	The data show a flight path through the northern portion of the Reservation Boundary on April 10 and 11, 2015, and through the southern portion of the Reservation Boundary on October 22, 2015 (Figure 4-4a, USGS Golden Eagle Bird F004 – 2015). Within the 10-mile buffer, the data show a couple of points northwest of the Reservation Boundary in January 2016 (Figure 4-4b, USGS Golden Eagle Bird F004 – 2016).
F006	2/2/2015	Santa Ysabel	Biotelemetry data show this individual travelling from Baja California north into Otay, Ramona, and Anza Borrego, and through Palm Desert and Cathedral City.	Within the 10-mile buffer, the data show points west and southwest from May 2015 and a few points north of the Reservation Boundary in June 2015 (Figure 4-4c, USGS Golden Eagle Bird F006 – 2015).

Table 4-6
Biotelemetry Data for Golden Eagles within 10 Miles of the Reservation Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity on/near Project Site (10-Mile Buffer)
F007	2/23/2015	Long Potrero	Biotelemetry data show this individual concentrated in two areas: east of Tecate, Mexico, and around Barrett Lake. Flight paths also show travel to the surrounding areas as far north as Julian and farther south of Tecate, Mexico.	Within the 10-mile buffer, the data show a flight pattern from December 23, 2015. There are several points within the southwest portion of the Reservation Boundary from November 2015. There are points from March, April, November, and December 2015 west and southwest of the Reservation Boundary and along the western side of the buffer (Figure 4-4d, USGS Golden Eagle Bird F007 – 2015). Data from 2016 show flight paths through the western portion of the Reservation Boundary on April 2, 2016; July 15, 2016; August 10, 12, and 13, 2016; September 22 and 30, 2016; October 15, 2016; and November 8, 2016. There are also numerous point data within the western half of the buffer in 2016 (Figure 4-4e, USGS Golden Eagle Bird F007 – 2016). In 2017, data show points from January and February within the southwest portion of the buffer (Figure 4-4f, USGS Golden Eagle Bird F007 – 2017).
F008	3/14/2015	Pamo Valley	Biotelemetry data show this individual primarily concentrated around the Ramona and Santa Ysabel areas and east of Cuyamaca Reservoir in the Cleveland National Forest.	Within the 10-mile buffer, the data show points from May, June, and July 2015 west of the Reservation Boundary (Figure 4-4g, USGS Golden Eagle Bird F008 – 2015).
F013	2/11/2016	Gregory Mountain	Biotelemetry data show this individual traveling around the Gomez Trail and Agua Tibia Creek areas on the Pauma and Pala Reservations.	Within the 10-mile buffer, the data show a north–south flight path through the middle of the Reservation Boundary; and there are several points from November 2016 southwest and northwest along the western side of the buffer of the Reservation Boundary (Figure 4-4h, USGS Golden Eagle Bird F013 – 2016).
F014	2/12/2016	Fremont Canyon	Biotelemetry data show this individual traveling throughout Southern California including Baja California, the San Joaquin Valley and from California to Wyoming and back.	The data show a flight path through the central portion of the Reservation Boundary on March 8, 2016. The transmitter recorded the eagle flying through the Reservation Boundary between 11:41 a.m. and 11:56 a.m. and the individual continued flying in a southwest direction. There are also several points from March 2016 along the eastern side of the buffer (Figure 4-4i, USGS Golden Eagle Bird F014 – 2016).

Table 4-6
Biotelemetry Data for Golden Eagles within 10 Miles of the Reservation Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity on/near Project Site (10-Mile Buffer)
F016	3/5/2016	Barrett Lake	Biotelemetry data shows this individual concentrated around Barrett Lake and flight paths in the Cleveland National Forest area as well as into Mexico.	Within the 10-mile buffer, the data show a couple of points from June and Augustpoints from March, April, and June-–November 2016 west of the Reservation Boundary in Mexico (Figure 4-4j, USGS Golden Eagle Bird F016 – 2016). There are a couple of points from January 2017 west of the Project Area (Figure 4-4k, USGS Golden Eagle Bird F016 – 2017).
M002	1/8/2015	Marron Valley	Biotelemetry data show this individual primarily concentrated around the San Ysidro Mountains and in the mountains south of the Tijuana area.	Within the 10-miile buffer, the data show just two points from February 2015 along the very western edge of the buffer (Figure 4-4l, USGS Golden Eagle Bird M002 – 2015).
M005	12/1/2015	Barrett Lake	Biotelemetry data show this individual concentrated in the hills just south of Barrett Lake with some flight paths north toward Pothole Canyon and northwest toward the San Diego Country Estates.	Within the 10-mile buffer, the data show a flight path from October 1, 2015, through the very southern portion of the Reservation Boundary and into Mexico. There are also points from March, April, June, August, and September 2015 along the western portion of the buffer (Figure 4-4m, USGS Golden Eagle Bird M005 – 2015). Data from 2016 show points along the western portion of the buffer from February, April, July, and September–November (Figure 4-4n, USGS Golden Eagle Bird M005 – 2016). Within the 10-miile buffer, the data show just three points from February 2017 along the very western edge of the buffer (Figure 4-4o, USGS Golden Eagle Bird M005 – 2017).
M007	12/9/2015	Long Valley	Biotelemetry data show this individual concentrated around the La Jolla Reservation with flights south toward Campo and into Ensenada, Mexico.	Within the 10-mile buffer, the data show points from December 2015 along the western half of the buffer (Figure 4-4p, USGS Golden Eagle Bird M007 – 2015). In 2016, there are flight paths through the Reservation Boundary on January 14, 2016; January 17, 2016; May 13, 2016; May 23, 2016; June 19 and 29, 2016; July 28, 2016; August 1 and 24, 2016; September 9 and 11, 2016; and October 2, 2016. There are also point data within the buffer throughout most of the 2016 (Figure 4-4q, USGS Golden Eagle Bird M007 – 2016).

Table 4-6
Biotelemetry Data for Golden Eagles within 10 Miles of the Reservation Boundary

Eagle ID	Date Captured	Capture Location	Primary Use Areas (Tracey et al. 2016, 2017)	Activity on/near Project Site (10-Mile Buffer)
M010	12/17/2015	Proctor Valley	Biotelemetry data show this individual concentrated east and south of Tijuana, Mexico with flight paths east of Tecate, Mexico, and the Jamul Mountains.	Within the 10-mile buffer, the data show a flight path from February 17, 2016; there are points from February and March 2016 south of the Reservation Boundary and into Mexico (Figure 4-4r, USGS Golden Eagle Bird M010 – 2016).
M011	12/21/2015	Barrett Lake	Biotelemetry data show this individual concentrated the Presa El Carrizo Lake southwest of Tecate, Mexico, with additional concentrated flights around the Otay Lakes, Barrett Lake.	There are no points from 2015 within the 10-mile buffer, but data show points west of the buffer (Figure 4-4s, USGS Golden Eagle Bird M011 – 2015). The 2016 data shows a flight path on January 25, 2016, in the western and southern portion of the Reservation Boundary; there are also points from January–March 2016 in the Reservation and western portion of the buffer and from July 2016 north of the Reservation Boundary (Figure 4-4t, USGS Golden Eagle Bird M011 – 2016).

Bell's Sage Sparrow (*Artemisiospiza belli belli*), BCC/WL/County Group 1

This species has high potential to occur within the Campo Corridor. Within the Campo Corridor, suitable habitat includes chaparral and sage scrub.

Long-eared owl (*Asio otus*), SSC/County Group 1

Long-eared owl is an SSC and County Group 1 species. It is an uncommon year-round resident throughout most of the state, with the exception of the Central Valley and Southern California desert regions, where is it generally a winter visitor (Zeiner et al. 1990a). Along the coastline of Southern California, long-eared owl may be a resident breeder (Bloom 1994; Marks et al. 1994) or a rare winter visitor (Garrett and Dunn 1981).

Long-eared owl primarily uses riparian habitat for roosting and nesting, but can also use live oak thickets and other dense stands of trees (Zeiner et al. 1990a). It appears to be more associated with forest edge habitat than with open habitat or forest habitat (Holt 1997). The species usually does not hunt in the woodlands where it nests, but in open areas such as fields, rangelands, and clearings. At higher elevations, the species is found in conifer stands that are usually adjacent to more open grasslands and shrublands (Marks et al. 1994). In California, long-eared owl also nests in dense or brushy vegetation amid open habitat (Bloom 1994).

Long-eared owl has also been known to nest in caves, cracks in rock canyons, and in artificial wicker basket nests (Garner and Milne 1998; Marks et al. 1994).

This species was documented nesting on site in 2011 (AECOM 2012). There is potential for this species to nest or winter in the oak woodland habitat on site.

Red-Shouldered Hawk (*Buteo lineatus*), County Group 1

Red-shouldered hawks were observed nesting on site (AECOM 2012) and observed during the 2017, 2018 and 2019 surveys.

Turkey Vulture (*Cathartes aura*), County Group 1

Turkey vultures were observed foraging throughout the Campo Corridor during biological surveys in 2017 and 2018, but the observations were not mapped. Turkey vulture was documented nesting on the Reservation (AECOM 2012).

Northern Harrier (*Circus hudsonius*), SSC/County Group 1

Northern harrier was observed in 2018 within the Campo Corridor. Although there is some potential nesting habitat in the meadow habitat on site, this species has not been documented nesting in the region (Unitt 2004).

Prairie Falcon (*Falco mexicanus*), BCC/WL, County Group 1

Prairie falcon is a USFWS BCC, WL, and County Group 1 species. The prairie falcon is a permanent resident found throughout most of California. It prefers chaparral, desert grasslands, and creosote bush habitats for foraging, and nests on cliffs or bluffs near these open habitats.

High potential to nest on site in the grassland and some of the emergent wetlands as well as forage on site in the grassland and open scrub habitats. This species has been observed on site during 2010 and 2011 surveys (AECOM 2012) and 2018 surveys.

Loggerhead Shrike (*Lanius ludovicianus*), BCC/SSC/County Group 1

Loggerhead shrike was observed on site in 2017 and 2018, and likely nests within the Campo Corridor.

Yellow Warbler (*Setophaga petechia*), BCC/SSC/County Group 2

Yellow warbler was observed on the Reservation (AECOM 2012) and could nest in the riparian habitat on site.

Mammals

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*), SSC/County Group 2

This species was regularly observed throughout the Campo Corridor in 2018.

San Diego Desert Woodrat (*Neotoma lepida intermedia*), SSC/County Group 2

Woodrat middens were observed during biological surveys. There is suitable desert scrub, chaparral, and rocky areas present onsite.

Invertebrates

Peninsular Metalmark (*Apodemia virgulti peninsularis*), County Group 1

Peninsular metalmark was potentially observed within the Campo Corridor. Behr's metalmark (*Apodemia virgulti*), which is very similar in appearance to Peninsular metalmark, was observed frequently in the Campo Corridor. The host plant occurs within the Campo Corridor and therefore, this species could have been observed during the wildlife surveys.

Quino Checkerspot Butterfly (*Euphydryas editha quino*), FE, County Group 1

Quino checkerspot butterfly was listed as endangered on January 16, 1997 (62 FR 2313–2322). A recovery plan was published for the species on September 17, 2003 (USFWS 2003). Critical habitat was first designated on April 15, 2008 (67 FR 18356–18395), later revised on June 17, 2009 (74 FR 28776–28862). In accordance with FESA Section 4(b)(2); EO 13175, Consultation and Coordination with Indian Tribal Governments; and Secretarial Order 3206, USFWS has excluded the Reservation from critical habitat designation for Quino checkerspot butterfly. Critical habitat designated for Quino checkerspot butterfly borders the Reservation to the west and south (Figure 2-1).

This species is found only in western Riverside County, southern San Diego County, and northern Baja California, Mexico (USFWS 2003). This species is found on sparsely vegetated hilltops, on ridgelines, and occasionally on rocky outcrops in open chaparral and coastal sage scrub habitat (typically at less than 3,000 feet above mean sea level). This species requires host plants within these

vegetation communities for feeding and reproduction. The primary larval host plant is dotseed plantain; however, several other species have been documented as important larval host plants, including desert plantain, sometimes called woolly plantain (*Plantago patagonica*); thread-leaved bird's beak (*Cordylanthus rigidus*); white snapdragon (*Antirrhinum coulterianum*); owl's clover (*Castilleja exserta*); and Chinese houses (*Collinsia* spp.) (USFWS 2003).

Twenty-seven Quino observations were documented during 2010 USFWS protocol surveys (Attachment A-2). Observations were concentrated in the southern portion of the 2010 AECOM BSA (Figure 4-5) (AECOM 2012). In 2018, updated surveys were conducted for the Campo Corridor. No occurrences of Quino were recorded during the focused surveys.

Quino Checkerspot Butterfly Modeled Habitat

Quino checkerspot butterfly populations vary yearly based on a variety of factors, including rainfall, temperature, timing of rain events, and host plant growth patterns, among others. Low rainfall and other factors can cause larva to extend diapause and delay emergence. Lack of adult Quino checkerspot butterfly observations in one year may not be considered adequate evidence that a site is unoccupied. Therefore, potentially occupied habitat was modeled based on Quino checkerspot butterfly records and host plants observed in 2010. The habitat model is created from the following parameters based on general industry guidance from USFWS for other projects:

- 200-meter buffer around Quino checkerspot butterfly locations
- 200-meter buffer around "significant" plant populations (i.e., >20 individuals)
- Hilltops
- Ridgelines (centerline with 100-foot (31.2-meter) buffer

Plant population buffers, hilltops, and ridgelines were added to the primary Quino checkerspot butterfly detection polygon or each other as they would connect. If the link was broken by distance or unsuitable habitat, then the potentially occupied patch would end.

The 2010 and 2018 Quino checkerspot butterfly exclusion areas were removed from the model since those areas were determined to be unsuitable for this species. This model resulted in approximately 674.1 acres of potentially occupied habitat mapped within the Campo Corridor, a portion of which was considered occupied based on the 2010 Quino checkerspot butterfly observations. Figure 4-6 shows the model and estimated occupied habitat.

4.6.2.2 County Group 2 Species

County Group 2 species that have been observed or have high potential to occur in the Campo Corridor are described below and included in Attachment H-2. Additional species that have moderate potential to occur are described in more detail in Attachment H-2. For species that occur or have high potential to occur in both the Boulder Brush Corridor and the Campo Corridor, their life history and habitat requirements are not repeated below. Refer to Section 4.6.1 for that information.

Reptiles

Coronado Skink (*Plestiodon skiltonianus interparietalis*), WL/County Group 2

Although Coronado skink was not detected during surveys, this species has high potential to occur within the Campo Corridor. Suitable habitat in the Campo Corridor includes chaparral and coast live oak woodland.

San Diego Ringneck Snake (*Diadophis punctatus similis*), County Group 2

This species has high potential to occur within the Campo Corridor. Suitable habitat includes moist chaparral, sage scrub, and coast live oak woodland.

Rosy Boa (*Lichanura trivirgata*), County Group 2

This species has high potential to occur within the Campo Corridor. Suitable habitat includes chaparral, sage scrub, and coast live oak woodland.

Birds

California Horned Lark (*Eremophila alpestris actia*), WL/County Group 2

This species was observed in the open scrub and grassland areas in the Campo Corridor in 2018, but its specific locations were not mapped.

Merlin (*Falco columbarius*), WL/County Group 2

Merlin was observed on site during 2010 and 2011 surveys (AECOM 2012), as well as in October and November 2018 in the central portion of the Campo Corridor. It may use the Campo Corridor occasionally for foraging in the limited grassland or other open habitat types.

Barn Owl (*Tyto alba*), County Group 2

This species was observed nesting within the Campo Corridor (AECOM 2012) and observed during 2017/2018 surveys, but its specific location was not mapped.

Western Bluebird (*Sialia mexicana*), County Group 2

Western bluebirds were observed within the Campo Corridor, but its specific locations were not mapped. The species is anticipated to utilize all oak woodlands.

Mammals

Mule Deer (*Odocoileus hemionus*), County Group 2

Mule deer or their sign were observed within the Campo Corridor in 2018, but the locations were not mapped due to the high mobility of this species. Mule deer were flushed from upland habitats several times during surveys and are likely to use most of the Campo Corridor.

Cougar (*Puma concolor*), County Group 2

This species was recorded within the Campo Corridor (AECOM 2012), but its specific location was not mapped.

Western Small-Footed Myotis (*Myotis ciliolabrum*), Group 2

This species has high potential to roost within the Campo Corridor. Suitable habitat includes oak and riparian woodlands.

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3a

USGS Golden Eagle Bird F004 - 2015 - Boulder Brush Boundary

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

FIGURE 4-3b

USGS Golden Eagle Bird F006 - 2015 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3c

USGS Golden Eagle Bird F007 - 2015 - Boulder Brush Boundary

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

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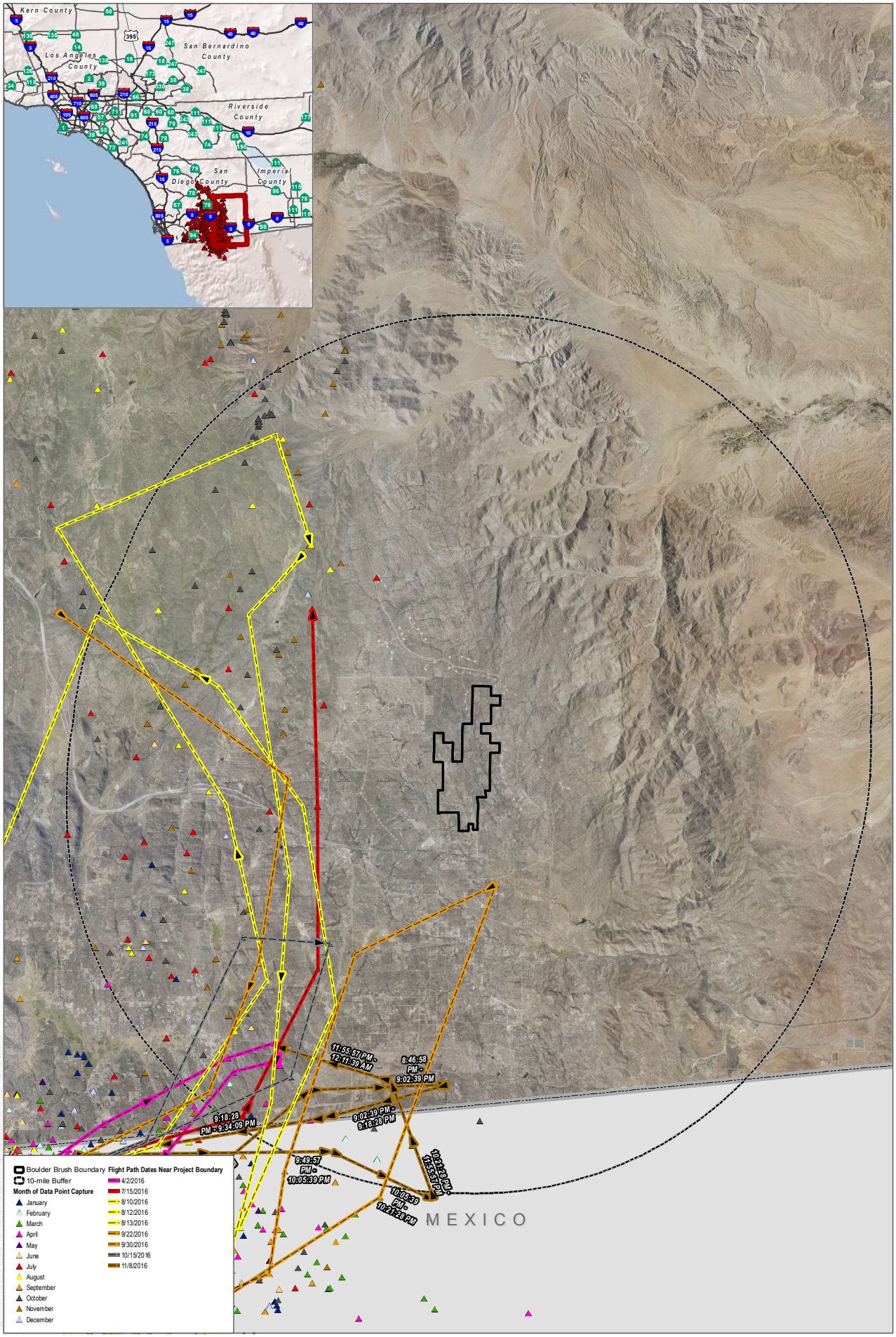

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

FIGURE 4-3d

USGS Golden Eagle Bird F007 - 2016 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3e

USGS Golden Eagle Bird F013 - 2016 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3f

USGS Golden Eagle Bird F014 - 2016 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3g

USGS Golden Eagle Bird F016 - 2016 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3h

USGS Golden Eagle Bird M005 - 2015 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3i

USGS Golden Eagle Bird M007 - 2015 - Boulder Brush Boundary

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

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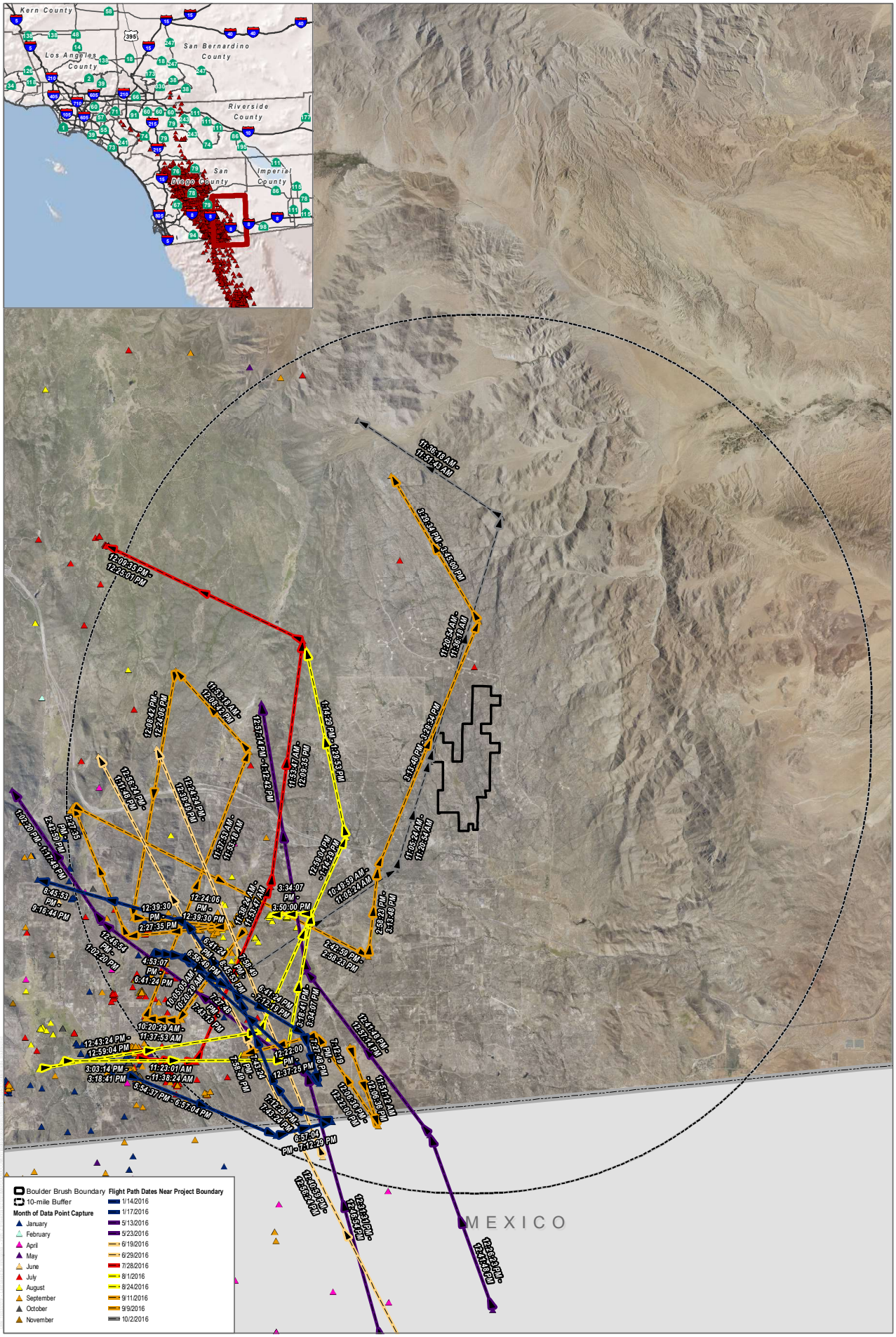

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3j

USGS Golden Eagle Bird M007 - 2016 - Boulder Brush Boundary

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

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SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3k

USGS Golden Eagle Bird M010 - 2016 - Boulder Brush Boundary

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

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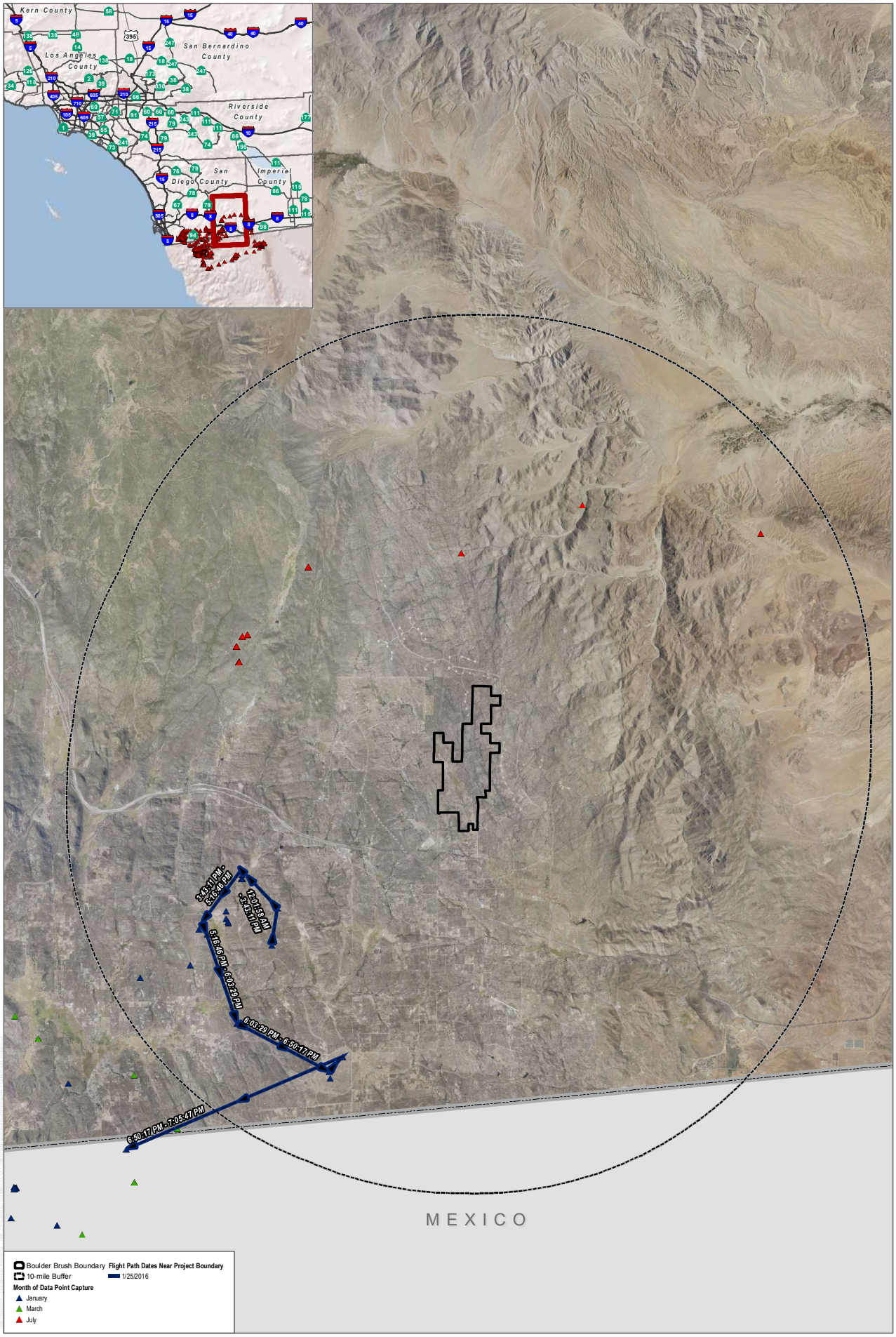

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.25 2.5 Miles

FIGURE 4-3I

USGS Golden Eagle Bird M011 - 2016 - Boulder Brush Boundary

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

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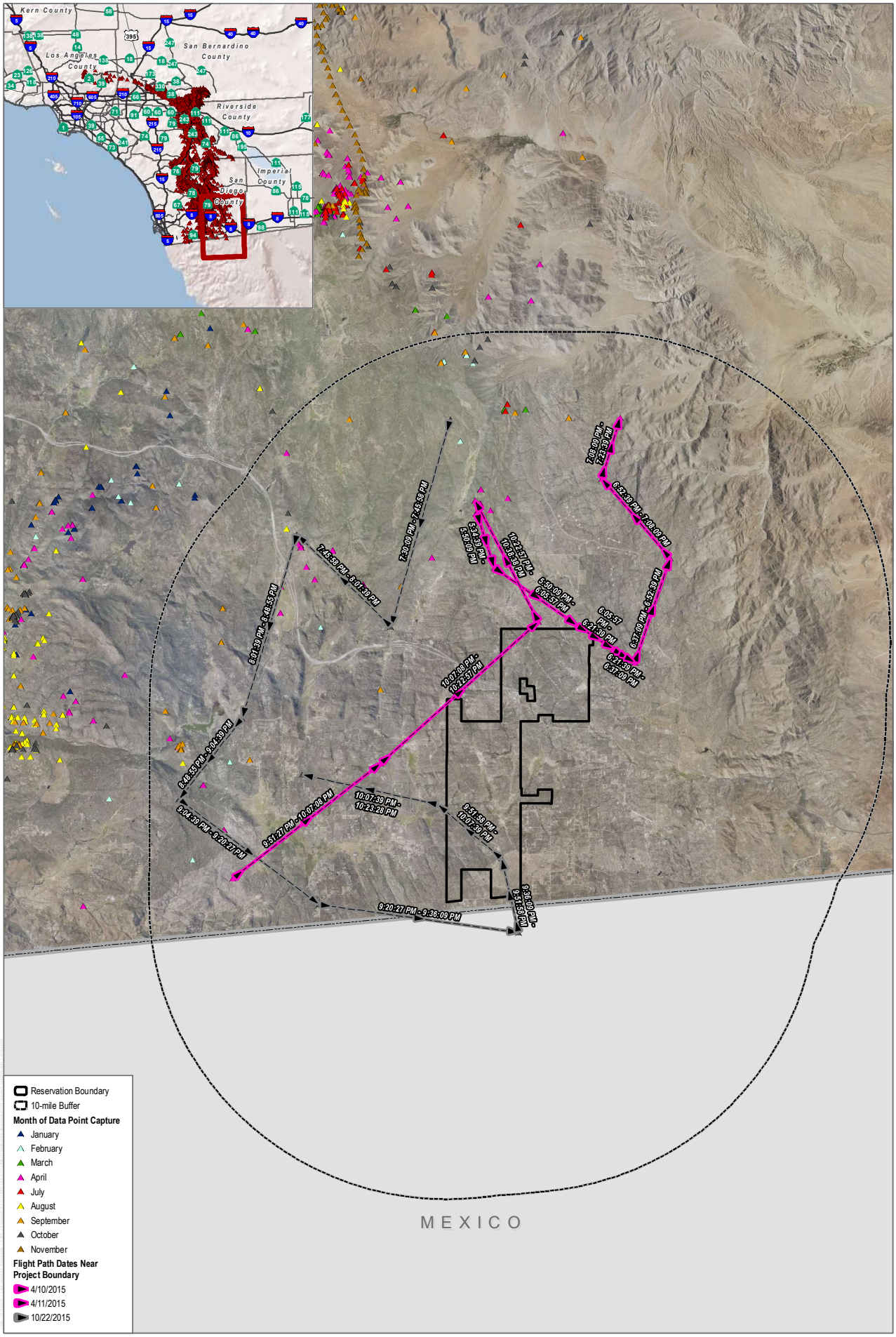

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4a

USGS Golden Eagle Bird F004 - 2015 - Reservation Boundary

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

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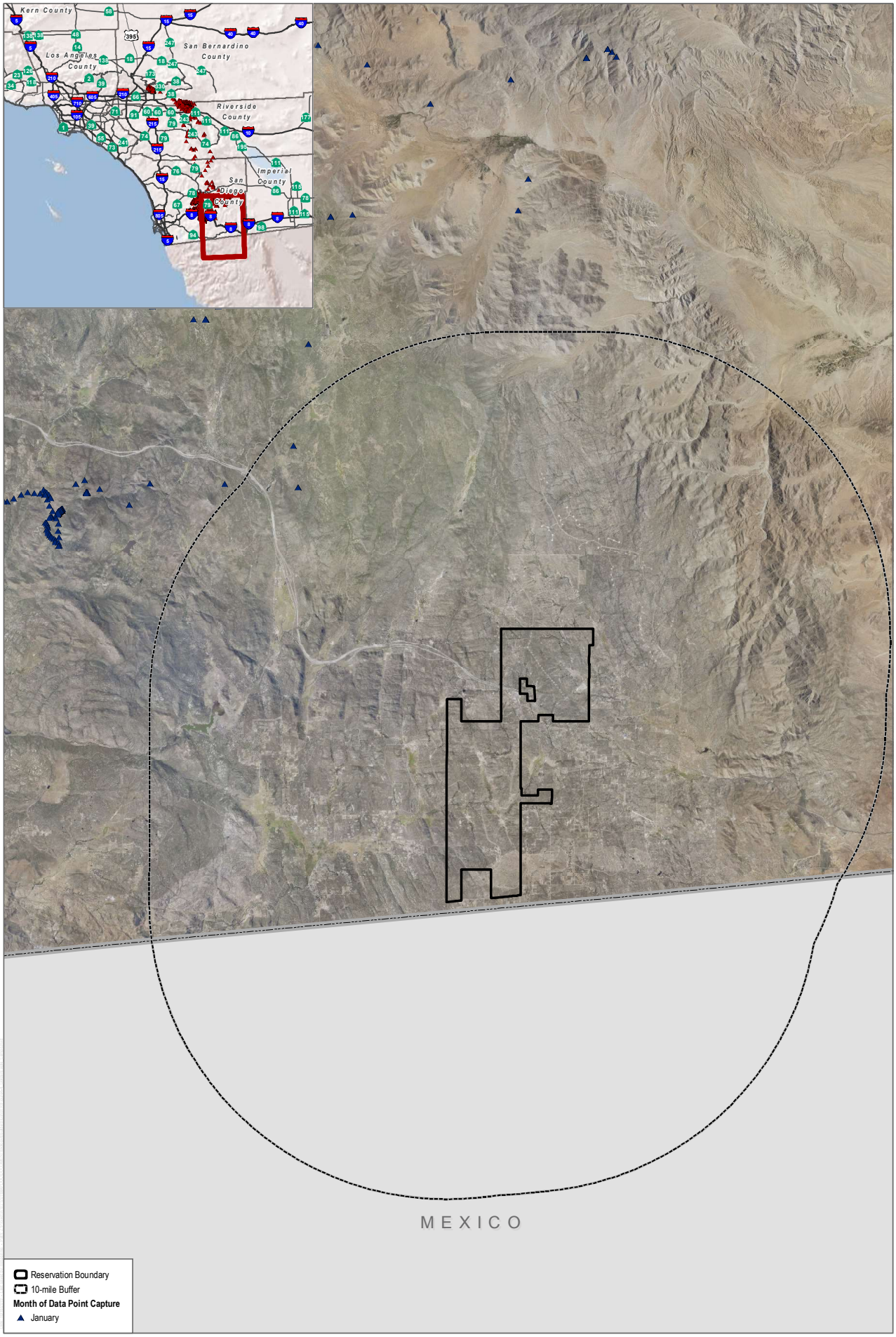

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4b

USGS Golden Eagle Bird F004 - 2016 - Reservation Boundary

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

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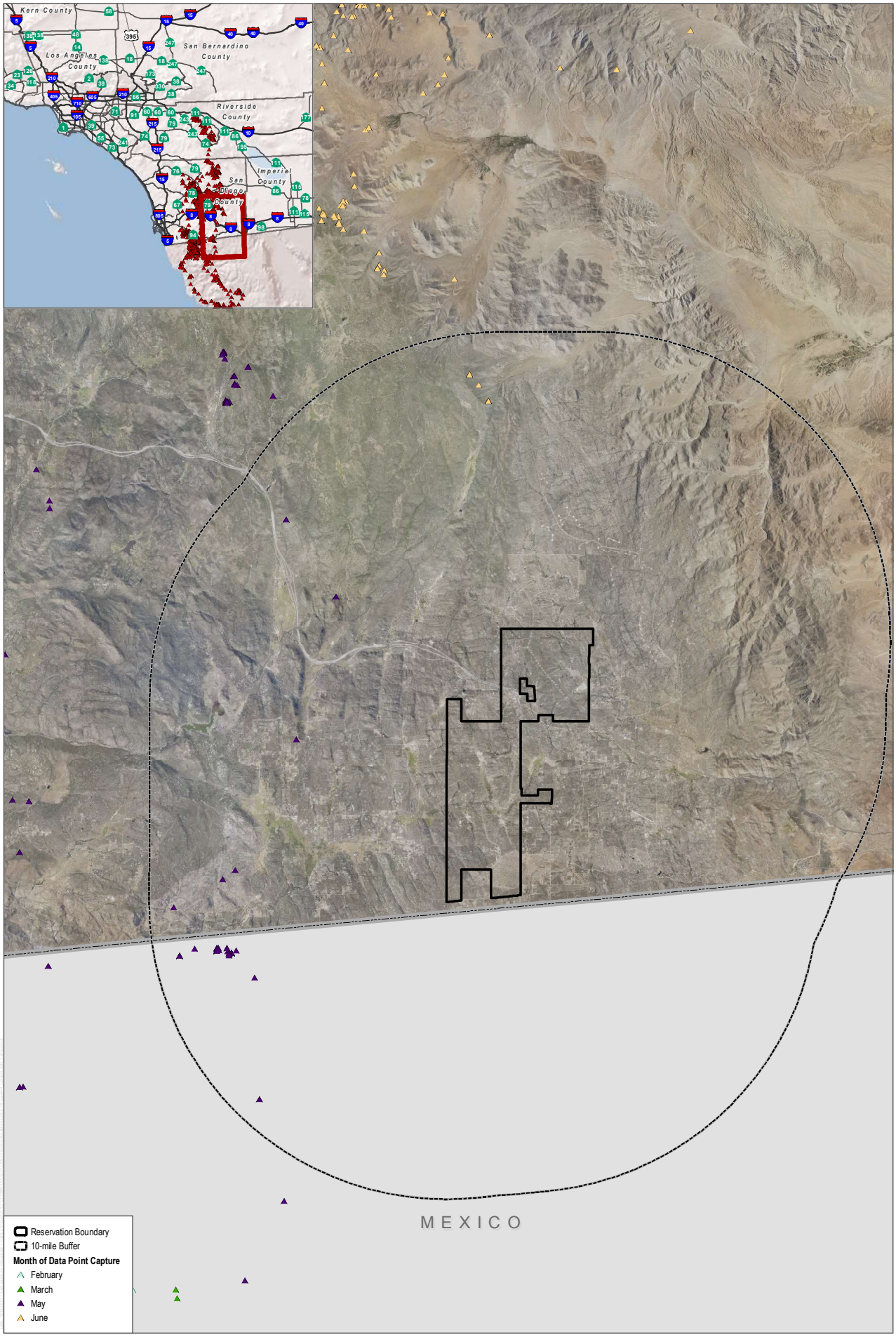

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4c

USGS Golden Eagle Bird F006 - 2015 - Reservation Boundary

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

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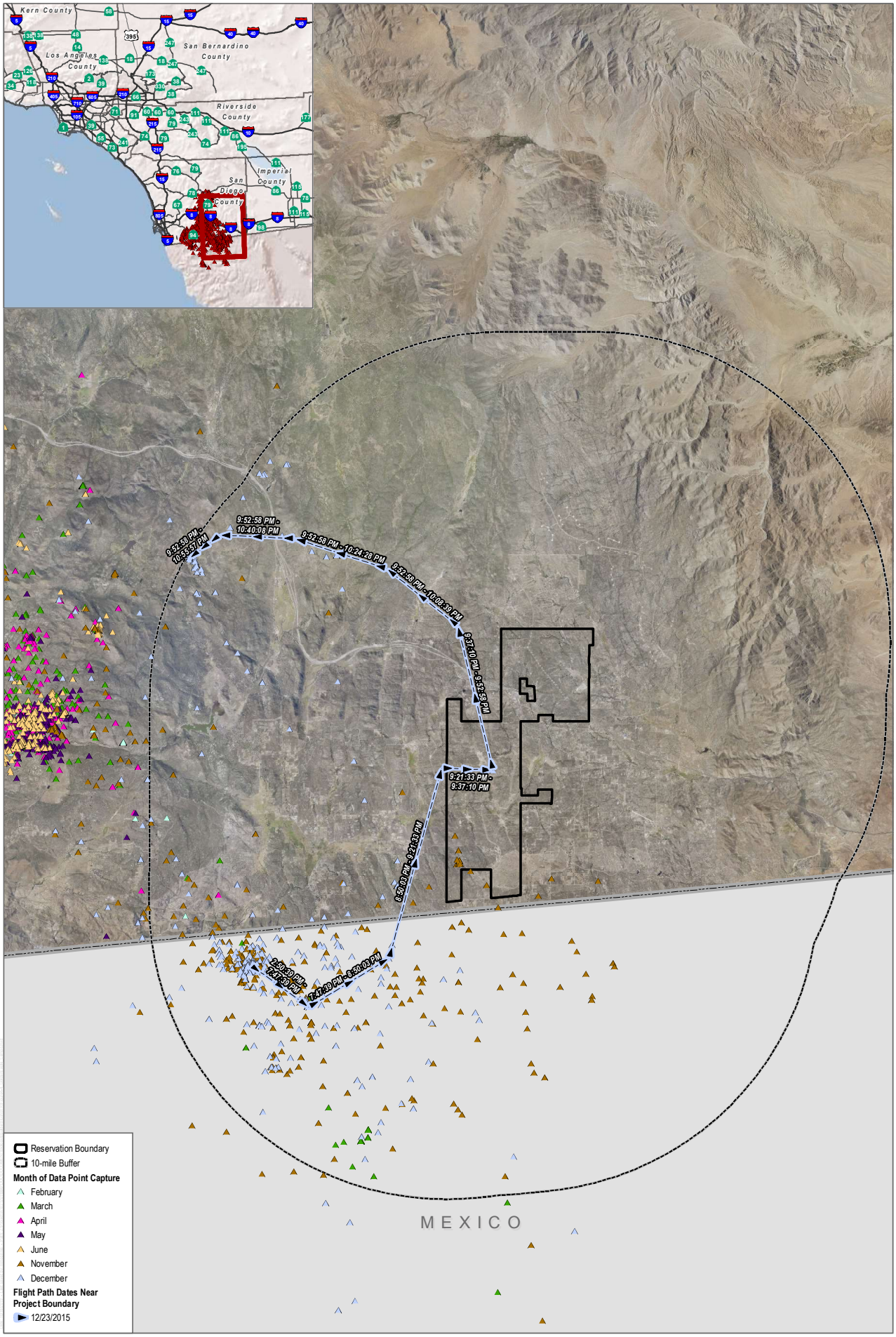

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4d

USGS Golden Eagle Bird F007 - 2015 - Reservation Boundary

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

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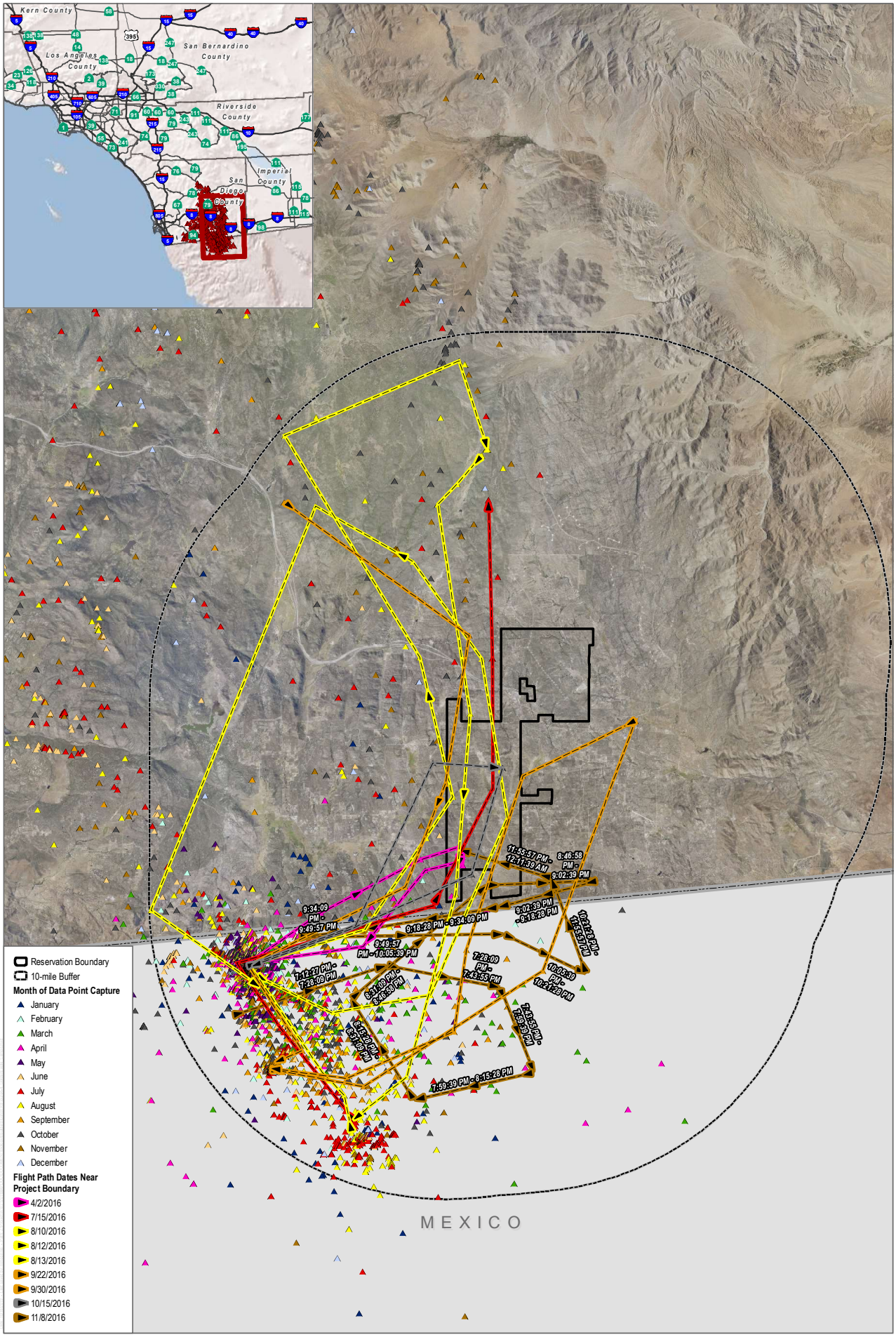

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4e

USGS Golden Eagle Bird F007 - 2016 - Reservation Boundary

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

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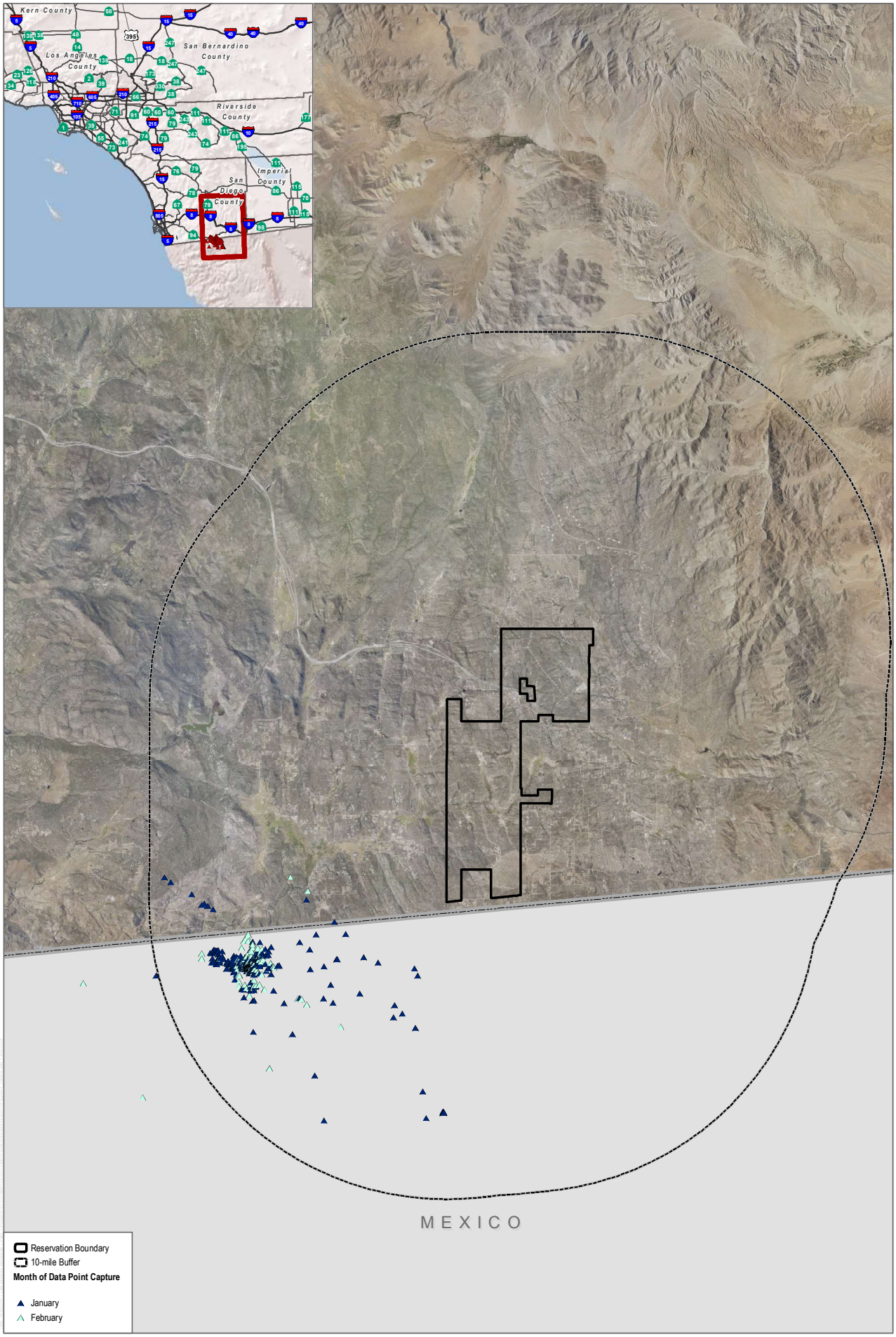

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4f

USGS Golden Eagle Bird F007 - 2017 - Reservation Boundary

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

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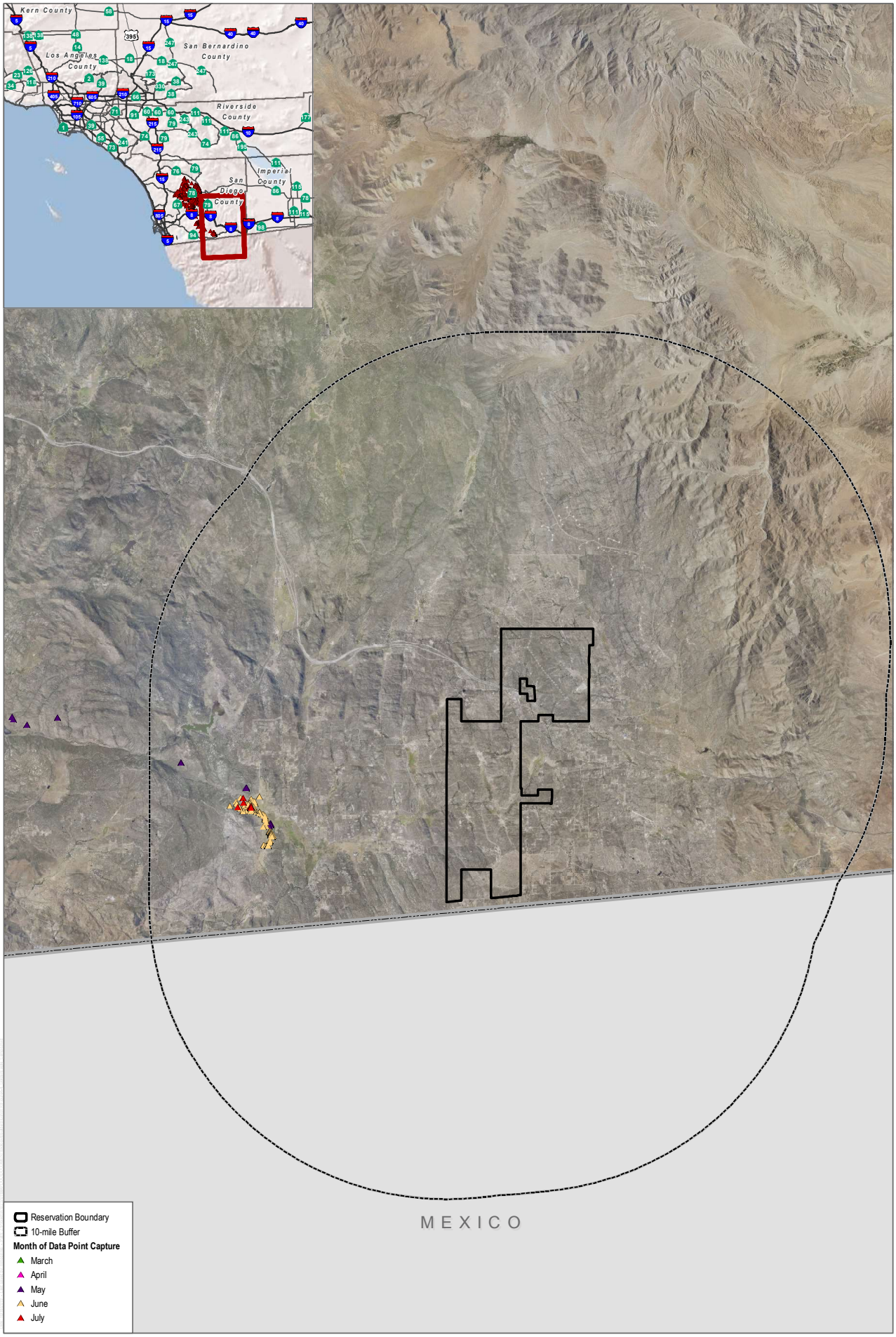

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4g

USGS Golden Eagle Bird F008 - 2015 - Reservation Boundary

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

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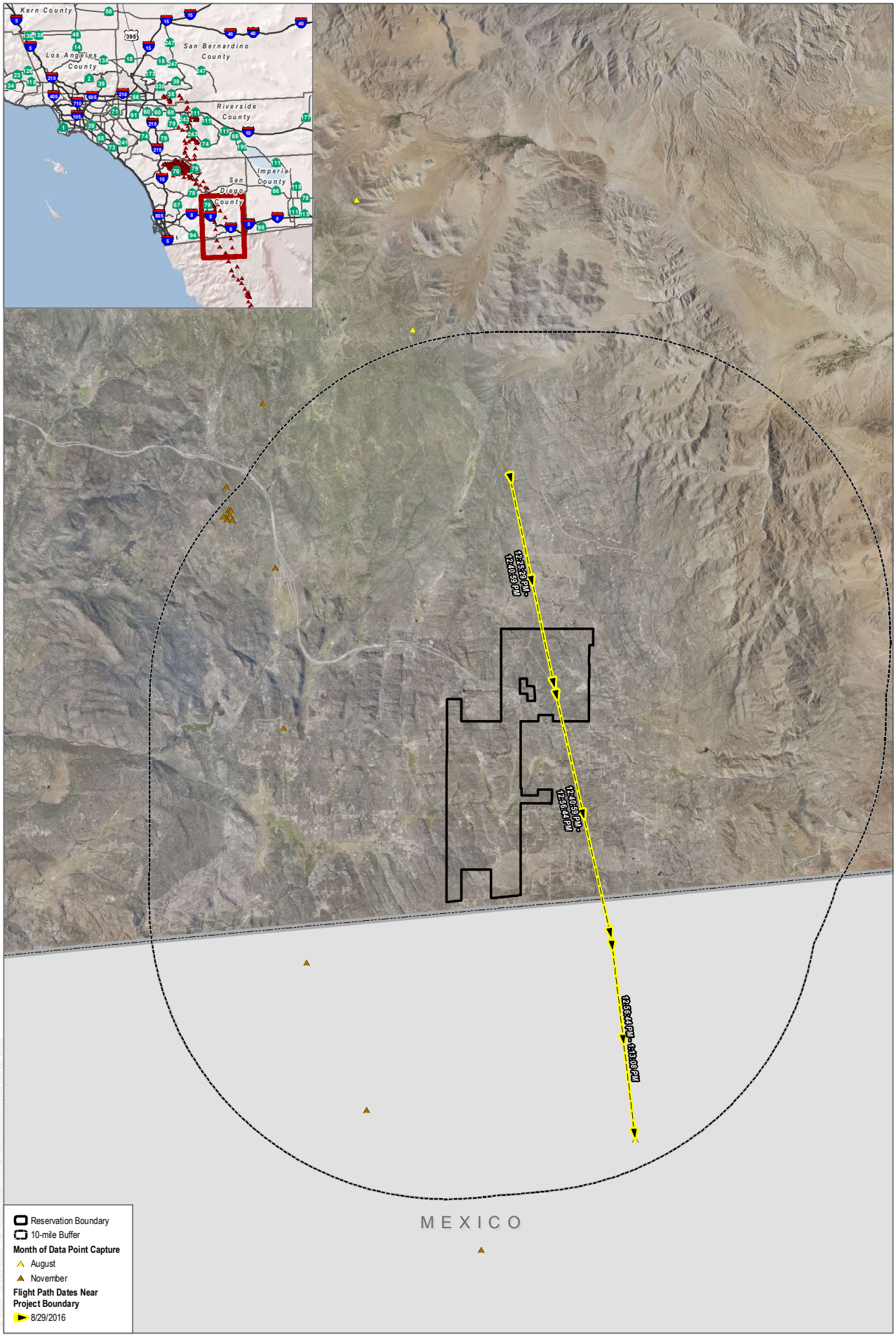

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4h

USGS Golden Eagle Bird F013 - 2016 - Reservation Boundary

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

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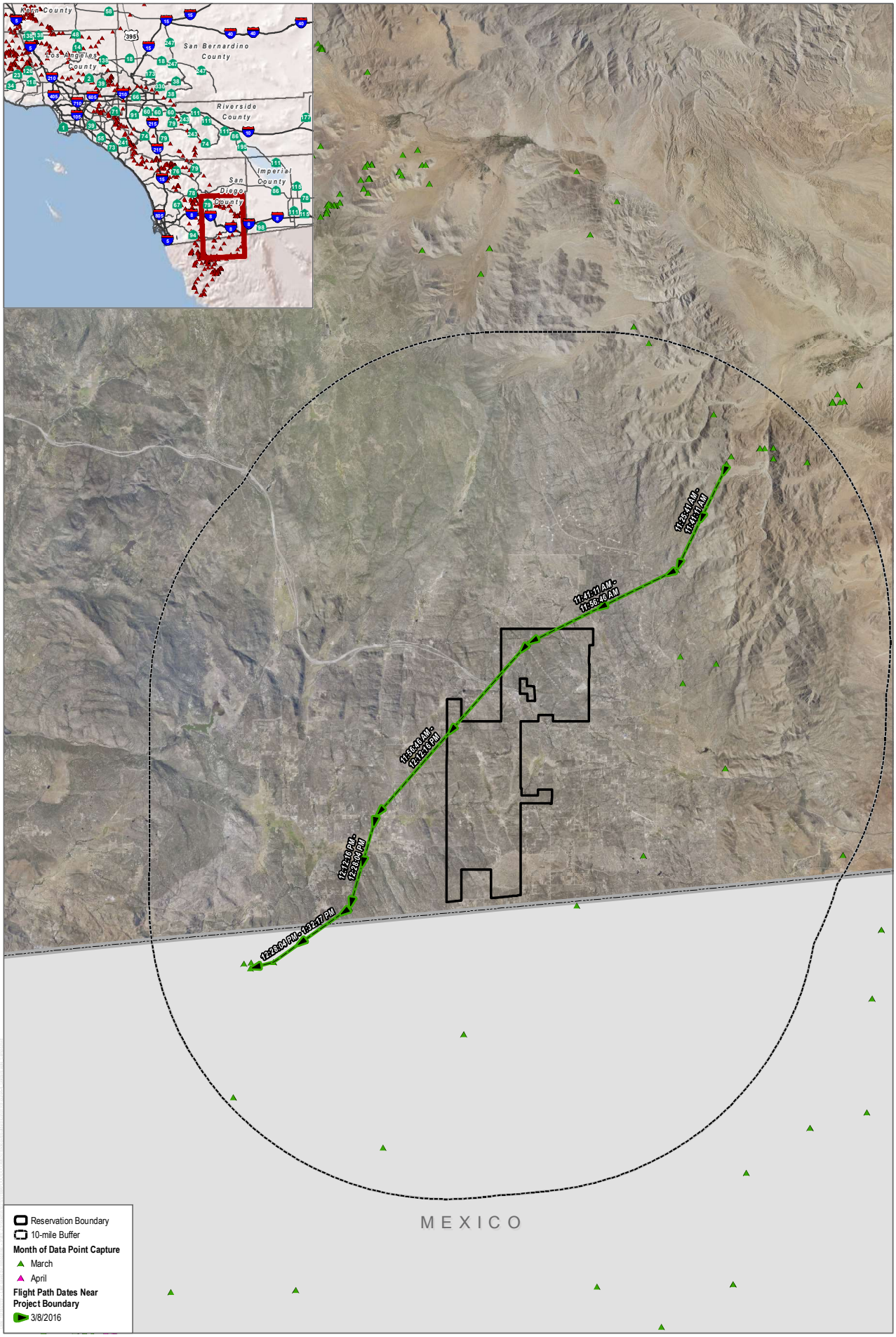

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4i

USGS Golden Eagle Bird F014 - 2016 - Reservation Boundary

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

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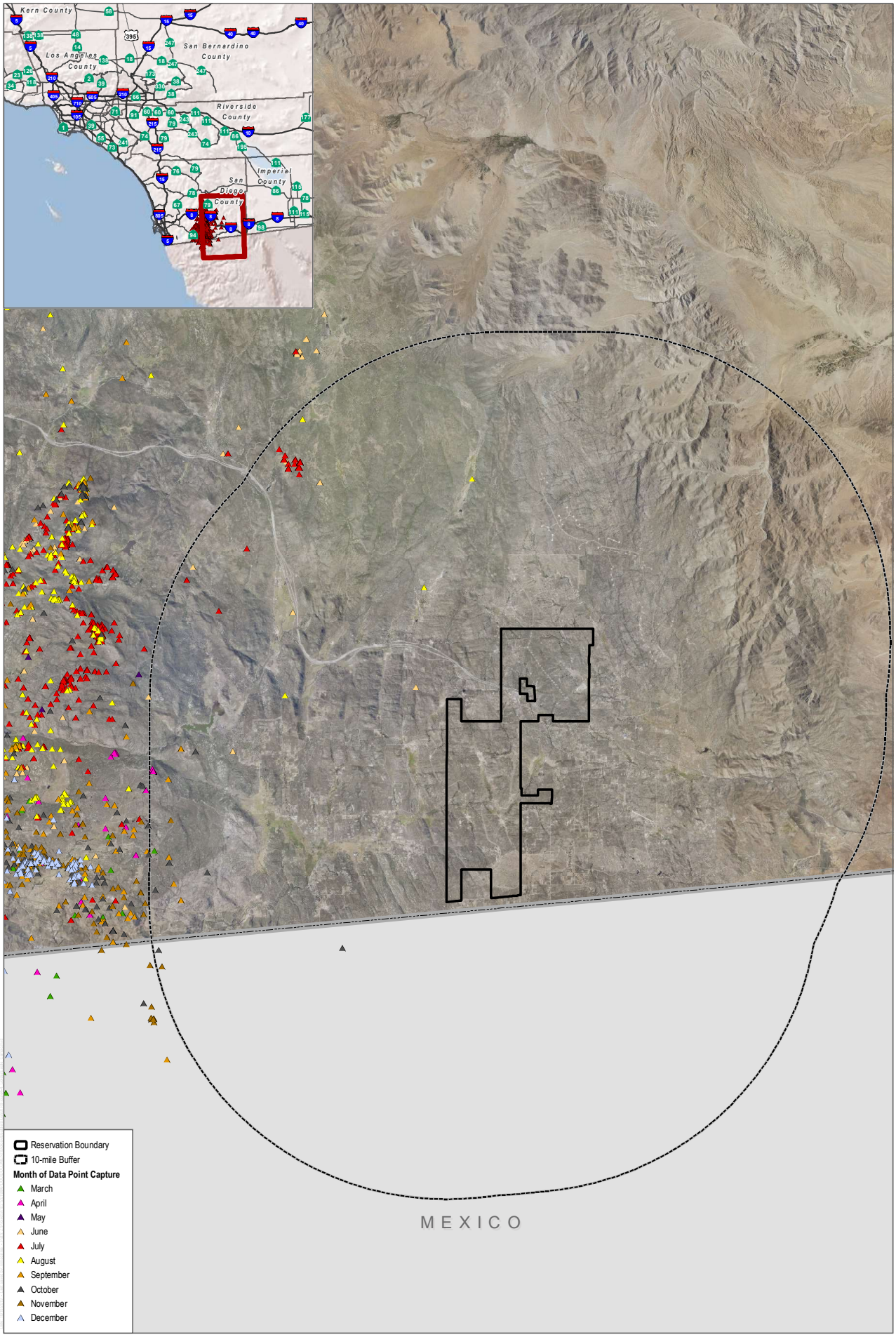

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4j

USGS Golden Eagle Bird F016 - 2016 - Reservation Boundary

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

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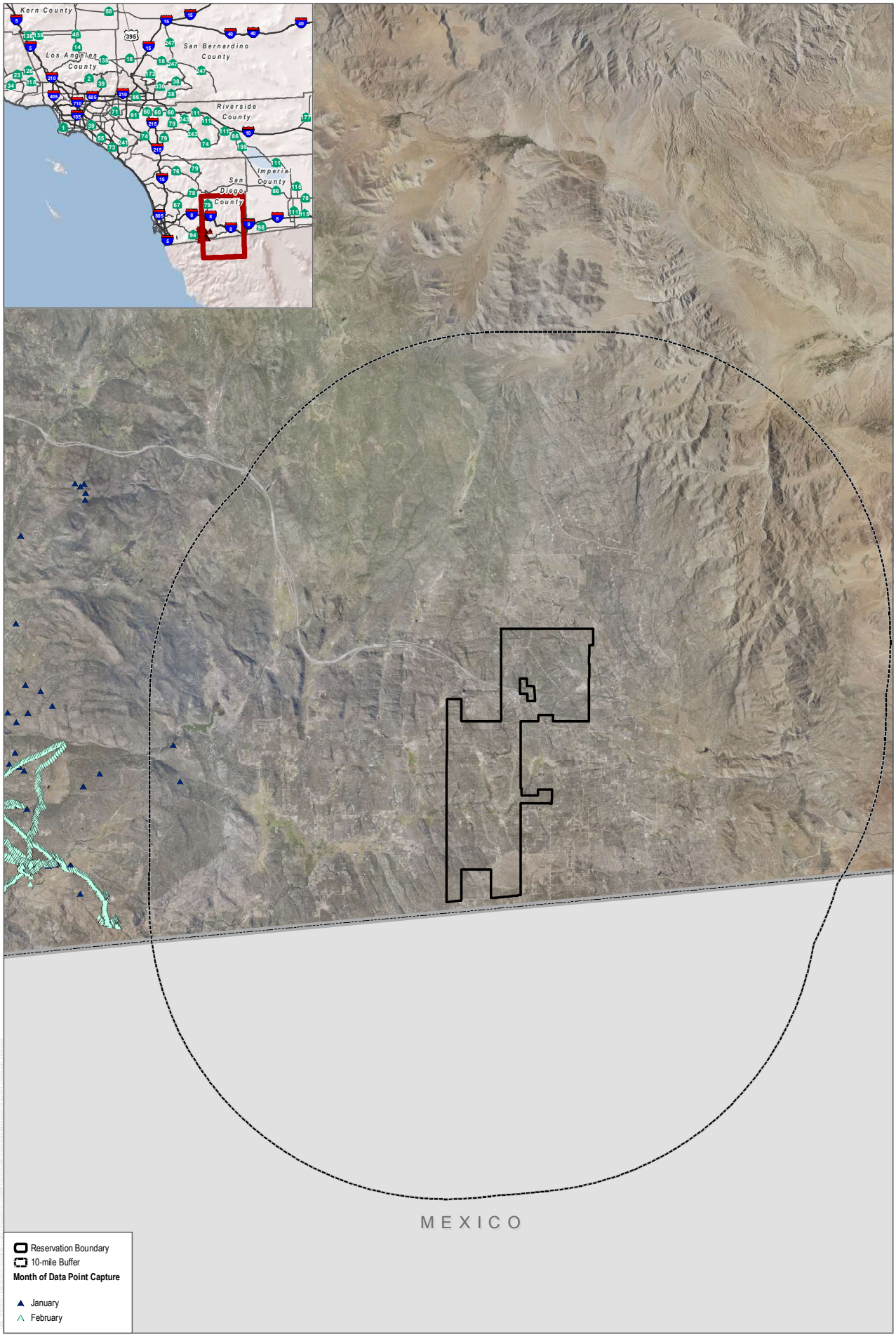

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4k

USGS Golden Eagle Bird F016 - 2017 - Reservation Boundary

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

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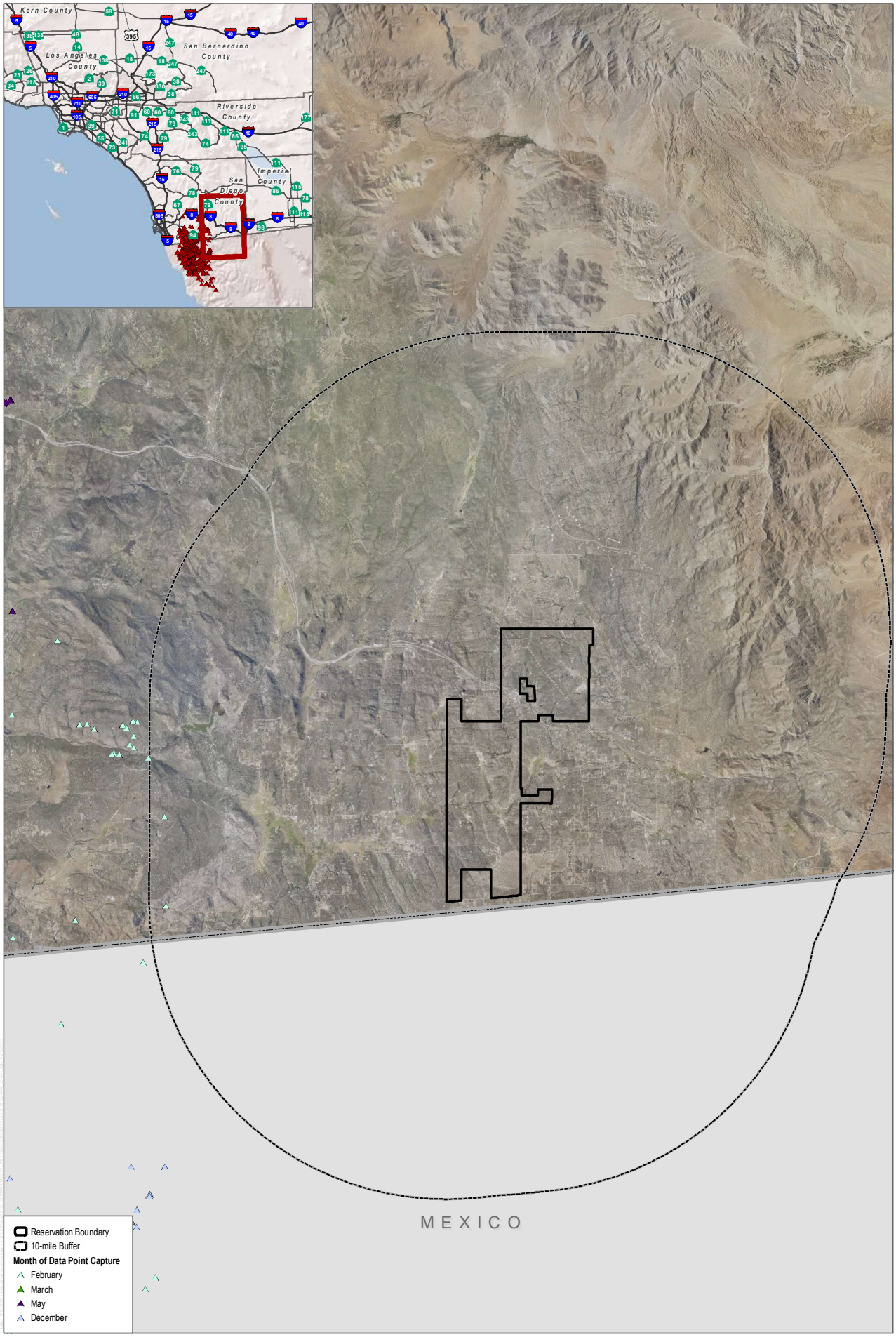

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4I

USGS Golden Eagle Bird M002 - 2015 - Reservation Boundary

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

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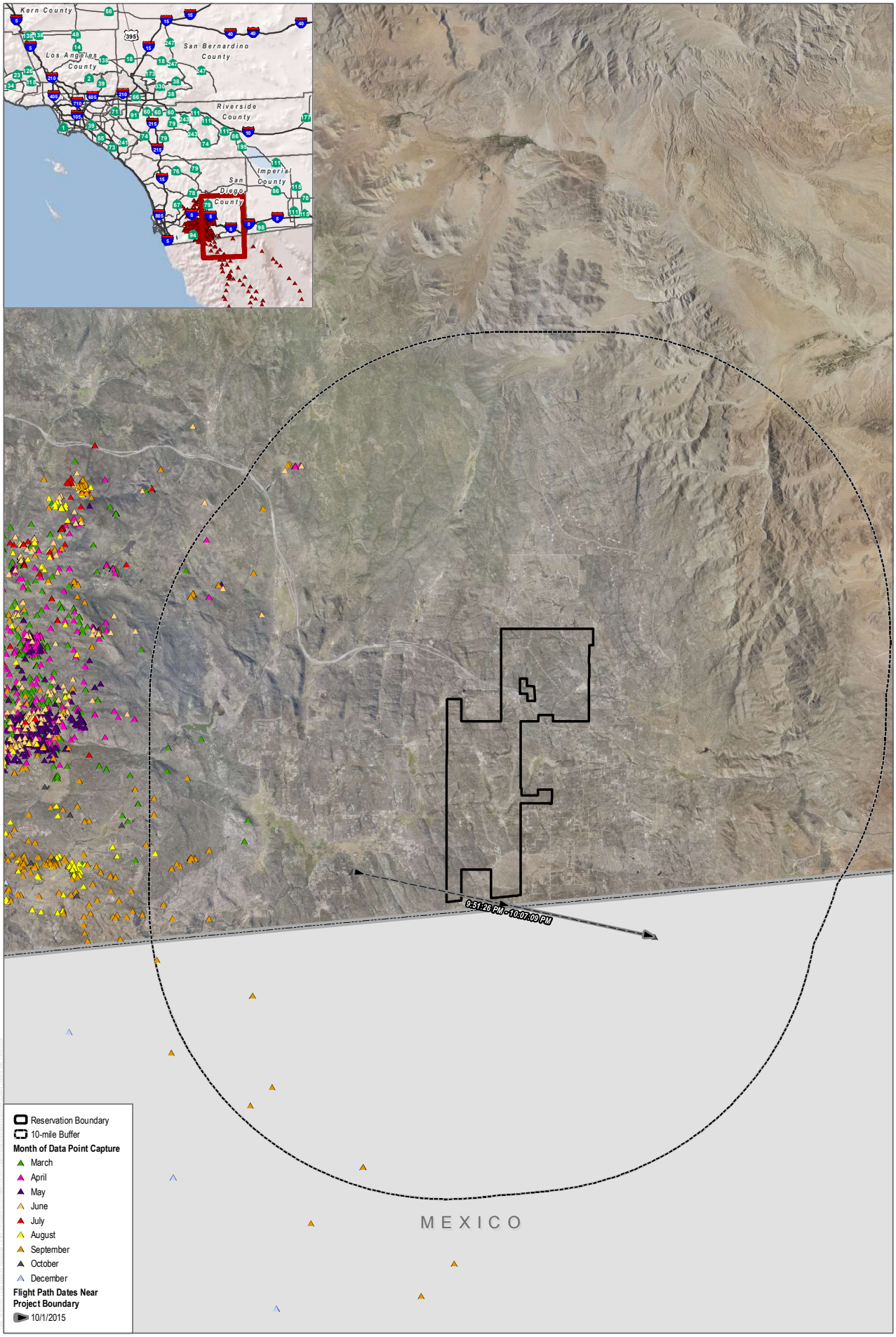

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4m

USGS Golden Eagle Bird M005 - 2015 - Reservation Boundary

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

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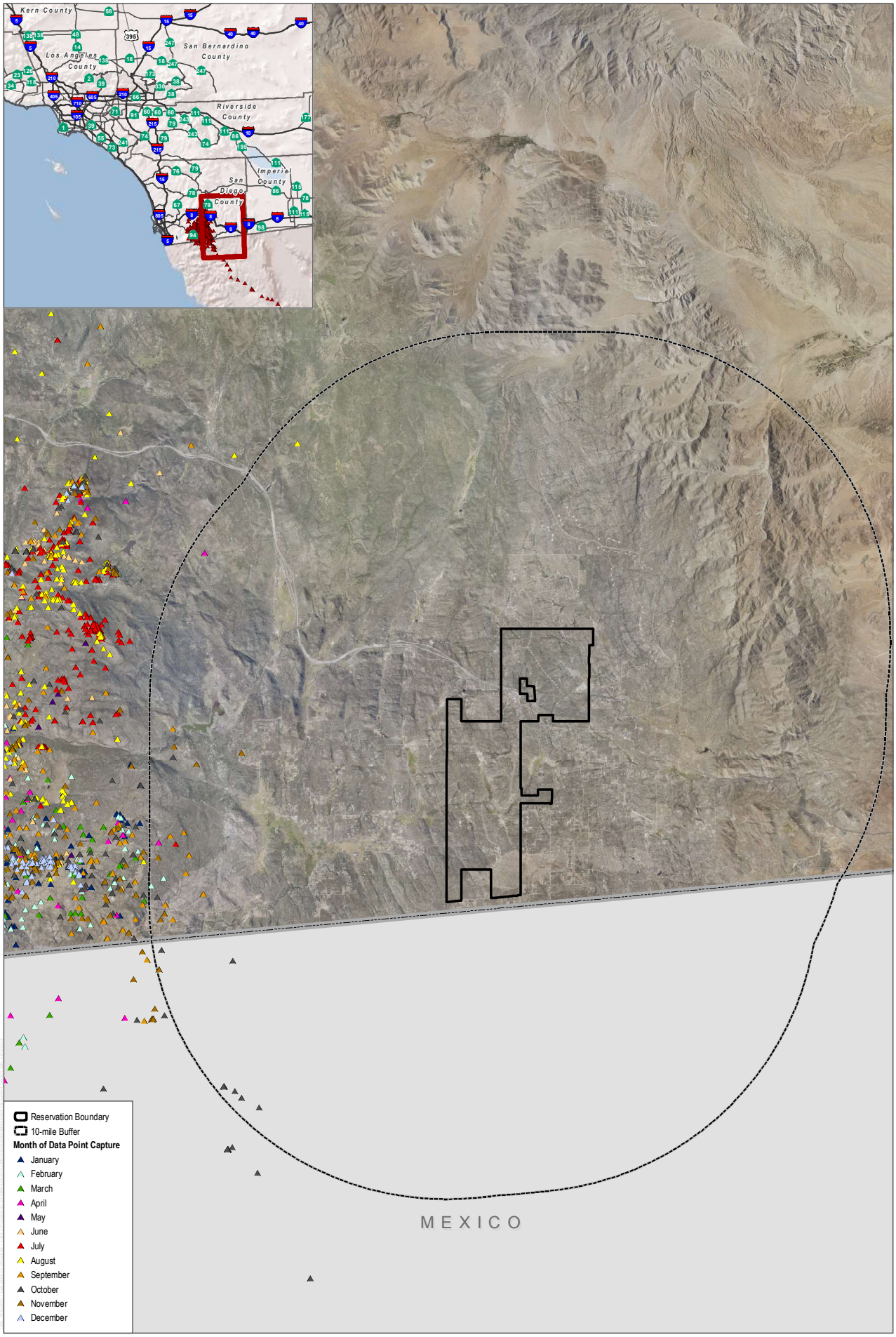

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4n

USGS Golden Eagle Bird M005 - 2016 - Reservation Boundary

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

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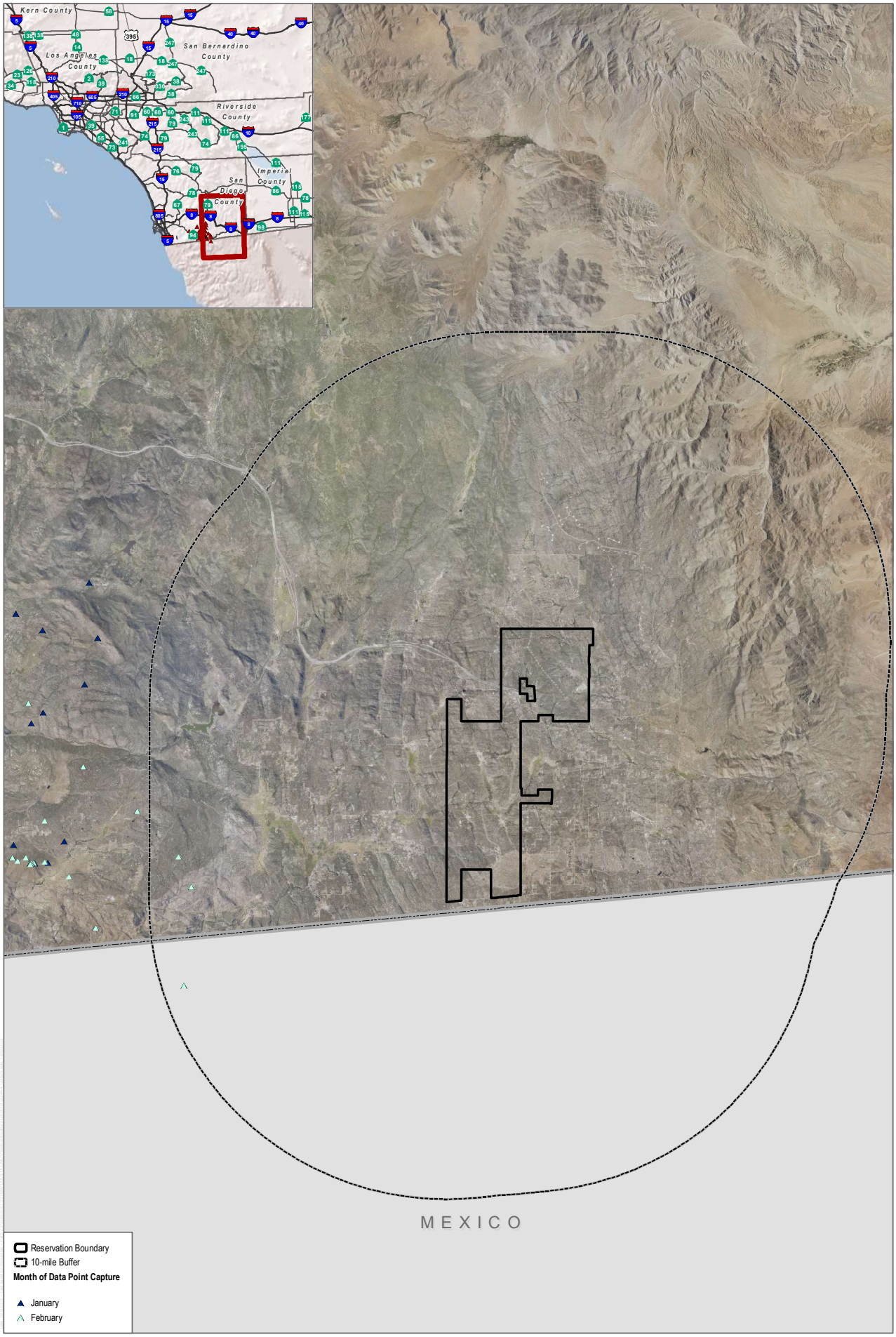

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4o

USGS Golden Eagle Bird M005 - 2017 - Reservation Boundary

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

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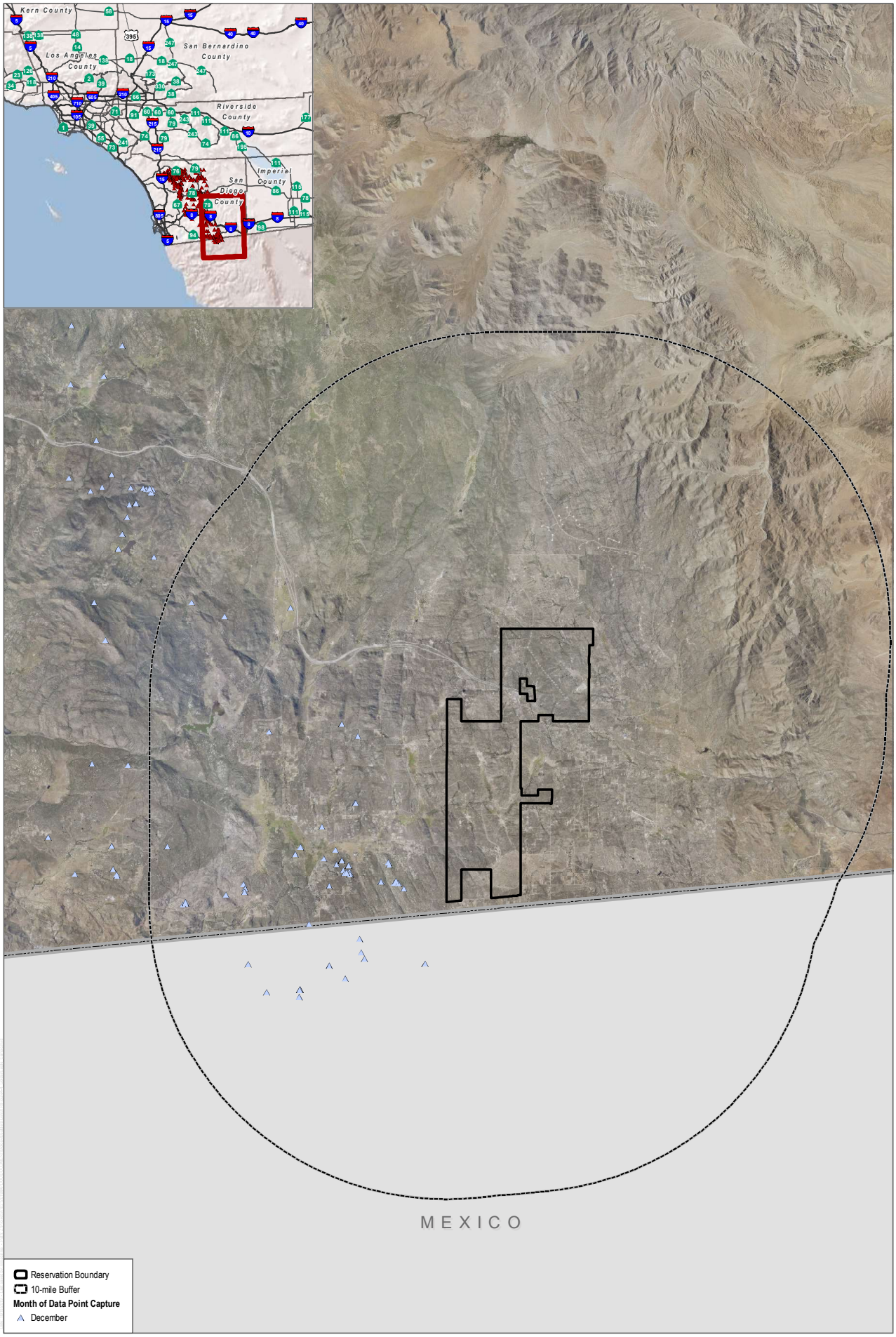

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4p

USGS Golden Eagle Bird M007 - 2015 - Reservation Boundary

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

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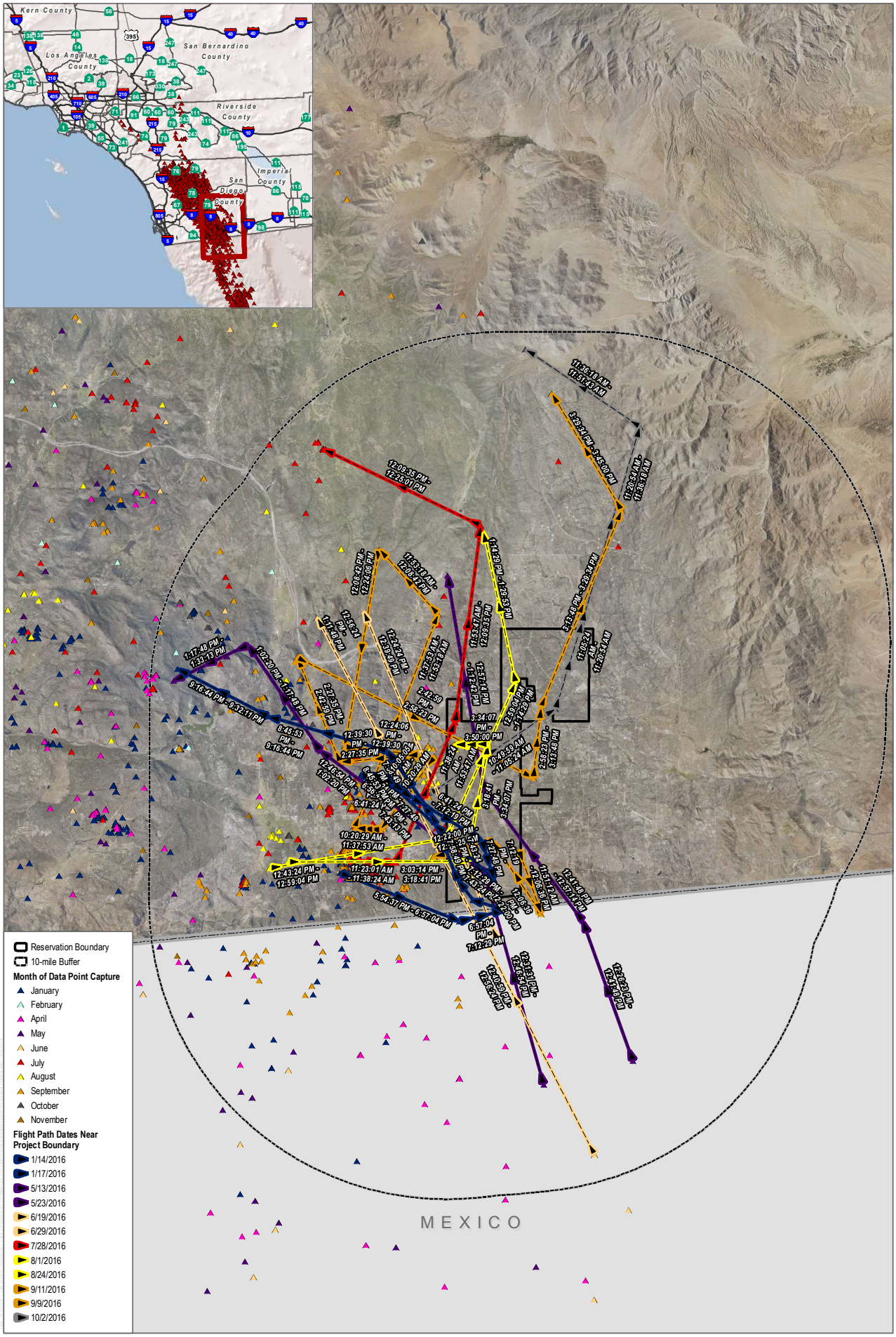

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4q

USGS Golden Eagle Bird M007 - 2016 - Reservation Boundary

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

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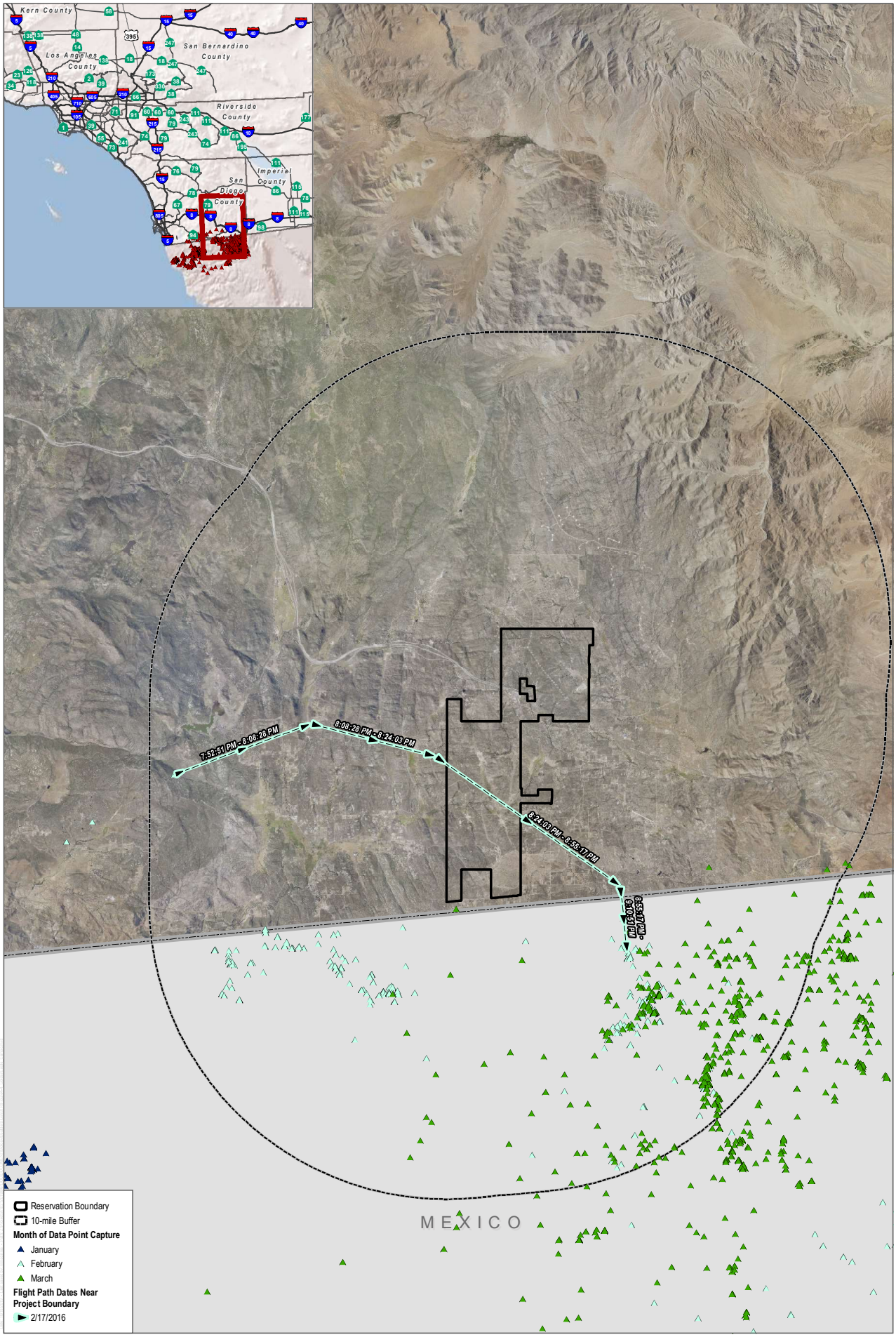

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4r

USGS Golden Eagle Bird M010 - 2016 - Reservation Boundary

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

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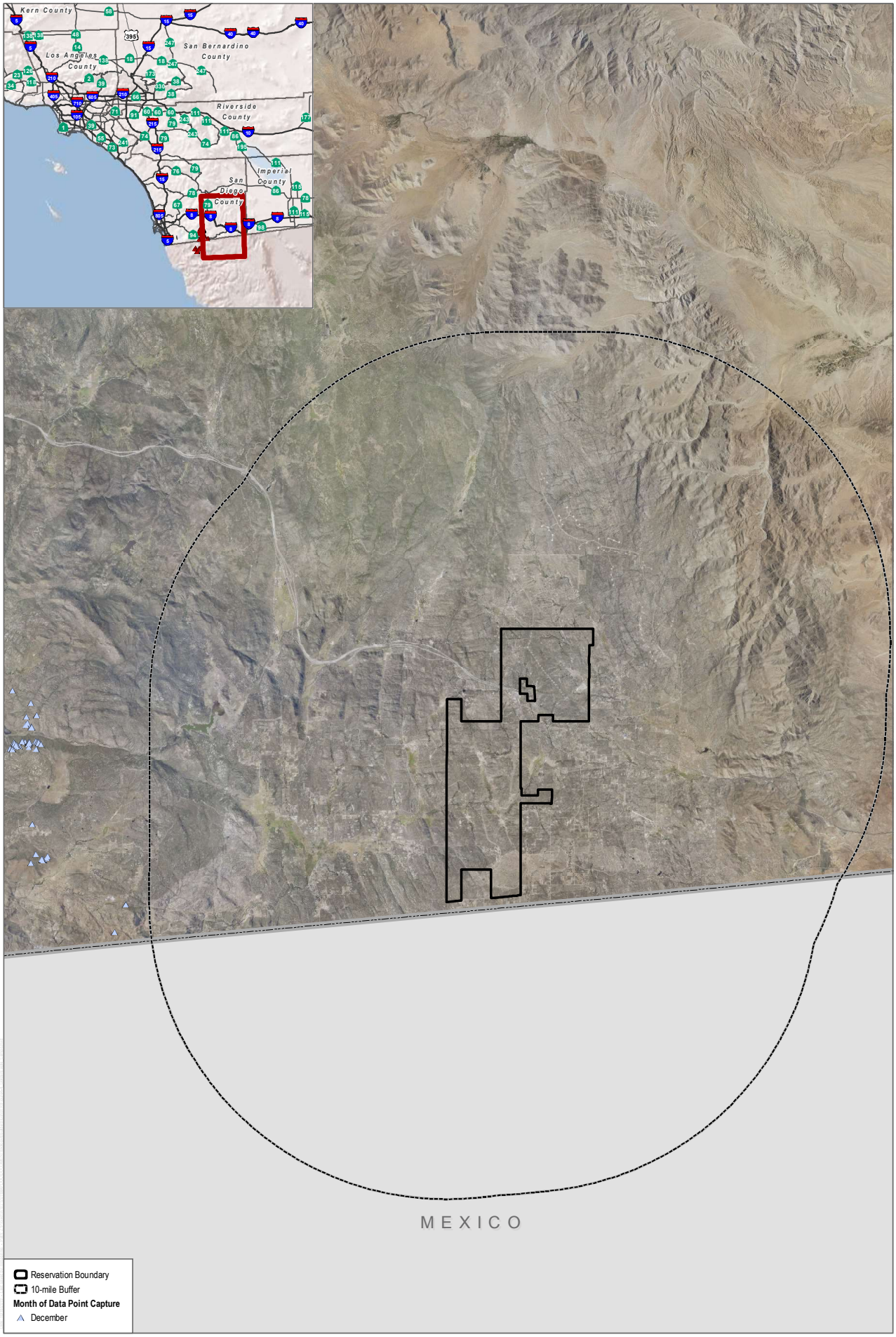

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4s

USGS Golden Eagle Bird M011 - 2015 - Reservation Boundary

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

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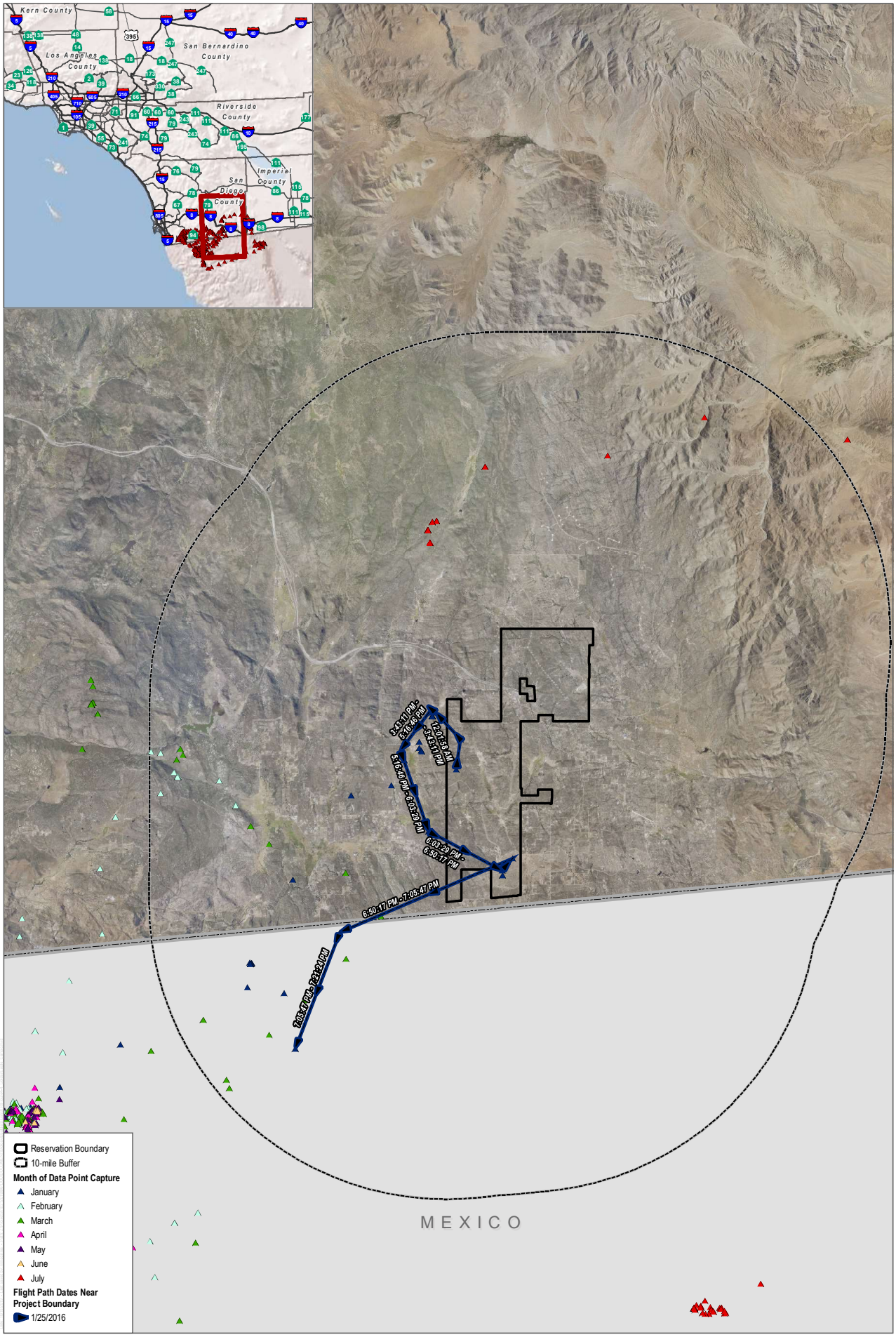

SOURCE: Tracey et al. 2016; Tracey et al. 2017; SANGIS 2017

DUDEK

0 1.5 3 Miles

FIGURE 4-4t

USGS Golden Eagle Bird M011 - 2016 - Reservation Boundary

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

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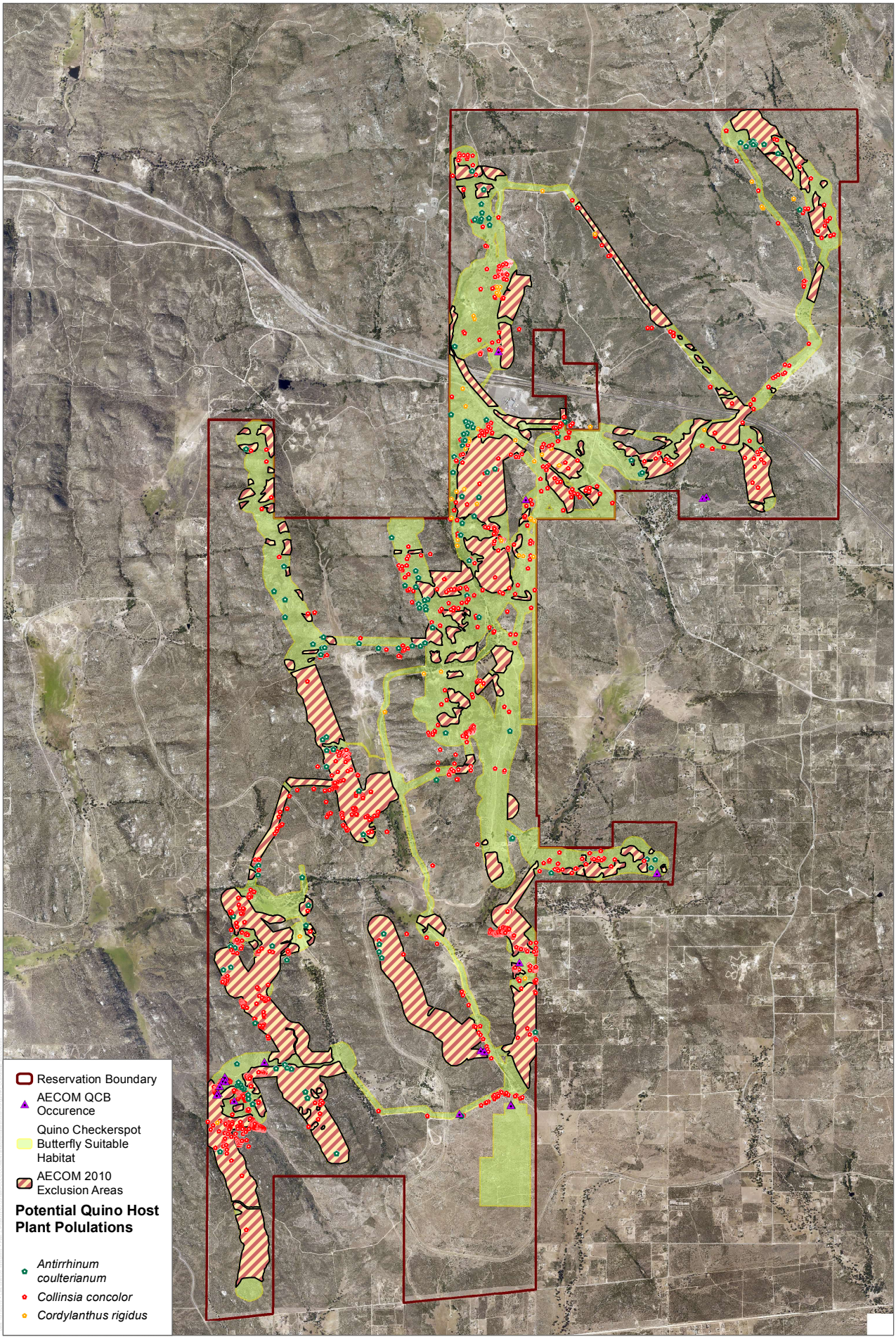

SOURCE: SANGIS 2017; AECOM 2010

DUDEK

0 1,500 3,000 Feet

FIGURE 4-5

2010 Quino Checkerspot Butterfly Survey Results

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

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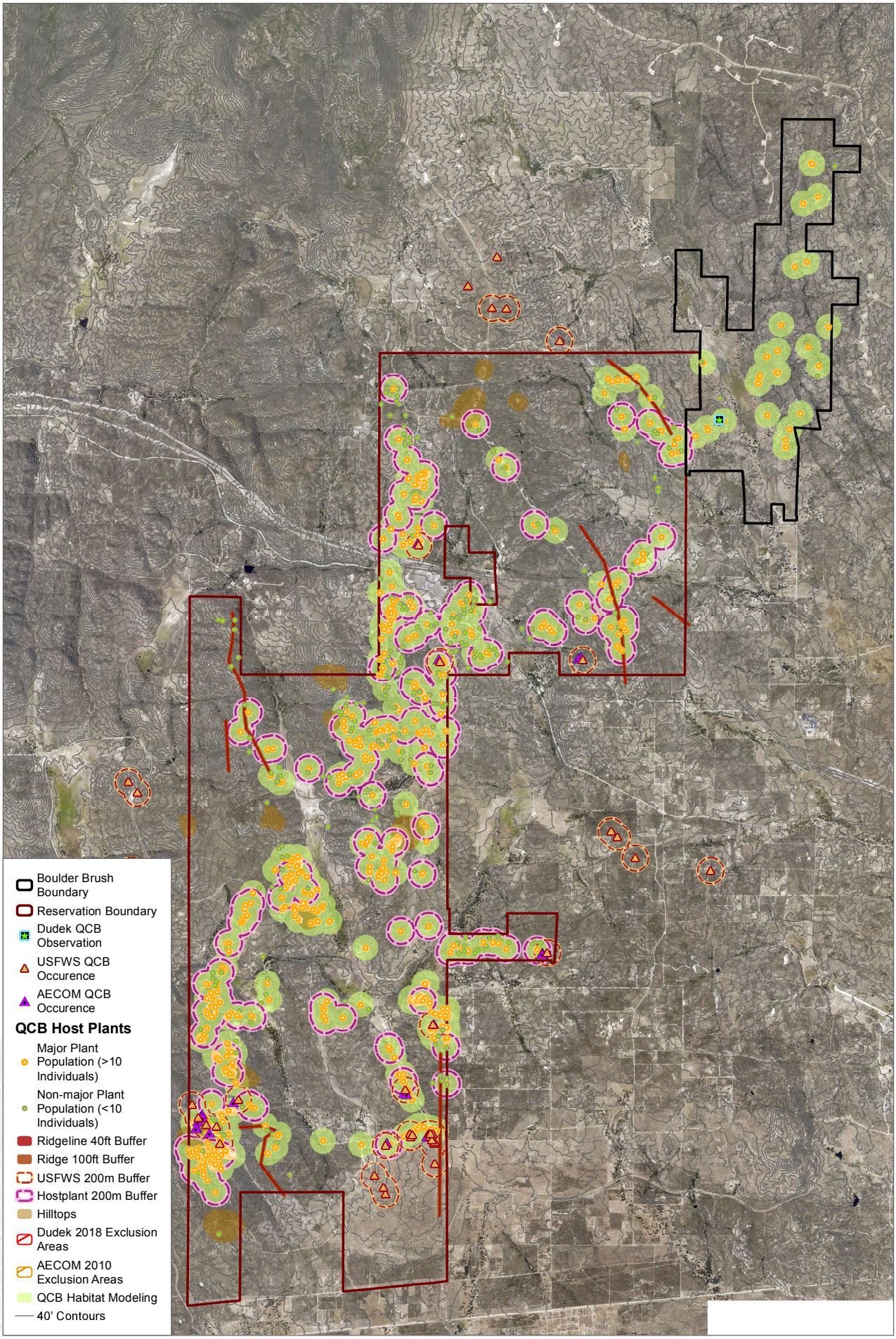

SOURCE: SANGIS 2017; AECOM 2010

DUDEK

0 2,200 4,400 Feet

FIGURE 4-6

Quino Checkerspot Butterfly Potentially Occupied Habitat Model

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

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