APPENDIX P-1

Biological Opinion

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
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In Reply Refer to:
FWS-SD-10B0243-19F1536

January 16, 2020
Sent by Email

Memorandum

To: Regional Director, Pacific Regional Office, Bureau of Indian Affairs, Sacramento, California
Attention: Dan Hall, Regional Archaeologist

From: Field Supervisor, Carlsbad Fish and Wildlife Office, Carlsbad, California

SCOTT SOBIECH Digitally signed by SCOTT SOBIECH Date: 2020.01.16 18:00:20 -08'00'

Subject: Formal Section 7 Consultation for the Wind and Solar Resource Lease on the Campo Band of Diegueño Mission Indians Reservation, San Diego County, California

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the Bureau of Indian Affair's (BIA) proposed approval of a Wind and Solar Resource lease (Campo Lease) between the Campo Band of Diegueño Mission Indians (Tribe) and the Applicant, TerraGen Development Company, LLC (TerraGen or Applicant), that would allow TerraGen or its successor to construct and operate a wind energy facility on the Campo Band of Diegueño Mission Indian's Reservation (Reservation). The project has two components, the Campo Wind Facilities on the Reservation and the interrelated and interdependent Boulder Brush Facilities on private land outside of the Reservation. This biological opinion addresses the potential effects of the proposed action on the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq*.). Formal consultation was initiated on August 29, 2019, the date we received your August 27, 2019, request for consultation.

Suitable habitat for the federally endangered arroyo toad {a. southwestern t. [*Anaxyrus californicus* (*Bufo microscaphus c.*)]; arroyo toad}, least Bell's vireo (*Vireo bellii pusillus*; vireo), southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher), and California condor (*Gymnogyps californianus*) is present within the action area for the proposed project. Recent surveys did not detect these species within the action area. The isolation of arroyo toad habitat suggests that this species is unlikely to occupy the action area over the life of the project. Although the remaining species may use the action area during migration or long-distance foraging activities, the available data suggest that they rarely, if ever, occupy the action area. Therefore, the BIA has determined that the project will have no effect to these species.

This biological opinion is based on: (1) information provided in your agency's August 27, 2019, letter requesting initiation of formal consultation on the proposed project; (2) the *Draft Environmental Impact Statement for the Proposed Campo Wind Energy Project, San Diego, California* (EIS), prepared by Dudek and dated May 2019; (3) the *Biological Assessment for the Campo Wind Project with Boulder Brush Facilities, San Diego, California* prepared by Dudek in August, 2019 and supplemented on December 1, 2019, and December 20, 2019; (4) the *Draft Environmental Impact Report for the Campo Wind Project with Bolder Brush Facilities* (DEIR) prepared by Dudek and dated December 2019; 5; (5) survey reports; and (6) additional correspondence with the Applicant and its contractors. The complete project file addressing this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

CONSULTATION HISTORY

A similar wind energy project, referred to as the Shu'Luuk Wind Project, was proposed on the Reservation by Invenergy Wind California, LLC (IWC), and biological information provided by that project is incorporated into this analysis. Coordination for the previous Shu'Luuk Wind Project began with a kick-off meeting hosted by the Tribe and AECOM consultants (AECOM). On December 15, 2010, the Service, Tribe, IWC, and AECOM visited areas of suitable Quino habitat on-site and discussed potential effects and conservation options for Quino. Meetings with Service continued through April 2012, to discuss avian survey results, modeling, and conservation plans. The Shu'Luuk Wind Project was abandoned in 2012. The Shu'luuk Wind Project did not propose impacts within the Boulder Brush Facilities project area.

On October 10, 2018, Dudek held a kick-off meeting that initiated coordination with representatives from the Service, BIA, Tribe, and TerraGen to discuss the currently proposed project. Dudek provided a summary of surveys conducted to date and discussed potential surveys based on potential impacts to habitat. Dudek submitted a final draft of the *2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project* and *2018 Focused Quino Checkerspot Surveys for the Torrey Wind Project,* which includes the Boulder Brush Facilities, on April 2, 2019. An initial draft of the *2019 Focused Quino Checkerspot Surveys for the Torrey Wind and Boulder Brush Facilities Project* was submitted in July 2019, and a revised report was submitted in August 2019, incorporating recommended edits from the Service. Dudek held a meeting to discuss the biological assessment methods on July 2, 2019, and a follow-up meeting on July 16, 2019, to discuss the revised methods. This meeting was attended by Dudek, the Service, and the Tribe. The BIA submitted a request to initiate consultation to the Service in their letter dated August 27, 2019. BIA's request to initiate consultation included a biological assessment describing anticipated project-related impacts and proposed measures to avoid, minimize, and offset these impacts. Following receipt of the request to initiate consultation, a meeting was held to discuss the biological assessment on September 19, 2019, with the BIA, Dudek, the Service, and the Tribe. A letter supplementing the biological assessment was submitted by Dudek on December 12, 2019, and amended on December 20, 2019.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action is BIA's approval of the Campo Lease between TerraGen and the Tribe. The Campo Lease would allow the development, construction, operation, and decommissioning of the Campo Wind Facilities, located on the Reservation in southeast San Diego County, California (Figure 1). The Boulder Brush Facilities are necessary to transmit power generated by the Campo Wind Facilities to the regional transmission lines via the Sunrise Powerlink and will require a Major Use Permit from the County of San Diego (County) because the facilities will be located on adjacent private lands under the jurisdiction of the County. Located in southeastern San Diego County, approximately 50 miles east of the City of San Diego, California (Figure 1), the project is largely sited on Reservation lands held in trust by the Federal government, as administered by the BIA. The Reservation covers over 16,000 acres, includes lands both north and south of Interstate 8 (I-8) along the Tecate Divide. The Reservation is bordered by the Manzanita Indian Reservation to the north and is approximately 0.25 mile from the Mexico/U.S. international border to the south. The Project is located within the Campo, Cameron Corners, Live Oak Springs, and Tierra Del Sol U.S. Geological Survey 7.5-minute quadrangles.

The Campo Wind Facilities would be located within a corridor of approximately 2,200 acres of land (Campo Corridor) within the Reservation. The Boulder Brush Facilities would be located within a corridor of approximately 320 acres of land (Boulder Brush Corridor) within an approximately 2,200-acre private property adjacent to the northeast portion of the Reservation. Biological resources were evaluated within the Campo Corridor and Boulder Brush Corridor, and they are defined by 250-foot buffers around all project features. The project area is surrounded by low-density rural commercial and residential developments throughout the Reservation and nearby communities. The primary roads within the project area are Church Road, Ribbonwood Road, State Route 94, and Interstate 8.

The project consists of renewable wind energy generation facilities with up to 60 wind turbines, 3 permanent meteorological (MET) towers, 6 temporary MET towers, a temporary concrete batch plant for use during construction, a temporary equipment staging and parking area for use during construction, an operations and maintenance facility, water collection and septic systems, access roads, an electrical collection and communications system, an approximately 8.5-mile long generation transmission (gen-tie) line, a collector substation, a high-voltage substation, and a switchyard to interconnect the Project to the existing SDG&E Sunrise Powerlink. See Appendix B to the Draft Environmental Impact Statement [EIS], Project Description Details, for a detailed description of the Project components.

Specific project features that are relevant to Quino impacts include wind turbine operations, lighting, and road construction and use. Wind turbines will be mounted on concrete pedestals about 20 feet in diameter, and the blades will rotate between approximately 144 and 504 feet above ground. If required by the Federal Aviation Administration, lighting will consist of dual red or white synchronously flashing lights for nighttime and daytime use. Approximately 60 percent of turbines will be illuminated to prevent aviation collisions. Lighting on other

facilities will be motion sensitive rather than steady burning. Approximately 15 miles of new roads will be required for access to facilities. New and existing roads will need to be built or expanded up to 40 feet wide during construction and will be narrowed to 24 feet wide following construction. Access roads to gen-tie facilities will be 16 feet wide. Fuel modification zones will be maintained for 6 feet beyond Campo Wind Facilities and 20 feet beyond Boulder Brush Facilities.

The Applicant or its successor proposes to develop, finance, construct, own, operate, maintain, and ultimately decommission the wind turbines and other project components on the Reservation (Campo Wind Facilities). The Applicant or its successor also proposes to develop, finance, construct, own, operate, maintain, and ultimately decommission the supporting Boulder Brush Facilities, except for the switchyard and incoming/outgoing connection lines components that would be owned and operated by San Diego Gas and Electric (SDG&E).

The life of the project is 25 years with a potential 13-year extension. Upon decommissioning, the project areas will be revegetated and/or restored as described in the biological assessment. If additional extensions are proposed, the BIA may reinitiate section 7 consultation to address potential temporal impacts not considered in this analysis.

Conservation Measures (CM)

CM-1 Offsite Land Conservation

To offset loss of Quino habitat and protect the viability of Quino in the project vicinity, the Applicant will acquire land at a minimum 1:1 ratio of conservation to direct and indirect impacts as defined in the biological assessment. The conservation site will be approved by the Service and will minimally be in escrow by the time operations commence (i.e., wind turbines are operational and sale of energy occurs per a power purchase agreement). Lands within the eastern San Diego County vicinity (specifically in and around the Southeast San Diego and eastern Southwest San Diego Recovery Units) will be prioritized, and lands will be considered occupied following the definition of occupied habitat used in this analysis (i.e., within a 1 kilometer buffer of known Quino locations) or within 2 kilometers between known Quino clusters will be prioritized. First priority will be given to land within the Campo Core Occurrence Complex defined in the draft Quino recovery plan amendment (Service 2019).

As described in section 7.3.1 of the *Draft Environmental Impact Report for the Campo Wind Project with Boulder Brush Facilities*, prepared by Dudek and dated December 2019, pre-construction surveys for Quino host plants will be conducted during the spring and summer of 2020 within an approximately 2.6-acre portion of the Boulder Brush development footprint that has not been surveyed. If any Quino host plants are found, the Quino habitat model will be updated, and consultation will be reinitiated under which additional habitat acquisition may be required.

Upon acquisition of the conservation site, the Applicant will prepare a Land Management Plan (LMP) for Service approval. The LMP must be provided and approved within 6 months of securing the mitigation site (i.e., completion of escrow). The LMP will minimally include the

following components: goals, objectives, and strategies; vegetation management (mapping, targets, non-native plants, weed control, enhancements if any); wildlife and sensitive plant surveys (general inventory and Quino surveys); property management (access controls, roads, fire plan, cultural resource management, trash removal); communications, public involvement, scientific uses, and data sharing; program administration and reporting (LMP implementation, LMP review/revision); a Property Analysis Record (PAR) including administrative costs, contingency funds, and 3-year start-up period funding. The proposed land manager will be given the opportunity to participate in development of the LMP, including the PAR. Funding of the LMP will include a long-term endowment intended to grow for 3 years prior to use and a short-term endowment intended to cover immediate management during the initial 3-year period.

CM-2 Limiting Impacts to Occupied Habitat

To prevent unnecessary intrusion into occupied Quino habitat, construction fencing and/or signage will be installed where impacts will occur immediately adjacent to Quino Focal Areas, defined as within a 200-meter radius around host plant concentrations or within 1 kilometer of known Quino observations.

Following construction, permanent visible markers will demarcate the border between project facilities and Quino Focal Areas. Markers will be placed every 30 feet along the border, and signage will be placed every 300 feet or to the extent required, depending on the length of the border. A 5-foot buffer, cleared of vegetation, will be maintained between project facilities and any Quino Focal Area. If operations and maintenance activities require disturbance in previously undisturbed areas within Quino Focal Areas, coordination with Service will be required prior to initiation of these activities.

A project biologist(s) will be designated by the Applicant and approved by the Service for both sites, as well as the Tribe for work on the Reservation and by the County for work on Boulder Brush. The Campo Environmental Protection Agency will enforce the duties of the project biologist for all work conducted on the Reservation. The Applicant will submit the names, documented experience, any relevant permit numbers, and resumes for the project biologist(s) to Service and the Tribe for approval prior to initiation of construction. The project biologist(s) will be responsible for the following:

1. Providing training to all construction workers;

2. Reviewing and/or designating the construction area in the field with the construction contractor in accordance with the final grading plan prior to clearing, grubbing, or grading;

3. Conducting a field review of the staking to be set by the professional surveyor, designating the limits of all construction activity prior to clearing, grubbing, or grading;

4. Regularly monitoring construction activities to verify that construction is proceeding in compliance with all permit requirements specific to biological resources;

5. Maintaining communication with the appropriate personnel (i.e., construction project manager, and resident engineer) so that issues relating to biological resources are appropriately and lawfully managed; and

6. Reporting any noncompliance issues to the BIA, resident engineer, the Service, and the Tribe.

CM-3 Avoidance of Vehicle Strikes

To minimize the potential for vehicle collisions, vehicle speeds during construction and operations will not exceed 15 miles per hour (mph) from February 15 through May 15, when Quino are most likely to be in the adult stage and in flight. New project access roads in Quino habitat will have 15 mph speed limit, and signs will be posted indicating no off highway vehicle (OHV) use.

CM-4 Revegetation of Temporary Impacts

Disturbed areas that are not required to be clear for operations and maintenance activities will be revegetated or stabilized using soil binders within 90 days of construction completion.

Revegetated areas will use native plant species found within adjacent habitats. Locally available seed will be used. Use of native vegetation will minimize intrusion by non-native species that may displace Quino host and nectar plants as well as alter native vegetation structure. Revegetation will provide a minimum of 40 percent cover of native species within a 2 year time frame. If 40 percent cover of native species is not achieved within 2 years, adaptive management measures will be pursued until 40 percent cover of native species is achieved. This is the only success criterion required for revegetation of temporary impacts. So, it is unclear whether temporarily impacted areas will be successfully restored to Quino habitat.

To maximize benefits of revegetation for the Quino within Quino Focal Areas, the Applicant will coordinate with the Service to determine the appropriate seed mix once it is determined precisely where revegetation will occur. Seed mixes may include Quino host plants throughout revegetation area areas, Quino host plants beyond a predetermined buffer from ongoing project impacts, or no Quino host plants to discourage Quino occupancy and minimize future impacts. The seed mix that most benefits Quino depends on the location of the restoration relative to specific project operations (or non-project related operations).

When the Campo Wind Facilities are decommissioned, a decommissioning plan will be prepared and implemented. The decommissioning plan will include revegetation of the previously-impacted areas. Soil will be revegetated with native plant species found within adjacent habitats and locally available seed will be used. By revegetating with native plants, suitable Quino habitat may be recovered within the project area following decommissioning. Revegetation shall provide a minimum of 40 percent cover of plant species native to adjacent habitats within 2 years. If 40 percent cover of native species is not achieved within 2 years, adaptive management measures will be pursued until 40 percent cover of native species is achieved.

When the Bolder Brush facilities are decommissioned, soil will be stabilized and revegetated with plant species characteristic of native species within adjacent habitats. Locally available seed will be used.

CM-5 Weed Control

To minimize spread of non-native invasive plant species, no planting or seeding of invasive plant species [per the most recent version of the California Invasive Plant Council's (CIPC) California Invasive Plant Inventory for the Project region] will be permitted. The County will provide a list of County-approved plants for revegetation within Boulder Brush that will minimally comply with CIPC standards.

A weed management plan will be developed and approved by the Tribe prior to the commencement of construction activities. The Service will be given the opportunity to review a draft of the weed management plan, but the Tribe has ultimate approval authority for the weed control plan. The plan will include the following: (1) weed inventory and risk assessment; (2) identification of problem areas and necessary preventative measures; (3) annual surveys within the temporary impact areas to document weed patches for two years post construction; (4) success standards, such as temporarily impacted areas have no more than a 10 percent increase in weed species; (5) adaptive management measures; and (6) reporting.

CM-6 Trash Control

To avoid attracting wildlife to the site, including potential Quino predators, fully covered trash receptacles that are animal-proof and weather-proof will be installed and used by the construction contractor(s) to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Littering will be prohibited, and trash will be removed from construction areas daily.

CM-7 Dust Control

Dust can impact Quino by reducing digestibility of host plants and blocking spiracles (breathing organs). Therefore, dust control measures will reduce impacts to Quino. The Applicant will develop a fugitive dust control plan in compliance with San Diego County Air Pollution Control Regulations to reduce particulate matter less than 10 microns (PM_{10}) and fine particulate matter less than 2.5 microns ($PM_{2.5}$) emissions during construction and decommissioning. The following dust control measures will be implemented:

1. All onsite unpaved roads will be effectively stabilized using soil stabilizers that can be determined to be as efficient, or more efficient, for fugitive dust control than California Air Resources Board-approved soil stabilizers, and will not increase any other environmental impacts including loss of vegetation;

2. All material excavated or graded shall be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas;

3. All haul trucks hauling soil, sand, and other loose materials will be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions);

4. Soil loads will be kept below 18 inches of the freeboard of the truck;

5. Drop heights will be minimized when loaders dump soil into trucks; and

6. Traffic speeds on unpaved roads will be limited to 15 miles per hour.

CM-8 Fire Prevention

Although fire is a natural component of Quino habitat, artificially frequent fires can severely degrade habitat quality. Therefore, minimization of project-related ignitions and spread of wildfires will benefit the Quino. In addition to fuel modification zones included in the project, a Campo Wind Project Fire Protection Plan will be prepared and implemented in conjunction with development of the project.

STATUS OF THE SPECIES

The Service listed the Quino as endangered on January 16, 1997 (Service 1997) and issued a recovery plan for the species on August 11, 2003 (Service 2003). A draft amendment to the recovery plan was published in the Federal Register in August 2019 (Service 2019). The status of the Quino was described in detail in the recovery plan and the 5-year review (Service 2009). Please refer to these documents for general information on the life history requirements, threats, and conservation needs of the Quino. These documents can be found on the ECOS profile for the Quino.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) define the environmental baseline as "the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline" (50 CFR 402.02).

Action Area

The "action area" refers to "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). We define the action area as the 2,200-acre Campo Corridor, 320-acre Boulder Brush Corridor, and offsite conservation area that has not yet been identified (CM-1).

The action area is dominated by native chaparral vegetation with oak woodlands and riparian habitats present along scattered canyons. A series of north-south-oriented ridges separated by broad valleys or narrow drainages dominate the topography with large rock outcrops occurring primarily along the ridgelines. Interstate 8 and State Route 94 traverse the Reservation from east to west, and smaller Church Road and Ribbonwood Road travel north to south within the Reservation and Boulder Brush site respectively. Scattered residential and commercial developments and smaller roads also cause minor disturbance throughout the action area.

According to the DEIR, the Campo Corridor includes 100 acres that are disturbed or developed, 64 acres of grassland, 6 acres of riparian vegetation, 1,933 acres of scrub vegetation, and 72 acres of oak woodland. The Boulder Brush Corridor includes 13 acres that are disturbed or developed, 264 acres of scrub, and 20 acres of grassland.

Based on Quino survey results and host plant surveys on the Reservation in 2010, Chinese houses appear to be the primary larval host plant for Quino in the area (AECOM 2010). The Southeast San Diego Recovery Unit overlaps with the eastern section of the Reservation south of State Route 94. The draft recovery plan amendment includes two core occurrence complexes in east county San Diego, the Campo occurrence complex, which overlaps with the project site, and the Jacumba occurrence complex to the east. Several non-core occurrence complexes have also been identified to the west and north of the Campo occurrence complex since the original recovery plan was published. Although much of the land in this area is partially protected through Federal (U.S. Forest Service and Bureau of Land Management), State (Anza Borrego State Park), and tribal ownership, large areas of private land remain, and few areas have management specifically targeted for Quino.

Focused Quino surveys have been conducted within the vicinity of the Reservation and Boulder Brush project area since 2005. Several sites have been surveyed multiple years, including the Campo Landfill project (surveyed in 2005, 2006, 2007, and 2009), Campo/Shu'luuk Wind project (surveyed in 2010 and 2018), Tule Wind Project (surveyed annually from 2009 to 2012), and the Torrey Wind project (surveyed in 2011, 2018, and 2019). For each site with multiple survey efforts, Quino were detected in some years but not detected in other years. No highly productive patches of Quino habitat have been observed in the project vicinity but rather Quino have been found in low numbers and broadly distributed. The highest concentrations of observations are in the southern section of the Reservation and near the Interstate 8 corridor to the north (Figure 1). Based on consistent observations in the area, it appears that these areas contribute to a stable but poorly described metapopulation that includes the project area and adjacent lands.

The biological survey effort is not consistent throughout the action area. The Reservation was surveyed for the Shu'luuk project in 2010 and along a similar project footprint for the subject project in 2018 (AECOM 2010; Dudek 2018a). In 2010, 27 Quino observations were made with a minimum of 24 unique individuals, but no Quino were detected in 2018. Observations from the Campo Landfill project in 2005 and 2009 broadly overlap observations within the Reservation from the 2010 AECOM surveys (Pacific Southwest Biological Services, Inc. 2005, 2009), but no Quino were observed during surveys for the landfill project in 2007 or 2008. The Boulder Brush

project area overlaps with a previous wind energy project, named Jewel Valley Wind, and a current project, named Torrey Wind, with surveys conducted in 2011, 2018, and 2019 (Dudek 2011, 2018b, and 2019). Five Quino were observed within the Boulder Brush project site in 2019, but none were observed in 2011 or 2018.

Quino have diverse habitat requirements including host plants, nectar plants, hilltopping areas, basking areas, and suitable vegetative cover for movement. As described in the biological assessment, we define occupied habitat as all areas with suitable habitat within a 1-kilometer buffer of any Quino observation, including all observations in the Service's database. Within these buffers, areas are excluded if biologists in the field specifically determined that the habitat does not meet the criteria for Quino habitat as defined by the *Quino Checkerspot Survey Guidelines* dated December 15, 2014. Based on these criteria, 1,024 acres are considered occupied within the action area (Figure 1). Occupied habitat within the action area is concentrated in the southeastern section and south of Interstate 8 within the Reservation and in the southwestern section of the Boulder Brush site. The southeastern section of the action area has the highest density of Quino observations, and this pattern continues to the west with a high concentration of Quino along the western boundary of the Reservation but outside of the action area.

We expect that some areas identified as occupied with this methodology do not support Quino, and we also expect that additional surveys would yield Quino observations in additional areas. Overall, the methodology provides the most accurate representation of the amount of occupied habitat in the action area possible given the data available. Because Quino in most life stages are cryptic and population abundance is extremely dynamic, it is not practical or useful to estimate the number of individuals.

Quino are thought to exhibit metapopulation dynamics, and observations outside of the action area, including outside of the Reservation and Boulder Brush project site, suggest that Quino within the action area contribute to and are dependent upon other subpopulations outside the action area within one or more metapopulation(s). The impact of the project on the Quino at the population level can be assessed as the change in functional contribution to the metapopulation(s).

EFFECTS OF THE ACTION

The implementing regulations define effects of the action as "all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action" (50 CFR 402.02).

Direct Effects

In total, the project will impact 930 acres, of which 332.6 acres are defined as occupied Quino habitat, including 165.5 acres from roads, 84.0 acres from wind turbines, 46.2 acres from gen-tie segments, and 36.2 acres from construction and operation facilities. Habitat removal during

project construction is expected to cause death from crushing or displacement of any Quino eggs, larvae, and pupae in the occupied habitat.

Most of the project features and direct impacts to occupied Quino habitat will occur along linear turbine and access road alignments. Therefore, for most of the action area, impacts to occupied habitat will be diffuse and minor in any given area. CM-2 (Limiting Impacts to Occupied Habitat) will ensure that impacts to habitat will not exceed the limits described in the biological assessment.

More concentrated impacts to occupied habitat will occur in the southeastern section of the Reservation, including impacts to approximately 32.4 acres from a temporary laydown yard, permanent collector substation, and operations and maintenance building (Figure 1). Quino have been observed in this section of the Reservation repeatedly during focused surveys for the Campo Landfill project and the Shu'luuk wind energy project. While revegetating the temporary staging area with native habitat will reduce the impact, there will still be a loss and likely degradation of habitat quality for the life of the project and beyond.

Additional impacts to occupied habitat will occur along the gen-tie alignment both north and south of Interstate 8, the operations and maintenance building south of Interstate 8, and the turbine alignment in the northeastern section of the Reservation. Quino were observed in this area in 2010 within the Reservation and in 2019 within the Boulder Brush site. The AECOM (2010) host plant mapping shows that both host plants and Quino observations were widely dispersed with no clear concentrations of Quino resources. Instead, within this area Quino appear to be broadly distributed at low density, and project-related impacts will also be broadly distributed and minor in any given area.

Project impacts described in this analysis include both permanent and temporary impacts. As described in CM-4 (Revegetation of Temporary Impacts), some temporary impacts will be revegetated with native vegetation. Although the goal of revegetation will not be strictly for Quino habitat restoration, Quino resources will be intentionally included in seed mixes where appropriate, and we anticipate that these revegetation efforts will minimize ongoing impacts from habitat loss within the action area. The life of the project is set as 25 to38 years, and upon project completion, impacted areas will be revegetated with native vegetation to the extent practicable or covered with soil stabilizer to minimize erosion. Although this revegetation effort will not specifically target Quino habitat or have Quino-specific success criteria, conversion of turbines, roads, and other facilities to natural vegetation will minimize the impacts of habitat loss to the function of Quino within the metapopulation(s).

Following project construction, Quino may be subject to impacts from project operations. Although Quino may be directly struck by turbines in operation, these strikes are expected to be rare because Quino typically remain low to the ground during flight, and even the vertical flights common in territorial behavior are unlikely to reach the minimum rotor height of 144 feet.

A total of 165.5 acres of occupied habitat will be impacted from roads throughout the action area. Maintained but infrequently used dirt roads will provide some benefit to Quino adults, which use roads as basking areas for thermoregulation. Some basking or flying adults may be

struck by vehicles, but CM-3 (Avoidance of Vehicle Strikes) will limit strikes. Quino larvae are unlikely to use maintained roads given the lack of food resources, but they may use road edges for basking or infrequently cross roads in search of food resources. Therefore, some larvae may be crushed by vehicles. Road maintenance may crush or displace eggs, larvae, and pupae, but adults are expected to escape impacts from road maintenance. We do not anticipate frequent vehicle use of the roads. Therefore, we expect that adults will rarely be struck by vehicles, and few larvae will be crushed by vehicles. Impacts from road maintenance will be rare because we anticipate that host plants will be rare in maintenance areas and few eggs, larvae or pupae are expected to be in maintenance areas.

Indirect Effects

Project maintenance and general vehicle use has the potential to spread non-native seeds and eventually degrade native habitat with establishment of invasive non-native plants. CM-5 (Weed Control) will minimize and offset these impacts by controlling weeds and revegetating temporary impacts with native plants.

Trash, especially food waste, from construction personnel can attract wildlife, including potential predators of Quino eggs, larvae, and pupae. We anticipate that CM-6 (Trash Control) will effectively eliminate impacts of project-related trash on the Quino.

Dust from vehicle operations and general maintenance can decrease palatability of host plants and interfere with respiration in Quino individuals. CM-7 (Dust Control) will reduce dust and the potential impacts from dust. With these measures, project-related dust will likely have only minor impacts to Quino individuals.

The project may cause higher wildfire frequency through increased ignitions, and increased fire frequency is known to cause long-term changes in vegetation communities and degrade habitat quality for native species. CM-8 (Fire Prevention) will minimize project-related wildfire impacts through development and implementation of a fire control plan.

Lighting can act as an attractants to a variety of animal species, including potential Quino predators. Given the location of flashing lights atop wind turbines and the lack of continuously illuminated facilities elsewhere throughout the project, we do not anticipate any deleterious impacts to the Quino of any phase. Quino adults are only active during the day, and immature stages are restricted to the ground, too far from turbine lights to be impacted by any potential predators attracted to the lights.

Although the direct and indirect impacts of the project will decrease the availability of habitat for Quino and reduce the contribution of the Quino within the action area to local metapopulation(s), substantial habitat with similar characteristics and similar or higher concentrations of Quino will remain undisturbed outside of the action area. Specifically, the current project avoids the area with the highest concentration of Quino observed during the Shu'luuk project surveys, which is along the western boundary of the Reservation (Figure 1). Avoiding these ridgetops will substantially reduce impacts compared to the Shu'luuk proposal, and with this avoidance, we anticipate that the Quino population in the area will continue to function and contribute to the

species' metapopulation dynamics. Overall, we anticipate that the project-related loss of contribution to metapopulation stability within the project vicinity will be minor. In addition, preservation and management of occupied Quino habitat outside of the action area per CM-1 (Offsite Land Conservation) will maintain or increase the contribution of Quino from the conservation area to the local metapopulation(s).

Effect on Recovery

Protection and management of the Campo occurrence complex is not specifically required for downlisting, but it is prioritized for delisting of the Quino unless an alternative core occurrence complex can be identified that replaces the function. Although the proposed project will reduce Quino abundance within the Campo occurrence complex at least during the life of the project, we anticipate that the occurrence complex will remain viable, and it will continue to function as part of an undefined metapopulation(s) within and around the action area. CM-1 (Offsite Land Conservation) will ensure that a relatively large area of occupied habitat will be protected and managed in perpetuity. Priority will be given to conservation within the Campo Core Occurrence Complex, and management of the protected lands will include Quino-specific measures with the intent of maintaining or increasing habitat quality for Quino, which would maintain or increase the contribution of Quino from the protected lands to the Quino metapopulation(s) in the project area. Protection and in-perpetuity management of a large block of occupied habitat per CM-1 (Offsite Land Conservation) may contribute to the delisting criteria, which include development and implementation of management plans for each occurrence complex that will be counted toward delisting criteria.

CUMULATIVE EFFECTS

"Cumulative effects" are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation (50 CFR 402.02). The Torrey Wind project has initiated public review through the California Environmental Quality Act, and the proposed footprint of this project overlaps with the action area for the Boulder Brush component of the subject project. The applicant for the Torrey Wind project has initiated discussions with the Service, and we are working with this applicant to address any potential impact to the Quino. There is currently no Federal nexus for the Torrey Wind project. The Service is not aware of any other future actions that may result in cumulative effects to the Quino in the action area of this project.

CONCLUSION

After reviewing the current status of the Quino, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed project is not likely to jeopardize the continued existence of the Quino. We base this conclusion on the following:

1. Although Quino distribution has declined throughout southern California, extant populations remain in Riverside and San Diego counties and northern Baja California, Mexico;

2. Loss or degradation of habitat within 332.6 acres within the 1,024 acres of occupied habitat within the action area will be generally diffuse and minor in any given area;

3. The highest known concentration of Quino within the vicinity of the action area will be avoided by the project;

4. Quino within and surrounding the action area will continue to function as part of a larger metapopulation(s) but at lower levels;

5. Conservation of a large block of occupied habitat with Quino-specific habitat management will likely augment the contribution of Quino within the conservation area to local metapopulation(s); and

6. With implementation of the conservation measures, the proposed action is not anticipated to result in an appreciable reduction in the numbers, reproduction, or distribution of Quino in the action area or range-wide.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. The Service further defines "harm" to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The BIA has a continuing duty to regulate the activities covered by this incidental take statement. If the BIA does not implement the proposed action as described in this biological opinion, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BIA must report the progress of its action and the impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)93].

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal of federally listed endangered plants or the malicious damage of such plants on areas under Federal jurisdiction, or the destruction of listed plants on non-Federal areas in violation of State law or regulation. The Native Plant Protection Act (chapter 10, section 1908) and California Endangered Species Act (chapter 1.5, section 2080) prohibit the "take" of State-listed plants.

AMOUNT OR EXTENT OF TAKE

Quantifying the precise number of individual Quino that may be incidentally taken is not possible because of the butterfly's small body size and diapause life stage make the observation or detection of mortality highly unlikely, and actual numbers and losses of future population cohorts will fluctuate unpredictably in response to weather patterns and other biotic and abiotic factors across the life of the project. Therefore, it is not possible to attribute project-related impacts to the incidental take of individual Quino. Because we cannot provide the precise number of individual Quino that are likely to be taken with implementation of the proposed action, take exemptions are provided as follows:

Death from crushing or displacement along the project construction footprint. Death from vehicle strikes of larvae or adults from driving along access roads, death of eggs, larvae, and pupae from road maintenance, and death of adults from wind turbine strikes. The incidental take limit will be exceeded if construction or operations and maintenance occur beyond proposed the 332.6-acre area defined as occupied Quino habitat within the action area.

EFFECT OF THE TAKE

In the accompanying biological opinion, we determined that this level of anticipated take is not likely to jeopardize the continued existence of the Quino.

REASONABLE AND PRUDENT MEASURES

The BIA will implement conservation measures as part of the proposed action to minimize the incidental take on Quino.

No reasonable and prudent measures have been identified beyond the Conservation Measures described and therefore no terms and conditions are required.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information. We have not identified any additional conservation recommendations that will further benefit the Quino within the action area.

REINITIATION NOTICE

This concludes formal consultation on the proposed project. Reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (l) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is

subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. If you have any questions or comments regarding this document, please contact Eric Porter of the Carlsbad Fish and Wildlife Office at 760-431-9440, extension 285.

Sincerely,

Scott A. Sobiech
Field Supervisor

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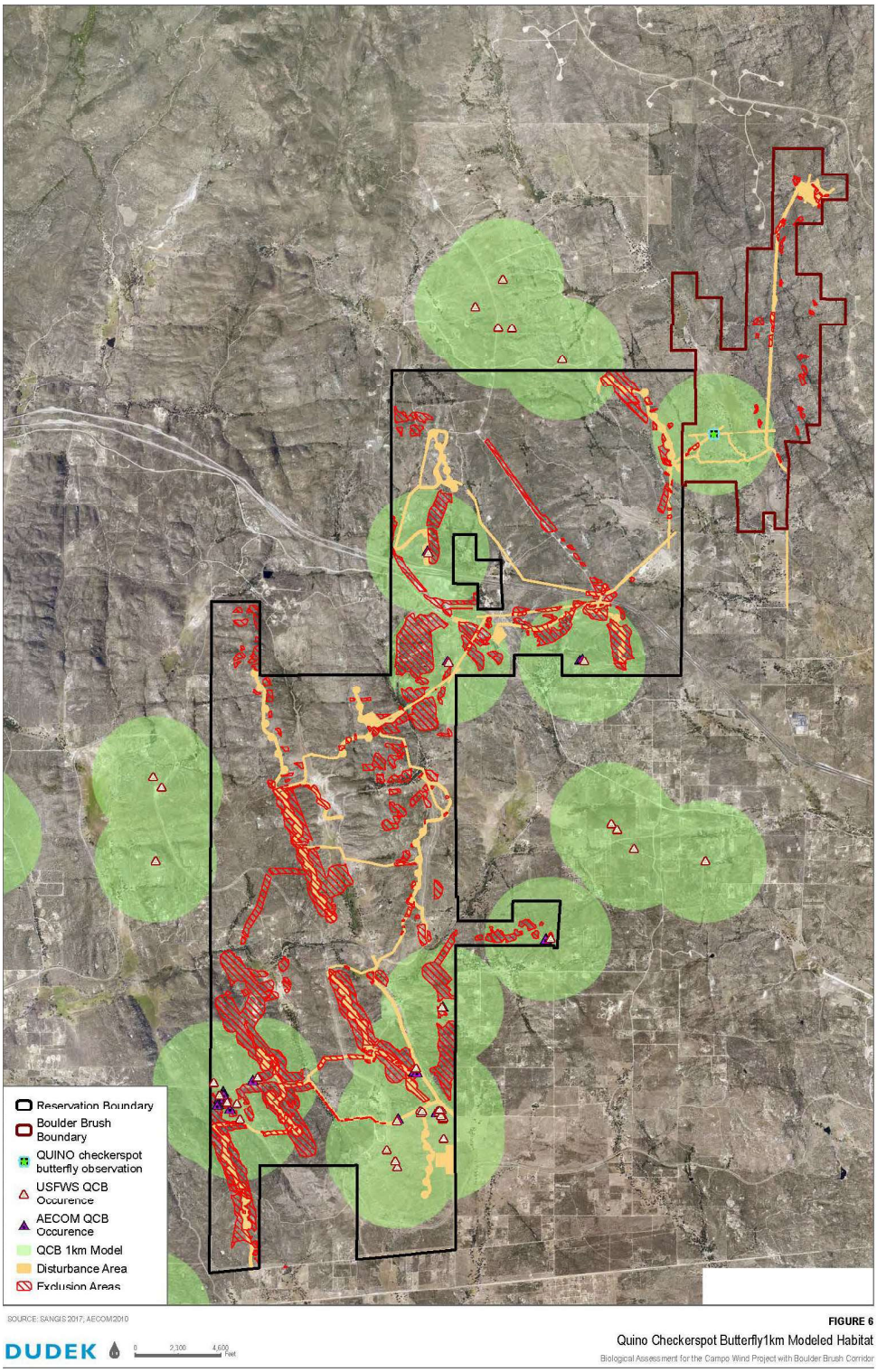

Figure 1. Figure 6 from biological assessment showing distribution of impacts to Quino occupied habitat.