APPENDIX A

Biological Opinion for the ECO Substation Project

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
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Carlsbad, California 92011

In Reply Refer To:
FWS-SD-10B0136-11F0122

SEP 01 2011

Memorandum

To: District Manager, Bureau of Land Management, California Desert District Office
Moreno Valley, California

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

Subject: Formal Section 7 Consultation for the Proposed East County Substation and Transmission Line Project, San Diego County, California

Attention: Teresa A. Raml

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the proposed issuance of a right-of-way (ROW) grant by your agency, the Bureau of Land Management (BLM), and a Clean Water Act section 404 permit ("CWA permit") by the U.S. Army Corps of Engineers (Corps) to facilitate construction of the East County Substation and Transmission Line Project ("ECO Substation Project") by the project proponent, San Diego Gas and Electric Company (SDG&E). This biological opinion addresses the potential effects of the ECO Substation Project 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.*), and is based on information in our files, the biological assessment submitted by your agency, and coordination with the Corps. The complete project file addressing this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

The implementing regulations for section 7(a)(2) of the Act (50 CFR § 402.07) allow for consultation responsibilities to be fulfilled through a lead Federal agency when an action involves more than one Federal agency. The BLM is the lead Federal action agency for the ECO Substation Project, and SDG&E is the designated non-Federal representative for the BLM (SDG&E 2010). This biological opinion fulfills the interagency consultation requirements of section 7 of the Act for the BLM and Corps.

SDG&E has committed that all maintenance activities associated with the ECO Substation Project will be conducted in accordance with SDG&E's low-effect habitat conservation plan (HCP) for Quino (SDG&E 2007). The status of the Quino and the effects of implementing

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SDG&E's low-effect HCP were previously addressed in our biological opinion for the low-effect HCP dated January 16, 2008. In our 2008 biological opinion, we concluded that the level of anticipated take within SDG&E's HCP plan area boundary was not likely to result in jeopardy to the Quino. Given that SDG&E has committed to implement maintenance activities consistent with their low-effect HCP for Quino, we do not anticipate any adverse effects to Quino that were not previously evaluated in the biological opinion for the low-effect HCP. No incidental take of Quino beyond that anticipated in the biological opinion for the HCP will occur. Therefore, it is our conclusion that future maintenance activities associated with the ECO Substation Project will not result in jeopardy to Quino.

Incidental take coverage for substation and transmission line maintenance activities is already provided to SDG&E through the incidental take permit associated with its low-effect HCP. By this consultation, we are extending to BLM the take exemption for Quino (incorporated herein by reference) as provided in the incidental take statement of our biological opinion for SDG&E's low-effect HCP, dated January 16, 2008, for substation and transmission line maintenance activities. Extension of this take exemption to the BLM is limited to substation and transmission line maintenance activities associated with the ECO Substation Project. Thus, BLM's consultation obligations under the Act for issuance of a ROW grant that allows for maintenance activities associated with the ECO Substation Project have been met, and this biological opinion only addresses the potential impacts to Quino from construction of the ECO Substation and the associated substation upgrades and construction of transmission lines described below.

CONSULTATION HISTORY

On September 8, 2010, we received the *San Diego Gas and Electric Company East County Substation Project Biological Assessment* (SDG&E 2010) (BA) and request for formal section 7 consultation from the BLM, and on October 1, 2010, we provided a response letter to the BLM documenting initiation of formal section 7 consultation for the ECO Substation Project.

On February 10, 2011, we received information from the BLM via electronic mail (email) regarding changes to the proposed action.

During late March and early April 2011, we had discussions with SDG&E to clarify the conservation strategy proposed to offset project impacts on Quino, and on April 19, 2011, SDG&E provided confirmation of agreed-upon language to address this issue.

On May16, 2011, we provided a draft biological opinion for review and comment to the BLM and SDG&E. BLM provided a copy of the biological opinion to the Corps. Comments were provided by the BLM, including comments from the SDG&E and Corps, in a memorandum dated June 29, 2011, and received on July 11, 2011.

Comments from the BLM, Corps, and SDG&E were incorporated or addressed, as appropriate, into a revised draft biological opinion, which was provided to the BLM for additional review and

comment on August 29, 2011. BLM provided the revised draft to SDG&E. No further comments were received.

BIOLOGICAL OPINION

PROPOSED ACTION

The BLM proposes to issue a ROW grant to SDG&E for the construction of the ECO Substation Project, which includes construction of a new East County substation, rebuilding of the existing Boulevard Substation, looping in of the existing 500 kilovolt (kV) Southwest Powerlink (SWPL) transmission line into the new substation, and construction of a new approximately 13.5-mile-long 138 kV transmission line to connect the southeastern portion of San Diego County, California, near the Imperial County and Mexican borders (Figure 1). To facilitate project construction, SDG&E proposes to discharge fill material within Waters of the U.S., which will require authorization through the Corps in accordance with section 404 of the Clean Water Act.

Conservation Measures

1. Protocol surveys for Quino will occur within 2 years prior to the commencement of construction activities. The surveys that were conducted in the spring 2010 will be considered valid for construction in 2012 as long as construction commences before February 2012. If construction is not scheduled to commence before February 2012, SDG&E will contact the CFWO to discuss whether an additional survey is warranted.

2. Prior to the start of construction, the boundaries of Quino host plant populations will be delineated with clearly visible flagging and/or fencing. The flagging and/or fencing will be maintained for the duration of construction. These flagged and/or fenced areas will be avoided to the extent practicable during construction activities.

3. A biological monitor will be present during all ground-disturbing and vegetation removal activities. Immediately prior to initial ground-disturbing activities and/or vegetation removal, the biological monitor will survey the site to ensure that no sensitive species will be directly impacted.

4. Prior to construction, all SDG&E, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the conservation measures and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance; impact minimization procedures; the importance of these resources, and the purpose and necessity of protecting them; and methods for protecting sensitive ecological resources. The training will include best management practices to reduce the potential for erosion and sedimentation during construction of the project.

5. SDG&E will compensate for permanent impacts to occupied Quino habitat, defined as any suitable Quino habitat within 0.6 mile (1 kilometer) of a Quino sighting, at a 2:1 ratio. SDG&E will use reasonable efforts to purchase property within the Southeast San Diego Recovery Unit for Quino that contains suitable habitat for Quino. If properties within the Southeast San Diego Recovery Unit cannot be reasonably purchased due to unwilling private property sellers, then SDG&E will consult with the CFWO to determine alternative appropriate conservation. A plan detailing SDG&E's conservation commitments ("conservation plan") will be submitted to the CFWO for approval prior to construction of the project. In addition to identifying the location of the conservation property and its value to Quino, the conservation plan will identify:

   - The method for protecting the biological resource values in perpetuity (e.g., conservation easement);

   - The entity or organization proposed as owner and land manager of the acquired property; and

   - An endowment based on a Property Analysis Record (PAR; Center for Natural Lands Management © 1998) or similar estimation method to secure ongoing funding for the specific perpetual management, maintenance, and monitoring activities identified in the plan (i.e., access control, invasive species management, fencing and signage, etc.). The endowment will be managed as a long-term investment intended to 1) exist indefinitely and 2) fund necessary land management activities, to the extent practicable, solely from investment earnings and not from the initial endowment amount. To assure adequate funding for long-term implementation of the management activities as prescribed in the PAR, the endowment amount should be sufficient to generate the earnings necessary to periodically (i.e., annually) increase the endowment amount in accordance with a long-term inflation indicator (e.g., Consumer Price Index).

6. To prevent the spread of noxious weeds into native habitat, noxious weed infestations that are identified, by the biological monitor, and are located within the project area or along access roads to the project area will be hand treated or flagged and avoided according to the weed species present and project constraints.

7. All off-road equipment used for construction will be power washed before entering the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain seeds of noxious weeds. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material, or other such debris. When construction will occur in known noxious weed infested areas, as identified by the biological monitor, equipment will be cleaned before moving to other sites that do not contain noxious weeds.

8. Traffic speeds on unpaved roads and the ROW will be limited to 15 miles per hour (mph) within occupied Quino habitat (Figures 1 and 2) during the flight season, which generally

includes 4 to 6 weeks between January and May, depending on weather conditions (Service 2003) (see http://www.fws.gov/carlsbad/TEspecies/Quino_Monitor.htm).

9. SDG&E will restore areas temporarily impacted by construction. SDG&E will develop and implement a restoration plan addressing seed mixes, application rates, and monitoring of the temporarily impacted sites that will be restored following the completion of construction. The restoration plan will be submitted to the CFWO for approval prior to construction of the project.

10. SDG&E will install gates at key access points to reduce the potential for the public to enter and disturb the project area. The locations where gates will be installed are depicted in Figure 3 of the BA (SDG&E 2010).

11. During work on the facilities, all trucks, tools, and equipment will be kept on existing access roads or cleared areas, to the extent possible.

12. SDG&E's Environmental Service Group will approve any activity prior to commencing such activity in sensitive areas where disturbance to Quino habitat may be unavoidable.

13. Wire stringing is allowed year-round in sensitive habitats if the conductor is prohibited from dragging on the ground or in brush and vehicles remain on existing access roads.

Action Area

According to 50 CFR § 402.02 pursuant to section 7 of the Act, the "action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area. For this consultation, the action area includes lands within the project footprint (i.e., ECO Substation footprint, transmission line footprint, Boulevard Substation footprint, and SWPL Loop-in area), including within 300 feet of the ROW centerline for the 13.5 mile-long transmission line, specific project components beyond 100 feet of the ROW centerline (e.g., construction yards and access roads), and the new 58-acre substation site with a buffer of 150 feet for construction activities. The project alignment is identified on Figure 1 to provide an overall depiction of the action area. Occupied Quino habitat within the action area is identified on Figure 2.

STATUS OF THE SPECIES

Listing Status

Quino was listed as endangered on January 16, 1997 (62 FR 2313). The *Recovery plan for the Quino checkerspot butterfly (Euphydryas editha quino)* ("Quino recovery plan") was approved on August 11, 2003 (Service 2003), and the Service completed a 5-year review for the subspecies on August 18, 2009 ("Quino 5-year review") (Service 2009).

Species and Critical Habitat Description

Quino is a recognized subspecies of Edith's checkerspot butterfly (*E. editha*) and is a member of the Nymphalidae family, the brush-footed butterflies. Quino differs from the other Edith's checkerspot subspecies in size, wing coloration, and larval and pupal phenotypes (Mattoni et al. 1997). Among the other subspecies of Edith's checkerspot, Quino is moderate in size with a wingspan of approximately 1.5 inches. The dorsal (top) side of its wings is covered with a red, black, and cream colored checkered pattern, and the ventral (bottom) side is mottled with tan and gold. Its abdomen generally has bright red stripes across the top. Quino larvae are black and have a row of nine, orange-colored tubercles (fleshy/hairy extensions) on their back. Pupae are extremely cryptic and are mottled black and blue-gray.

Approximately 62,125 acres of critical habitat are designated for Quino within 9 units throughout the subspecies' current range in the United States. Primary constituent elements for Quino are those habitat features that are essential for the primary biological needs of larval diapause and feeding; pupation; adult oviposition (egg-laying), nectaring, roosting, basking, and dispersal; genetic exchange; and shelter. These habitat features include, but are not limited to: space for individual and population growth and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical and geographical and ecological distributions of Quino. The primary constituent elements ("PCEs") essential to the conservation of Quino are:

1. Open areas within scrublands at least 21.5 square feet in size that:
    a. Contain no woody canopy cover; and
    b. Contain one or more of the host plants dot-seed plantain (*Plantago erecta*), wooly plantain (*Plantago patagonica*), white snapdragon (*Antirrhinum coulterianum*), or Chinese houses (*Collinsia concolor*); or
    c. Contain one or more of the host plants thread-leaved bird's beak (*Cordylanthus rigidus*) or annual owl's clover (*Castilleja exserta*) that are within 328 feet of the host plants listed above; or
    d. Contain flowering plants with a corolla tube less than or equal to 0.43 inch used for Quino growth, reproduction, and feeding;

2. Open scrubland areas and vegetation within 656 feet of the open canopy areas used for movement and basking; and

3. Hilltops or ridges within scrublands that contain an open, woody-canopy area at least 21.5 square feet in size used for Quino mating (hilltopping behavior) and are contiguous with (but not otherwise included in) open areas and natural vegetation described in PCEs 1 and 2 above.

Status and Distribution

Multiple observations of Quino have been reported across a wide elevation range, from approximately 500 feet in elevation to over 5,000 feet (Service 2003). Quino was historically distributed throughout the coastal slope of southern California, including Los Angeles, Orange, Riverside, San Diego, and San Bernardino counties, and northern Baja California, Mexico (Mattoni et al. 1997, Service database). That distribution included the westernmost slopes of the Santa Monica Mountains, the Los Angeles plain and Transverse Ranges to the edge of the upper Anza-Borrego desert, and south to El Rosario in Baja California, Mexico (Emmel and Emmel 1973, Mattoni et al. 1997, Service database).

Quino may have once been one of the most abundant butterflies in coastal southern California, but by the 1970s, most of the coastal bluff and mesa habitats in southern California had been urbanized or otherwise disturbed. However, Quino still occupied locations inland and at higher elevations including Dictionary Hill, Otay Lakes, and San Miguel Mountain in San Diego County; and the Gavilan Hills in Riverside County. By the middle 1980s the species was thought to have disappeared from the known locations; the petition to list the species in 1988 suggested that it might be extinct. Current information suggests that Quino has been extirpated from Los Angeles, Orange, and San Bernardino counties and most northern locations in San Diego County. Nonetheless, new populations have been discovered in portions of Riverside County and south San Diego County, and the species continues to survive in northern Baja California, Mexico.

Overall, more than 75 percent of the historical range of the Quino has been lost (Brown 1991, Service database), and more than 90 percent of the subspecies' coastal mesa and bluff habitat, where most historical records are located, has been destroyed by habitat fragmentation, degradation, and development (Service database). At listing, Quino populations were reduced in number and size from historical conditions by more than 95 percent range-wide. For a detailed discussion of the current distribution of Quino, please refer to the Quino recovery plan (Service 2003). The Quino recovery plan identifies six recovery units throughout Riverside and San Diego counties and describes the known extant occurrence complexes (or metapopulations) throughout the range of the subspecies.

Habitat Affinity

In southwestern San Diego County, the primary host plants for the Quino are dot-seed plantain, thread-leaved bird's beak, and white snapdragon. Larval Quino may also use other species of plantain (*Plantago* spp.) and annual owl's-clover as primary or secondary host plants and will diapause in or near the base of native shrubs, such as California buckwheat (*Eriogonum fasciculatum*) (73 FR 3327). In 2008, Chinese houses was reported as a new Quino host plant (Pratt 2010).

In its adult stage, Quino use a number of flowering plants as nectar sources. These nectar sources include lomatium (*Lomatium* spp.), goldfields (*Lasthenia* spp.), popcorn flowers

(*Plagyobothrys* and *Cryptantha* spp.), gilia (*Gilia* spp.), ground pink (*Linanthus dianthiflorus*), chia (*Salvia columbariae*), annual lotus (*Lotus* spp.), onion (*Allium* spp.), yerba santa (*Eriodictyon* spp.), and California buckwheat (67 FR 18359, Mattoni et al. 1997).

Quino are generally found in open areas and ecotone situations that may occur in a number of plant communities, including grasslands, coastal sage scrub, and native woodlands with an open canopy cover. Open areas within a given vegetation community seem to be critical landscape features for Quino populations. Optimal habitat appears to contain little or no invasive nonnative vegetation, and especially, a well-developed cryptogamic crust. Densely vegetated areas are not known to support Quino (Mattoni et al. 1997). Habitat patch suitability is determined primarily by larval host plant density, topographic diversity, nectar resources availability, and climatic conditions (Service 2003).

Threats and Conservation Needs

Quino is threatened by urban and agricultural development, invasion by nonnative species, off-road vehicle use, grazing, fire management practices (Service 2003), and habitat fragmentation that limits metapopulation dynamics. Other factors that could contribute to population declines include enhanced nitrogen deposition and elevated atmospheric carbon dioxide concentrations. In addition, climate change has been identified as a potential threat to Quino, which is supported by observations in western Riverside County of ongoing range shift for this subspecies upslope in elevation, and extirpation of many populations in lower elevations, where drier habitats are likely to occur (Service 2009). Conversion to nonnative annual grassland will be the greatest threat to Quino reserves (Service 2003).

Significant areas of remaining Quino habitat have been protected through inclusion in Natural Community Conservation Planning/Habitat Conservation Planning reserve areas, the San Diego National Wildlife Refuge, and other habitat acquisition initiatives. Future conservation needs include protecting additional habitat supporting known populations (occurrence complexes) and landscape connectivity between them; conducting research necessary to refine recovery criteria; management of Quino habitat including enhancement of host plant populations, diversification of nectar sources and pollinators, and control of nonnative plants; establishing and maintaining a captive propagation program; targeted reintroduction if determined to be necessary; and establishing a cooperative outreach program.

The status of Quino was described in detail in the recently completed Quino 5-year review (Service 2009). Please refer to this document for more detailed information on local distribution of Quino populations, abundance, biology and life history, and habitat and ecosystem requirements, as well as a full discussion on potential threats to the species as a result of climate change.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present effects of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated effects of all proposed Federal projects in the action area that have undergone section 7 consultation, and the effects of State and private actions that are contemporaneous with the consultation in progress.

The action area is within the plan area for SDG&E's low-effect HCP for Quino (SDG&E 2007), which addresses potential impacts from SDG&E's existing and future operations and maintenance activities and some new construction. Up to 33 acres of Quino habitat is anticipated to be impacted over a 50-year period as a result of the HCP, but only 16 acres of impacts are expected to be permanent. Most of these impacts are expected to be small-scale impacts that occur over a large area (i.e., most of San Diego County) (Service 2008). Thus, only a small portion of the impacts authorized under the HCP would be expected to occur within the action area.

On November 10, 2010, the Service issued a no jeopardy and no adverse modification biological and conference opinion addressing construction and long-term operations and maintenance of the Sunrise Powerlink (SRPL) Project (Service 2010). The SRPL Project includes construction of a high-voltage 117-mile transmission line and related facilities from south of El Centro in Imperial County to the northeast edge of the Marine Corps Air Station Miramar in San Diego County. Some of the impacts to Quino from the SRPL Project occur within the Jacumba Occurrence Complex[1] and the Southeast San Diego Recovery Unit. Within 0.8 acre of land, the SRPL Project overlaps a portion of the action area for the ECO Substation Project, but not in the area occupied by Quino (Figure 1). Impacts to Quino and its designated critical habitat as a result of the SRPL Project were fully offset through the acquisition and provision of long-term management of occupied Quino habitat at the Long Potrero site.

The proposed project occurs within the Southeast San Diego Recovery Unit and the Jacumba Occurrence Complex for Quino, as identified in the Quino recovery plan (Service 2003) (Figure 1). Recovery units are the major units for managing recovery efforts for Quino. Recovery units often contain one or more Quino occurrence complexes. Recovery units are believed to be minimum viable units, within which landscape connectivity must be maintained.

About 1.58 miles of the proposed 138 kV transmission line will cross occupied Quino habitat (Figures 1 and 2). The transmission line will include poles and maintenance pads. In addition, 588 feet of new access roads will be constructed within occupied Quino habitat. Overall, new construction could impact up to 3.62 acres of occupied Quino habitat.

Quino individuals were observed along a 1.58-mile portion of the proposed 138-kV transmission line in 2009 (two individuals) and 2010 (two individuals) (SDG&E 2010). Additional Quino

[1] The Jacumba Occurrence Complex has changed since the Quino recovery plan (Service 2003) was issued due to additional observations of Quino (Figure 1).

individuals were also observed north and south of the action area (SDG&E 2010) (Figure 2). In addition, host plants were found in the vicinity of these individuals, including dot-seed plantain and owl's clover. Quino have not been observed along any other portions of the proposed transmission line route, at the new substation site, or at the Boulevard Substation rebuild site. Using a 0.6-mile (1-kilometer) buffer around Quino individuals (Service 2003), Quino occupy 3.62 acres of suitable habitat within the action area that could be subject to ground disturbance due to project construction activities.

Critical Habitat

The ECO Substation, SWPL loop-in, and Boulevard Substation rebuild sites are not located within critical habitat for Quino (Figure 1). The proposed 138 kV transmission line corridor crosses Unit 10 (Jacumba) for approximately 3.74 miles from the proposed location of steel transmission poles SP 66 through SP 77. PCEs 1, 2, and 3, with the exception of host plants, are found between SP 66 through 72. PCEs 1, 2 and 3, including host plants, occur within only approximately 0.7 mile of the overall 3.74-mile distance between SP72 through SP77 (SDG&E 2010).

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the proposed action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

According to the BA (SDG&E 2010), the BLM and California Public Utilities Commission (CPUC) consider Energia Sierra Juarez (ESJ) Gen-Tie Project and the Tule Wind Project "connected actions" to the ECO Substation Project under the National Environmental Policy Act. The Department of Energy (DOE) is the lead Federal agency for the ESJ Gen-Tie Project, which involves construction of a new high voltage transmission line that will provide a generation-tie to transmit renewable energy from a wind farm in northern Baja California, Mexico, to the ECO Substation (Figure 1) (DOE 2010). The DOE has determined that the ESJ Gen-Tie Project will not affect Quino or other federally listed species (DOE 2011). The BLM is the lead Federal agency for the Tule Wind Project, which will consist of up to 128 wind turbines, access roads between the turbines, overhead transmission lines, and associated facilities and include construction on BLM lands. The BLM has determined that Quino will be affected by the Tule Wind Project.

The Service has determined that the ESJ Gen-Tie Project and Tule Wind Project are not interrelated or interdependent actions to the ECO Substation Project. Based on our review of the "No Project Alternative 2-NO ECO Substation Project" in the *Draft Environmental Impact*

Report (EIR)/Environmental Impact Statement (EIS) for the East County Substation, Tule Wind, and Energia Sierra Juarez Projects (CPUC/BLM 2010), the ESJ Gen-Tie Project and the Tule Wind Project could tie into the existing transmission infrastructure even if the ECO Substation were not built. According to the EIR/EIS, without the ECO Substation Project there would not be an "interconnection hub" that would enable renewable energy projects such as ESJ Gen-Tie and Tule Wind to connect to the grid. However, the EIR/EIS also describes what facilities would be required to allow the projects to connect to SDG&E's existing transmission system (i.e., additional miles of transmission line, connection points on the existing transmission system, and possibly new substations). Thus, based on the information available to us and our understanding of the projects, the ESJ Gen-Tie Project and Tule Wind Project would still occur regardless of whether the ECO Substation Project is constructed. Moreover, the Tule Wind Project is being addressed in a separate section 7 consultation with the BLM, and as indicated above, DOE has made a "no effect" determination for the ESJ Gen-Tie Project.

The following analysis of direct, indirect, and cumulative effects, our analysis of the impacts to Quino critical habitat, and the overall project's effect on recovery is inclusive of all impacts to Quino and its critical habitat from the ECO Substation Project. Because the overall project could not be constructed as proposed without approval of both of these Federal actions, no difference exists between project impacts facilitated by the proposed BLM ROW grant and those impacts facilitated by the proposed Corps CWA permit.

Direct Effects

Construction within Quino habitat has the potential to kill or injure Quino eggs, larvae, and pupae during the removal or crushing of occupied host plants. This impact could occur within about 3.62 acres of occupied Quino habitat due to tower and access road construction. The limited amount of ground disturbance; the flagging and avoidance of host plants during construction; and the focus on keeping facilities, trucks, tools and equipment on existing access roads or cleared areas should minimize these impacts.

Adult Quino could be injured or killed by moving vehicles if construction is conducted during the Quino flight season, which generally includes 4 to 6 weeks between January and May, depending on weather conditions (Service 2003). Based on the number of adult Quino observed in the action area during the 2009 and 2010 surveys (i.e., 2 adult Quino each year), we believe the likelihood of this impact occurring is low, though not discountable. To reduce this impact to a discountable level (i.e., one that is highly unlikely to occur), SDG&E will implement a conservation measure that limits traffic speeds on unpaved roads and the ROW to 15 mph within occupied Quino habitat during the flight season.

In addition to loss of individual Quino larvae, eggs, and pupae, the permanent removal[2] of up to 3.62 acres of occupied Quino habitat will reduce the availability of oviposition sites, larval food sources, pupal sheltering sites, and adult nectar sources within the action area. However, the

[2] SDG&E will restore temporary habitat impacts, but thus far, none of the temporary impacts identified are within occupied Quino habitat.

3.62 acres of impacted habitat represents only 0.1 percent of the 3,349 acres of Quino habitat within the Jacumba Occurrence Complex (Service 2003), and because the impacts will occur along a 1.58-mile linear impact area, the project will not remove host plants or nectar sources or affect Quino individuals at any concentrated location.

Habitat loss can result in habitat fragmentation, making it more difficult for Quino individuals to move between areas of higher quality habitat and exchange genetic material (Service 2003). The small-scale size of the individual habitat impacts along a linear alignment is not expected to fragment Quino habitat within the action area. The largest impact area around a given pole is 1 acre. In addition, the impacts will be offset at a 2:1 ratio by preservation and management of similar habitat, with priority given to conservation of habitat within the Southeast San Diego Recovery Unit. Overall, the loss of individual Quino and its habitat within the action area as a result of project construction is not expected to result in an appreciable reduction in the numbers, reproduction, or distribution of Quino in the action area. As a result, we expect existing Quino occurrences and populations within the Jacumba Occurrence Complex to be resilient to the minor effects of project construction.

Indirect Effects

Nonnative Plant Introduction

Construction activities have the potential to introduce nonnative plants to the action area by carrying seeds on vehicles, people, or equipment, and through ground disturbance. Ground disturbance can promote the establishment and spread of nonnative plants (Merriam et al. 2006). Such plants can degrade habitat quality for Quino by competing with and replacing host and nectar plants (Service 2003). Conversion of habitat to nonnative grasslands is the greatest threat to Quino reserves (Service 2003). However, several conservation measures are proposed that should effectively avoid or minimize the potential for the spread of nonnative species, including the identification and avoidance of weed infestations, washing of off-road equipment prior to entering the construction area, restoration of temporary habitat impacts, and removal of weeds.

Dust

Fugitive dust from construction activities can negatively affect photosynthesis and decrease water-use efficiency of plants (Sharifi et al. 1997), including Quino host and nectar plants. However, due to the temporal and small-scale nature of construction activities, the potential for impacts from dust should be insignificant.

Recreation

New access roads can lead to increased recreational activities (including off-highway vehicle use) that can disturb host and nectar sources, kill individual Quino, and introduce and promote nonnative plant species. However, the project proponent will install gates at key access points to reduce the potential for the public to enter and disturb the area. For the most part, existing roads

will be used for project construction of the substation and transmission line, with only one short span of 588 feet of road construction needed for new access. The addition of new gates should reduce the potential for recreation impacts compared to the existing condition.

Fire

Transmission lines can cause fires via sparks, debris contact with transformers and conductors, wooden poles being blown down by wind, conductor-to-conductor contact, dirt buildup on powerline hardware, or wildlife contact with powerlines. Small and medium voltage powerlines and high winds were responsible for four of the largest California fires from 1923 to 2007.

Quino adults, larvae, and eggs could be burned in wildfires. In addition, habitat is susceptible to conversion of shrubland to nonnative grasslands with short fire return intervals (Service 2003). Nonnative plants resulting from this conversion likely would compete with Quino host and nectar plants (Service 2003). However, periodic infrequent fire also can play a role in creating and maintaining suitable habitat conditions for Quino (Mattoni et al. 1997), like open areas. The impact of fire on Quino depends upon the intensity, frequency, and season of fire occurrence and size of the nonnative seedbank (Service 2003).

SDG&E will implement a "Construction Fire Prevention Plan" for the ECO Substation Project and monitor construction activities to ensure its implementation and effectiveness. This plan will include adherence to "Wildland Fire Prevention and Fire Safety Electric Standard Practices" to reduce the potential for transmission line-induced fires. The plan will also: 1) include procedures to minimize the potential to start a fire, a requirement to adhere to California Fire Protection Codes, and a requirement to maintain fire-fighting equipment onsite and in vehicles during construction; and 2) provide for appropriate timing and use of fire-protective mats or shields during grinding and welding operations, emergency response and reporting procedures, and relevant emergency contact information. With implementation of these standard practices, the potential for wildfire induced impacts to Quino due to project construction should be effectively avoided or minimized to a discountable level.

Effect on Critical Habitat

The analysis of impacts to critical habitat does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 C.F.R. 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task force* v. *U.S. Fish and Wildlife Service* (No. 03-35279) to complete our analysis on the effects of the ECO Substation Project on designated Quino critical habitat. The proposed project will result in the permanent loss of 2.78 acres of designated critical habitat for Quino, which represents only 0.11 percent of the 2,514 acres of designated critical habitat within Unit 10 (Jacumba) and only 0.004 percent of the total 62,125-acre designation. The ground disturbance will occur over a linear distance of approximately 3.74 miles and across a number of sites to install 10 steel transmission poles (i.e., SP 66 through SP 77) and their associated maintenance pads and to provide access to the pole sites. Within the overall area of

critical habitat impacted, loss of host plants (PCE 1) will include only 1.7 acres distributed between 6 of the steel transmission pole sites (i.e., SP72 through SP77). Thus, the impact to Quino breeding, feeding, and sheltering habitat will not be concentrated at any one site. In addition, the overall loss of 2.78 acres of PCEs dispersed along the transmission line corridor will not affect Quino movement within or across Unit 10. Considering that Unit 10 includes 2,514 acres of habitat and the overall Quino critical habitat designation includes 62,125 acres of habitat, the small, dispersed loss of PCEs from construction of the ECO Substation Project will not appreciably diminish the role or function of Unit 10 (Jacumba), or the overall critical habitat designation, to support recovery of Quino. Moreover, SDG&E is committed to providing conservation, in coordination with the Service, to offset impacts to Quino critical habitat.

Effect on Recovery

The proposed project does not conflict with the recovery actions or goals described in the Quino recovery plan (Service 2003). The action area is within the Southeast San Diego Recovery Unit and the Jacumba Occurrence Complex (Service 2003) (Figure 1). Maintaining as much Quino habitat in the Southeast San Diego Recovery Unit and the Jacumba Occurrence Complex as possible is considered necessary for the recovery of this species (Service 2003). However, only 3.62 acres of Quino habitat within the 96,767-acre recovery unit will be impacted by the project. This small loss of habitat is not expected to affect the long-term viability of the 3,349-acre Jacumba Occurrence Complex or fragment Quino habitat within the action area or across the broader recovery unit. SDG&E will provide for the long-term protection and management of similar habitat at a 2:1 ratio, with priority given to the conservation of habitat within the Southeast San Diego Recovery Unit. This conservation action will offset project impacts and support recovery of the species.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any non-Federal actions affecting listed species that are reasonably certain to occur in the action area considered by this opinion.

CONCLUSION

After reviewing the current status of the species, the environmental baseline for the action area, effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of Quino or result in the destruction or adverse modification of designated Quino critical habitat. Our conclusions are based on the following:

1. The project affects a small amount of habitat across the overall range of Quino, and impacts occur over a long, linear area, thus minimizing the potential for significant impacts to individual Quino occurrences and the PCEs of designated Quino critical habitat.

2. The project includes measures to minimize direct mortality of Quino eggs, larvae, pupae, and adults and to avoid and minimize indirect effects.

3. Direct mortality of Quino individuals within the Jacumba Occurrence Complex will be limited and the habitat impacts, including to designated Quino critical habitat, are minor in relation to the overall habitat available in the Southeast San Diego Recovery Unit and Unit 10 (Jacumba) of designated Quino critical habitat; thus, this project does not conflict with the recovery actions or goals described in the Quino recovery plan or diminish the role of designated Quino critical habitat in supporting the recovery of Quino.

4. The habitat loss associated with the proposed project will be offset by preservation and management of occupied Quino habitat at a 2:1 ratio, which will support recovery of the species.

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 attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, 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 7(o)(2) of the Act, taking that is incidental to the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM and/or Corps so that they become binding conditions of any grant or permit issued to SDG&E, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM and/or Corps have a continuing duty to regulate the activity covered by this Incidental Take Statement. If the BLM and/or Corps: 1) fail to assume and implement the terms and conditions; or 2) fail to require SDG&E to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM, Corps, or SDG&E must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

Quantifying the precise number of Quino individuals that may be incidentally taken is not possible because the butterfly's small body size and diapause life stage make the observance or detection of mortality highly unlikely. In addition, numbers will fluctuate on a seasonal and annual basis at any occupied site. As reflected in our effects analysis above, impacts to Quino have been quantified and evaluated based on loss of occupied habitat. The loss of occupied habitat provides a method to quantify the impact to the species when we cannot identify or predict the number of individuals impacted and provides a method to assess the overall impact on recovery. Consistent with our effects analysis and because we cannot reasonably identify or predict the number of Quino individuals likely to be taken, we have established a habitat-based anticipated level of incidental take that, if exceeded, will trigger reinitiation of formal consultation.

Incidental take of Quino is exempted for SDG&E, the BLM, and Corps as follows:

- Death or injury of eggs, larvae, and pupae from crushing, trampling, or removal of host plants during construction within up to 3.62 acres of occupied Quino habitat, defined as any suitable Quino habitat within 0.6 mile (1 kilometer) of a Quino sighting. The amount or extent of incidental take will be exceeded if more than 3.62 acres of occupied Quino habitat, as generally depicted on Figure 2, is impacted as a result of the project.

No take of Quino is anticipated or exempted as a result of project-induced fires during construction.

EFFECT OF THE TAKE

In this biological opinion, we determined that the level of anticipated take is not likely to result in jeopardy to Quino.

REASONABLE AND PRUDENT MEASURES

SDG&E will implement numerous conservation measures as part of the proposed action to minimize the incidental take of Quino. Our evaluation of the proposed action is based on the assumption that the actions as set forth in the "Conservation Measures" section of this biological opinion will be implemented. Any changes to the conservation measures proposed by the BLM, Corps, and SDG&E, or in the conditions under which project activities were evaluated, may constitute a modification of the proposed action. If this modification causes an effect to Quino that was not considered in the biological opinion, reinitiation of formal consultation pursuant to the implementing regulations of section 7(a)(2) of the Act (50 CFR § 402.16) may be warranted. The reasonable and prudent measure outlined below is nondiscretionary. Failure to comply may cause the protective coverage of section 7(o)(2) to lapse. The following reasonable and prudent measure is necessary and appropriate to minimize incidental take.

SDG&E shall monitor and report the impact of project construction on Quino eggs, larvae, and pupae.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, SDG&E must comply with the following term and condition, which implements the reasonable and prudent measure described above and outlines reporting and monitoring requirements. Terms and conditions are non-discretionary. The following term and condition implements the reasonable and prudent measure.

1.1 SDG&E shall provide the CFWO, BLM, and Corps with a report within 30 days of completing habitat removal activities in occupied Quino habitat. The report shall include the acreage of occupied Quino habitat impacted, and information on any incidental observations of Quino larvae (caterpillars) by the biological monitor in areas of occupied Quino habitat affected by construction. The biological monitor must be approved by the CFWO and have knowledge of the biology and ecology of Quino.

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, help implement recovery plans, or to develop information. We recommend the BLM implement the following actions:

1. Periodically re-survey areas around the Jacumba Occurrence Complex and within the project area to help determine whether the current known population expands its range (Service 2003, Recovery Plan Task 6.1).

2. Monitor nonnative species within the Jacumba Occurrence Complex and Unit 10 of designated critical habitat for Quino (Service 2003, Recovery Plan Task 6.3). Implement measures to eliminate nonnative species and restore or improve habitat for Quino within the Jacumba Occurrence Complex, as appropriate, and collect data to evaluate the effectiveness of these measures (Service 2003, Recovery Plan Task 1.7).

REINITIATION NOTICE

This concludes formal consultation on the proposed actions outlined in the initiation request. As provided in 50 CFR § 402.16, 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: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the proposed 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 listed species or critical habitat that was not considered in this opinion; or 4) a species is listed or critical habitat is designated that may be affected by the proposed action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. With regard to 2 above, the CFWO should be notified immediately if construction-related induced fires impact occupied Quino habitat in the action area.

If you have any questions regarding this biological opinion, please contact Jesse Bennett of this office at 760-431-9440, extension 305.

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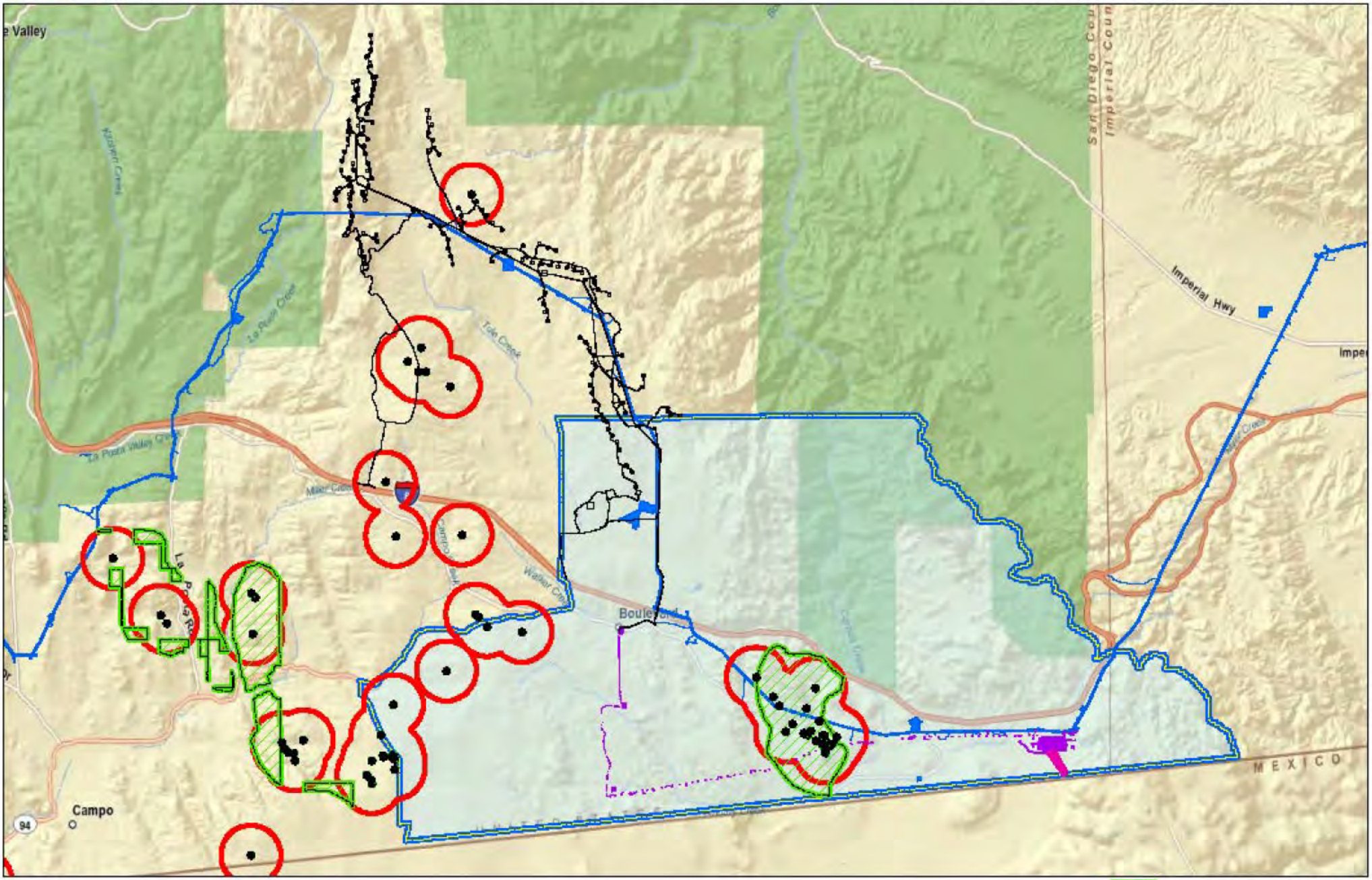
U.S. Fish & Wildlife Service
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Carlsbad, California 92011

Figure 1. Tule, ECO, and Sunrise Powerlink Projects



PRODUCED BY GIS SERVICES
CARLSBAD FIELD OFFICE
GIS CONTACT: ED TURNER
BIOLOGY CONTACT: JESSE BENNETT
MAP DATE: 08/10/11
DATA SOURCE: USFWS, SDGE, and Iberdrola Renewables
IMAGE SOURCE: ESRI Server StreetMap_World_2D
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UTM ZONE 11
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Quino Checkerspot Butterfly Final Critical Habitat
ESJ Project
Tule Project
ECO Project
Sunrise Powerlink
QCB Locations
Quino with 1 Km Buffer
Quino Final Recovery Units

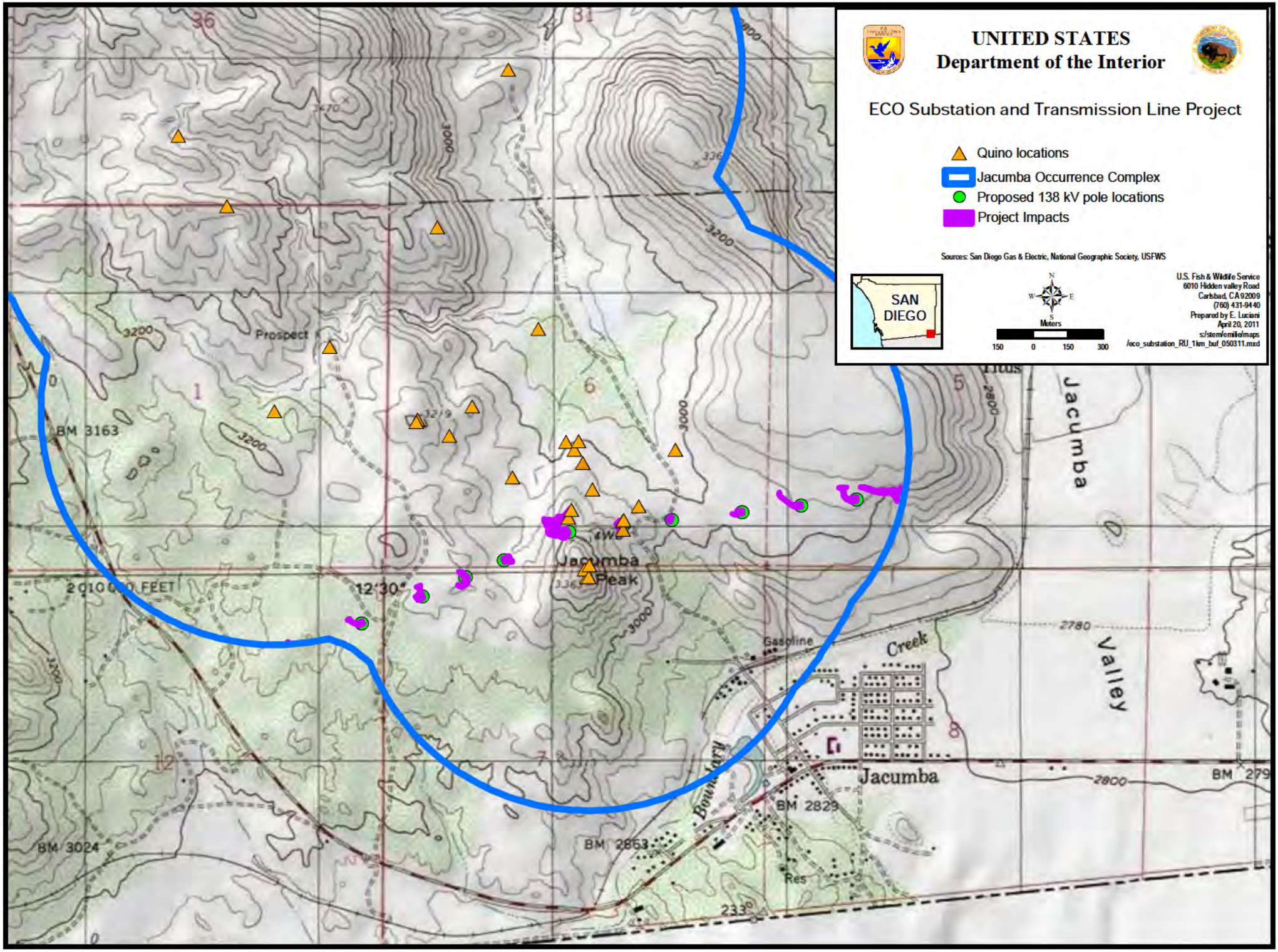

Figure 2. Project Impacts Within Jacumba Occurrence Complex