

**U. S. Fish and Wildlife Service
Biological Opinion
FWS-08B0423-11F0047**

**Sunrise Powerlink Project
2010**

Imperial and San Diego Counties, California



Carlsbad Fish and Wildlife Office
Carlsbad, California

November 10, 2010

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**Acronyms and Abbreviations Used in the
Sunrise Power Line Project
Biological Opinion**

A

ac acre or acres
Act Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)

B

BA Biological Assessment
BAER Burned Area Emergency Response
BLM Bureau of Land Management
BMPs Best Management Practices

C

Cal-IPC California Invasive Plant Council
CDFG California Department of Fish and Game
CEQA California Environmental Quality Act
cm centimeter or centimeters
CNDDDB California Natural Diversity Database
CNF Cleveland National Forest
Corps of Engineers U.S. Army Corps of Engineers
CPUC California Public Utilities Commission
CPSD Consumer Protection and Safety Division

D

DAPTF Declining Amphibian Population Task Force

E

EA Environmental Assessment
ECMSCP East County Multiple Species Conservation Program
EIR Environmental Impact Report
EIS Environmental Impact Statement
EPA Environmental Protection Agency
ESSR Environmental Superior Southern Route

F

FTHL Flat-tail Horned Lizard
flycatcher Southwestern willow flycatcher
ft foot or feet

G

G-CM General Conservation Measures
 GIS Geographic Information System
 gnatcatcher California gnatcatcher

H

ha hectare or hectares
 HCP Habitat Conservation Plan

I

(none identified)

J

(none identified)

K

km kilometer or kilometers

L

LMS Laguna Mountains skipper

M

m meter or meters
 MA Management Area
 MCAS Marine Corps Air Station
 mi mile or miles
 MOU Memorandum of Understanding
 MP mileposts
 mph mile/s per hour
 MRD Modified Route D
 MSCP Multiple Species Conservation Program
 MSHCP Western Riverside County Multiple Species Habitat Conservation Plan

N

NEPA National Environmental Policy Act

O

O&M Operations and Maintenance

P

PAR Property Analysis Record
 PBS Peninsular bighorn sheep
 PCA Pest Control Advisor

Q

Quino Quino Checkerspot Butterfly

R

ROW Right of Way

S

SDG&E San Diego Gas and Electric Company
 Service U.S. Fish and Wildlife Service
 SKR Stephens' kangaroo rat
 SRPL Sunrise Powerlink
 SS-CM Species-Specific Conservation Measures
 SWPPP Storm Water Pollution Prevention Plan

T

toad Arroyo toad

U

USFS U.S. Forest Service
 USFWS U.S. Fish and Wildlife Service

V

vireo least Bell's vireo

W

Wildlife Agencies Service and CDFG, collectively
 WQCB State and/or Regional Water Resources Control Board

X

(none identified)

Y

(none identified)

Z

(none identified)



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

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In Reply Refer To:
FWS-IMP/SDG-08B0423-11F0047

NOV 10 2010

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Subject: Reinitiation of Formal Consultation and Revised Biological and Conference Opinion on the Construction and Long-term Operation and Maintenance Program for the Sunrise Powerlink Project, Imperial and San Diego Counties, California

Dear Ms. Goodro and Mr. Metz:

This memorandum transmits the U.S. Fish and Wildlife Service's (Service) revised biological and conference opinion regarding effects on five federally listed species, one federally proposed species, and their designated and proposed critical habitats, as appropriate, from the proposed construction and long-term operation and maintenance program for the Sunrise Powerlink (SRPL) Project, including a new 188-kilometer (km) [117-mile (mi)] transmission line and related facilities traversing lands under the jurisdiction of the Bureau of Land Management (BLM), U.S. Forest Service (USFS), Marine Corps Air Station (MCAS) Miramar, the State of California (State), the County of San Diego (County), and the City of San Diego and lands in private ownership in Imperial and San Diego counties, California. This revised biological and conference opinion has been prepared in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*), and is the result of reinitiated formal consultation with the BLM, USFS, and the non-Federal agency representative, San Diego Gas and Electric Company (SDG&E), on the proposed transmission line project. With the exception of sections of the January 16, 2009, biological and conference opinion (FWS-2008B0423-2009F0097) incorporated by reference and identified as such within this revised document (Service 2009a), this 2010 biological and conference opinion supersedes the 2009 biological and conference opinion prepared for the proposed SRPL Project.

Section 404 permits under the Clean Water Act are necessary for the proposed SRPL Project. The U.S. Army Corps of Engineers (Corps) has initiated a separate section 7 consultation with



the Service to address potential impacts to listed species in association with issuance of such permits within a narrower scope of analysis than defined by the actions of the BLM and USFS. Thus, this biological and conference opinion does not satisfy the section 7 consultation requirements of the Corps for the proposed SRPL Project. We acknowledge, however, that actions requiring permits from the Corps may overlap with the impacts addressed in this biological and conference opinion. Thus, consultation with the Corps on the proposed SRPL Project is expected to be facilitated and/or streamlined by referencing this broader consultation.

During the course of the original consultation for the proposed SRPL Project, SDG&E committed to implement *General and Species-Specific Conservation Measures* to avoid, minimize, and offset the impacts of this project on endangered and threatened species and their designated and proposed critical habitats. These measures included conducting endangered and threatened species surveys along the final selected right-of-way (ROW) and implementing specific avoidance and minimization measures to reduce impacts to listed species. SDG&E has implemented the pre-construction measures committed to and identified in the 2009 biological and conference opinion, which has minimized the overall impacts to listed species and reduced the anticipated amount and extent of incidental take of the listed animal species addressed by the 2009 opinion.

In addition, SDG&E has provided additional conservation to offset the impacts associated with the long-term operation and maintenance (O&M) program for the SRPL Project and provided information to better define annual habitat losses that are anticipated from routine clearing and grading and other O&M activities. Thus, O&M activities are fully addressed by this reinitiated consultation and revised biological and conference opinion.

Finally, as with the original consultation on this project, your request for reinitiation of consultation did not identify any projects that should be considered interrelated or interdependent actions to the proposed SRPL Project. We concurred with your original determination and have reviewed supplemental information submitted by SDG&E (Sean Skaggs, pers. comm. to Karen Goebel 2010) during this reinitiated consultation to clarify this issue. As with the 2009 biological and conference opinion, and confirmed by the supplement information presented, we have not identified any interrelated or interdependent actions that should be considered within this revised biological and conference opinion.

We received your request to reinitiate formal section 7 consultation on the proposed SRPL Project on September 21, 2010, via electronic mail (email). Your consultation request and the accompanying supplemental assessment submitted by SDG&E provided information to:

- address the re-instatement of the flat-tailed horned lizard (*Phrynosoma mcallii*, "FTHL") to federally proposed status (75 FR 9377) and the known occurrence of this species within the project's action area;

- address the designation of final critical habitat for the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*, “Quino”) (74 FR 28776) and Peninsular bighorn sheep (*Ovis canadensis nelsoni*, “PBS”) (74 FR 17288);
- address the proposal to designate critical habitat for the federally endangered arroyo toad [*Anaxyrus californicus* (*B. microscaphus* c.), “arroyo toad”] (74 FR 52612) within the project’s action area,
- reflect changes in project minimizations measures related to PBS; and
- reflect changes to the project and all species, including the federally threatened coastal California gnatcatcher (*Polioptila californica californica*, “gnatcatcher”), addressed by this consultation due to 1) completion of pre-construction conservation measures, including pre-construction surveys and implementation of project design and siting measures to reduce project impacts, and 2) agreement with our agency and the California Department of Fish and Game (collectively the “Wildlife Agencies”) on significant habitat acquisitions and other conservation measures to minimize and offset impacts to federally and State-listed species over the life of the project.

Pre-construction rare plant surveys (RECON 2009a) determined that the federally threatened San Diego thornmint (*Acanthomintha ilicifolia*) was not located within the proposed impact areas of the SRPL Project. In our 2009 biological and conference opinion, we referred to a known occurrence of San Diego thornmint near mile post 116 (MP-116). Based on information provided by SDG&E, (D. Haines, pers. comm. 2010), two occurrences of San Diego thornmint are located south of MP-116 and northeast, but outside of, an existing access road to transmission line 369 (TL-369). TL-369 will be reconductored as part of the SRPL Project.

SDG&E will implement several General Conservation Measures (G-CM) as part of the SRPL Project, which will ensure direct impacts to known San Diego thornmint occurrences are avoided. These measures are described in the revised biological and conference opinion and include: G-CM-1, which addresses biological monitoring during construction; G-CM-6, which addresses area limits for project construction activities and use of existing access roads; G-CM-8, which addresses reconductoring activities specifically; and G-CM-33, which addresses the use of flagging and fencing to designate avoidance areas for listed and proposed plant species.

In addition, SDG&E will implement several other conservation measures as part of the SRPL Project that will ensure indirect effects to San Diego thornmint occurrences, during both construction and O&M activities, are avoided. These measures include G-CM-20, which addresses weed control; G-CM-24 which identifies dust reduction procedures; G-CM-2 and 22, which identify erosion control measures and Best Management Practices (BMPs); and G-CM-4, G-CM-9, and G-CM-35 - G-CM-38, which address human disturbance (e.g., personnel training, prohibition on littering, collecting of plants, and harming wildlife).

Based on the updated survey information and the above assessment, we have determined that the SRPL Project is “not likely to adversely affect” (NLAA) the San Diego thornmint. Although this species was addressed in the 2009 biological and conference opinion, it has been excluded from evaluation in this revised biological and conference opinion due to our current NLAA determination.

Pre-construction rare plant surveys also confirmed that the federally endangered San Bernardino bluegrass (*Poa atropurpurea*) and willow monardella [*Monardella (linoides* subsp.) *viminea*] are absent from the action area of the SRPL Project; thus, with this reinitiated consultation, we confirm our 2009 determinations that the SRPL Project will have “no effect” on the San Bernardino bluegrass or willow monardella. Also consistent with our 2009 determinations, we reconfirm that the SRPL Project will not affect designated critical habitat for the San Diego thornmint, San Bernardino bluegrass, or willow monardella.

Based on information provided by SDG&E on December 3, 2008, and our review of other available information, including known species occurrence data, we concurred with NLAA determinations for the federally endangered Laguna Mountains skipper (*Pyrgus ruralis lagunae*; “LMS”) and southwestern willow flycatcher (*Empidonax traillii extimus*; “flycatcher”). Pre-construction surveys for flycatcher (RECON 2009b, 2010a) determined that the project will impact suitable habitat [< 2 hectares (ha) (< 5 acres (ac))] for flycatchers, but none of this habitat is occupied. Thus, we confirm that our NLAA determination for the flycatcher is still valid.

The nearest LMS occurrence is over 8 km (5 mi) from the project area, and based on our knowledge of the habitat requirements for this species, no further pre-construction surveys were recommended. With this reinitiated consultation, we conclude that the SRPL Project will have no effect on LMS. No designated critical habitat for LMS will be impacted by the SRPL Project.

Similarly, as a result of our original consultation, we determined that the proposed SRPL Project will not impact the Stephens’ kangaroo rat (*Dipodomys stephensi*; “SKR”) because the project is located outside the known range of the SKR. Pre-construction surveys (SJM Biological Consultants, Inc. and Chambers Group, Inc. 2009) confirmed that SKR are not present within the ROW or other impact areas of the SRPL Project; thus, we reconfirm our no effect determination for the SKR. Critical habitat for the SKR has not been proposed or designated, so none will be affected by the SRPL Project.

Finally, we reconfirm our original determination that the proposed SRPL Project will not affect critical habitat for the flycatcher or federally endangered least Bell’s vireo (*Vireo bellii pusillus*, “vireo”) because no critical habitat for these species will be impacted by the SRPL Project.

Based on the above information and revised determinations, five federally endangered or threatened species, one federally proposed species, and their designated or proposed critical habitat, as appropriate, are evaluated within this revised biological and conference opinion as follows:

- the federally endangered Quino, PBS, vireo, and arroyo toad;
- the federally threatened gnatcatcher;
- the federally proposed FTHL;
- designated critical habitat for Quino, PBS, and gnatcatcher; and
- proposed critical habitat for the arroyo toad.

This biological and conference opinion is based on information provided in the:

(1) project file for the Service's *Biological and Conference Opinion on the Construction and Long-term Operation and Maintenance Program for the Sunrise Powerlink Project, Imperial and San Diego Counties, California (FWS-2008B0423-2009F0097)*, dated January 16, 2009;

(2) *San Diego Gas and Electric Company Sunrise Powerlink Project, Imperial and San Diego Counties, California, Supplemental Assessment, FWS2008B0423-2009F0097*, dated September 2010 (Supplemental Assessment; SDG&E 2010a);

(3) *San Diego Gas and Electric Company Sunrise Powerlink Project, Imperial and San Diego Counties, California, Pre-Construction Consultation Report, FWS2008B0423-2009F0097*, dated May 2010 (Pre-construction Consultation Report; SDG&E 2010b);

(4) *San Diego Gas and Electric Company Sunrise Powerlink Project, Imperial and San Diego Counties, California, Habitat Acquisition Plan and Habitat Management Plan*, dated September 21, 2010 (HAP and HMP; SDG&E 2010c)¹;

(5) *Sunrise Powerlink Restoration Plan for Sensitive Vegetation Communities in Temporary Impact Areas*, dated November 5, 2010 (Habitat Restoration Plan; Appendix 1).

(5) *Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS)* dated October 2008 [California Public Utilities Commission (CPUC) and BLM 2008];

(6) *Sunrise Powerlink Project Project Modification Report*, dated May 14, 2010 (PMR; SDG&E 2010d); and

(7) numerous electronic mails and telephone conversations between the Service, SDG&E, California Public Utilities Commission (CPUC), BLM, USFS, California Department of Fish and Game (CDFG), the City of San Diego, and the County of San Diego and various other documents as cited herein.

¹ The Habitat Acquisition Plan and Habitat Management Plan were presented in one document, but they are referred to separately throughout this biological and conference opinion.

CONSULTATION HISTORY

The history for the original consultation on the SRPL Project up to issuance of the 2009 biological and conference opinion is hereby incorporated by reference.

The original biological and conference opinion was signed on January 16, 2009. We received the first draft HAP in June 2009, and a revised draft HAP in February 2010. Following our receipt of the February 2010 HAP, we initiated a series of meetings regarding proposed habitat acquisition with SDG&E and other affected agencies and local jurisdictions. From that point on, we spoke at least weekly with SDG&E and about monthly with BLM to discuss project changes and track the progress of SDG&E's implementation of conservation measures. We received the PMR on May 19, 2010, the Pre-construction Consultation Report on June 4, 2010, the Supplemental Assessment on September 16, 2010, and the final HAP and HMP on September 22, 2010.

The request to reinitiate formal section 7 consultation on the proposed SRPL Project was received on September 21, 2010. The following plans were committed by SDG&E to be prepared prior to initiation of construction and were provided to the Wildlife Agencies for review and approval prior to or during the reinitiated consultation period:

- Sunrise Powerlink Transmission Line Project Raven Control Plan (Raven Control Plan; received October 25, 2010; Appendix 2),
- HAP, HMP, and Habitat Restoration Plan;
- *2009/2010 Weed Control Plan for the Environmentally Superior Southern Route of the SDG&E Sunrise Powerlink Project prepared by RECON* (Weed Control Plan; received October 10, 2010; Appendix 3);
- *Draft 2010 Arroyo Toad Survey Relocation Plan for the SDG&E Sunrise Powerlink Project prepared by RECON* (Arroyo Toad Translocation Plan; received November 4, 2010; Appendix 4), and
- *Peninsular Bighorn Sheep Construction Monitoring Plan, San Diego Gas & Electric, Sunrise Powerlink Project, Imperial and San Diego Counties, California* (PBS Construction Monitoring Plan, received October 15, 2010; Appendix 5).

A draft biological and conference opinion was provided to the BLM, USFS, and SDG&E on November 8, 2010. Comments from SDG&E, the BLM and USFS were received November 9, 2010 and incorporated into this final biological and conference opinion.

The complete project file for this reinitiated consultation is on file at the Carlsbad Fish and Wildlife Office (CFWO).

PROJECT DESCRIPTION

The proposed action is the issuance of a ROW permit by the BLM and a Special Use Authorization by the USFS to SDG&E to facilitate the construction and O&M activities of the SRPL Project through Federal lands in accordance with the Federal Land Policy Management Act of 1976 (43 U.S.C. 1761). The SRPL Project includes the proposed transmission line ROW, the Final Environmentally Superior Southern Route (FESSR), and related facilities, as identified in the PMR and the Final EIR/EIS for the project prepared by the CPUC, as the lead State agency under California Environmental Quality Act (CEQA), and the BLM as the lead Federal agency under National Environmental Policy Act (NEPA), and issued in October 2008.

Project Overview

The SRPL is a new 500 kilovolt (kV) and 230 kV transmission line that SDG&E will build, operate, and maintain in San Diego and Imperial counties, California. The line will extend for approximately 188 km (117 mi) between an existing SDG&E substation south of the City of El Centro in Imperial County to an existing SDG&E substation on the northeast edge of MCAS Miramar near the City of Poway in San Diego County. Construction is projected to begin in late 2010 and continue for approximately 30 months.

The construction phase of the SRPL Project will entail establishment of 443 towers and poles, a new substation (where the line converts from 500 kV to 230 kV), permanent access roads, maintenance areas at structure sites, and permanent tower staging access areas (Tower Staging Access Pads or TSAPs) for helicopters. The construction phase also has several temporary components (construction yards, work areas at structure sites, wire stringing areas, guard areas, and some temporary access roads). The permanent components will be operated and maintained by SDG&E. The temporary components will be removed after construction and the sites restored to pre-construction conditions. During the construction phase, SDG&E will also upgrade the three existing 69 kV lines connected to the existing Sycamore Canyon Substation and make system upgrades to five existing facilities: four substations and one switching yard.

Table 1 identifies the components of the SRPL Project and provides a brief description of each component. The information about the components is from the PMR and Final EIR/EIS.

To provide a frame of reference, the SRPL Project alignment has been divided into five links and assigned mileposts. The links and mileposts are numbered in ascending order, beginning in Imperial County and proceeding west to the Sycamore Canyon Substation in San Diego County. The SRPL Project also includes construction of a new 30.6 ha (75.6-ac) substation (Suncrest Substation), reconductoring (replacing cables or wires on a transmission line) of some of the existing transmission lines, and modifications to existing substations. Table 2 summarizes the number, type, and the amount of permanent and temporary ground disturbance estimated to occur during construction within each link.

Table 1. Permanent and Temporary Components of the SRPL Project

Component	Description
<i>Permanent Components</i>	<i>Established during construction or pre-existing; part of O&M afterwards.</i>
Structures	443 lattice towers, poles, substations, substation dead-ends, and risers.
Structure Footings	Concrete foundations (ground-anchors) for structures; included within each structure pad area.
Structure Pad Area	100 ft x 100 ft area at each structure. For structures constructed by conventional methods, the structure pad area is included in the temporary area.
Maintenance Area	75 ft x 35 ft area adjacent to or overlapping structure pad area at sites constructed by conventional methods. Used for storage and to provide access during maintenance.
Tower Staging Area Pad (TSAP)	100-ft diameter equipment loading/work staging area for structures constructed by helicopters. If structure is within 300 ft of an existing access road, TSAP may not be required.
Access Roads	Approximately 37 km (23 mi) of new permanent access roads and 21 km (13 mi) of improved existing permanent access roads.
500 kV/230 kV Substations	One new substation (Suncrest); two existing substations (Sycamore Canyon and Imperial Valley).
<i>Temporary Components</i>	<i>Established during construction; restored to pre-construction conditions afterwards.</i>
Work Areas	200 ft x 200 ft or 200 ft x 400 ft areas encompassing a structure pad area. Used to establish tower foundations, complete conventional tower assembly and erection, and store and maintain equipment for tower assembly. Not required for structures constructed by helicopter.
Stringing Areas	Areas where wire stringing and tensioning equipment is used and stored; also used for temporary storage for wire/conductor supplies.
Guard Structures	Three vertical poles with cross arms, used to prevent wires from contacting the ground during stringing; used at road crossings. Bucket trucks also can serve as guard structures.
Construction Yards	19 construction yards, ranging in size from 2 to 40 ha (5 to 100 ac). Used for equipment and construction material storage, helicopter access and operations, field offices, and other facilities.
Access Roads	Approximately 43 km (27 mi) of new and 34 km (21 mi) of improved access roads.
<i>69 kV Reconductoring</i>	<i>Conducted during construction; also periodically during O&M.</i>
Insulator and Conductor Upgrades	17 existing poles replaced; pole-top insulators and conductors replaced on other poles. Entails temporary work areas and stringing areas. No permanent ground disturbance. Two lines between Sycamore Canyon Substation and Pomerado Substation; one line each between Sycamore Canyon and the Scripps and Elliott substations.
<i>Substation Upgrades</i>	<i>Conducted during construction; also periodically during O&M.</i>
Substation and Switchyard Upgrades	Installation of transformers, dead-end structures, circuit breakers, disconnect switches, bus support structures, protection relay equipment, communication interface equipment, capacitor banks, and related equipment as needed within the fenced area of existing facilities and/or on other already disturbed areas associated with the facilities. Will occur at Imperial Valley Substation, Sycamore Canyon Substation, Encina Switchyard, South Bay Substation, and San Luis Rey Substation.

Table 2. Summary of SRPL Project Components and Estimated Ground Disturbance During Construction by Project Link

Link and Milepost	Feature Type	Project (based on May 2010 PMR)		
		Number or Miles	Permanent Ground Disturbance (acres)	Temporary Ground Disturbance (acres)
ALL	Structures ¹	441	106.10	119.98
	Access Roads ²	51.12	75.53	6.98
	TSAPs ³	162	29.16	0.00
	String Area Sites	78	0.00	128.42
	Construction Yards	19	0.00	428.96
	Guard Areas		0.00	0.78
	Cut/Fill/Grading		11.95	0.00
	Suncrest Substation ⁴	--	75.66	0.00
	Replacement Poles ⁵	17	--	--
	Total		298.40	685.12
Link 1 500 kV Desert Portion MP-0.0-MP-53.5	Structures ¹	200	50.52	80.77
	Access Roads ²	22.71	37.65	2.24
	TSAPs ³	57	10.26	0.00
	Construction Yards	9	0.00	226.53
	String Site Areas	36	0.00	67.34
	Guard Areas		0.00	0.29
	Cut/Fill/Grading		4.37	0.00
	Total		102.80	377.18
Link 2 500 kV Forest Portion ⁶ MP-53.5-MP-88.8	Structures ¹	138	32.79	30.48
	Access Roads ²	21.39	30.19	0.86
	TSAPs ³	64	11.52	0.00
	Construction Yards	5	0.00	94.34
	String Site Areas	26	0.00	47.49
	Guard Areas		0.00	0.28
	Cut/Fill/Grading		5.09	0.00
	Total		79.58	173.45
Link 3 MP-88.8-MP-89.3	Suncrest Pad Plus ⁴	-- ⁴	75.66	0.00
	Access Roads	0.01	0.00	0.03
	Construction Yards	1	0.00	10.78
	Total		75.66	10.81

Link and Milepost	Feature Type	Project (based on May 2010 PMR)		
		Number or Miles	Permanent Ground Disturbance (acres)	Temporary Ground Disturbance (acres)
Link 4 230 kV Underground MP-92.0-MP-98.2	Structures ¹	0	0.00	0.32
	Access Roads ²	0.97	2.39	0.02
	TSAPs ³	0	0.00	0.00
	Construction Yards	1	0.00	38.94
	String Site Areas	2	0.00	1.35
	Guard Areas		0.00	0.00
	Cut/Fill/Grading		1.18	0.00
	Total		3.58	40.62
Link 5 230kV Overhead MP-89.3-MP-92.0 MP-98.2-MP-117.2	Structures ¹	100	22.79	4.84
	Access Roads ²	6.04	5.30	3.84
	TSAPs ³	41	7.38	0.00
	Construction Yards	3	0.00	58.37
	String Site Areas	14	0.00	9.61
	Guard Areas		0.00	0.21
	Cut/Fill/Grading		1.31	0.00
	Total		36.79	76.87
Reconductoring	Replacement Poles	17	--	--
	String Site Areas		0.00	2.63
	Work Areas		0.00	3.56
	Other		0.00	0.00
	Total		0.00	6.19

Notes

- 1 Structures include lattice towers, poles, substation deadends, and risers.
- 2 Access Roads = new access roads to be constructed and existing roads that require improvement.
- 3 TSAP = tower staging access pads to support helicopter construction.
- 4 The Suncrest Substation Pad includes 3 structures.
- 5 Replacement poles are for the 69kV reconductor projects associated with the system upgrades
- 6 This portion includes privately owned lands as well as USFS owned and operated lands

Construction Links***Link 1***

The 61-meters (m) [200-feet (ft)] ROW easement in this 86.7-km (53.9-mi) link will parallel the existing Southwest Powerlink (SWPL) ROW for approximately 48 km (30 mi) from the Imperial Valley Substation in Imperial County to approximately 1.6 km (1.0 mi) west of the Imperial

Valley-San Diego County border, just a few miles north of the Mexican border. Link 1 will then continue west/northwest until terminating at MP-53.9, where it enters the Cleveland National Forest. The following provides a more detailed description of the Link 1 route.

From the Imperial Valley Substation, which is located just west of the intersection of Mandrapa Road and Lyons Road and 6 km (4 mi) southwest of El Centro, the ROW will head northwest for approximately 18 km (11 mi) through mostly BLM-managed land with a very small number of private parcels interspersed near MP-1, MP-2, and MP-8. The ROW will cross Interstate 8 (I-8), County Highway S80 (Evan Hewes Highway), and the San Diego and Arizona Eastern Railroad (SD & AE RR), where it will turn west at MP-11, 1.6 km (1.0 mi) west of Plaster City. The ROW will follow the SWPL west on BLM-managed land for approximately 5.6 km (3.5 mi) and then head west-southwest for approximately 8 km (5 mi). It will then turn southwest for approximately 16 km (10 mi), passing through more BLM-managed lands and a limited number of private parcels near MP-20.5 to MP-22. The ROW will cross both County Route S2 and the SD & AE RR at MP-22.5, all the while running parallel to the existing SWPL.

Just past the railroad crossing, at approximately MP-22.5, the ROW will enter an area known as the Mountain Spring Grade Subset where I-8 east and west lanes split to create an area known as the I-8 Island. This ROW subset crosses mostly BLM-managed lands for approximately 10 km (6 mi) to MP-28.5 and is adjacent to the Jacumba Federal Wilderness Area, a BLM land use designation. Much of this area will require construction by helicopter. From MP-28.5 to MP-30, private parcels will be traversed southeast and parallel to I-8.

The line continues to follow the SWPL ROW for approximately 8 km (5 mi) and then diverges north-northwest away from the SWPL ROW for approximately 21 km (13 mi), crossing mostly BLM-managed lands and a few interspersed private parcels. Specifically, the private lands to be crossed are near MP-30 to MP-31, MP-33 to MP-41.5, MP-44, and MP-47 to MP-47.5. The State land to be crossed in this area is near MP-41 to MP-42.

Link 2

Link 2 begins at MP-53.9 and terminates about 11 km (7 mi) east of the community of Alpine near MP-90. In this link, the SRPL ROW alignment is 61-m (200-ft) wide and contains a single-circuit 500 kV transmission line that continues through the Cleveland National Forest, turning south-southwest, and traverses mostly USFS lands. Within this link, there are a few interspersed BLM-managed lands, City lands, and private properties. Specifically, the BLM-managed lands to be traversed are near MP-62 to MP-65; the private lands to be traversed are near MP-62 to MP-63 and MP-65 to MP-66.

From MP-66 to MP-78, the 61.0-m-wide (200.0-ft-wide) SRPL ROW generally runs in a westerly direction through BLM-managed and private lands, south of the Hauser Federal Wilderness Area, and follows an existing 69 kV line ROW. Specifically, the BLM-managed lands to be traversed are near MP-69 to MP-71 and MP-72.5 to MP-79.5; this portion of the ROW will primarily involve helicopter construction. City lands to be traversed are near MP-77 to MP-77.5. The private lands to be traversed are near MP-66 to MP-69 and MP-71 to MP-72.5.

The ROW will pass immediately east of the existing SDG&E Barrett Substation and will then head in a northerly direction following an existing 69 kV line ROW west of Big Potrero Truck Trail.

From MP-78 to MP-91, the ROW will continue to traverse the Cleveland National Forest, City lands, private lands, and minimal BLM-managed lands, heading in a general northeast direction until it reaches the location for a proposed new substation, identified in the PMR as the Suncrest Substation. Specifically, the private lands to be traversed are near MP-78, MP-82 to MP-82.5, MP-83 to MP-84, MP-87 to MP-88, and at the Suncrest Substation. City lands to be traversed are located between MP-80 and MP-82. The only BLM-managed lands to be traversed in this area are near MP-78 to MP-79.5.

Link 3 (Suncrest Substation)

This substation will be located on private land west of Japatul Valley Road in Alpine, California. The substation fence line will enclose approximately 16.0 ha (40.0 ac). An additional 14.0 ha (36.0 ac) will be cleared and graded around the substation for the access road, drainage, and buffer. In total, approximately 61.0 ha (76.0 ac) will be permanently disturbed to construct the substation pad and associated features. Access to the substation site is from an existing private road called Bell Bluff Truck Trail, most of which is unimproved. The access road length is approximately 5.0 km (2.8 mi) from Japatul Valley Road to the Suncrest Substation. The proposed 500 kV transmission line will terminate at the substation. Two 230 kV transmission lines within a 91.0-m-wide (300.0-ft-wide) ROW will exit the substation overhead on a common double-circuit structure heading northwest to Sycamore Canyon Substation.

Link 4

Link 4 is primarily underground. Link 4 begins at MP-92, where the double-circuit 230 kV line transitions from overhead to underground. The underground ROW will be 18.0-m-wide (60.0-ft-wide) (dependent on terrain) or in a franchise position in a public road ROW. Once underground, the line will traverse a private driveway, just west of Star Valley Road, and continue to Alpine Boulevard. The route will then continue west underground within the Alpine Boulevard ROW in a franchise position. It will remain underground in Alpine Boulevard and then cross under I-8 west of Peutz Valley until MP-98.5, where the underground ROW will transition back to overhead.

The private lands to be traversed in this area are near MP-92 to MP-92.5 and MP-97.5 to MP-98.5. Link 4 ends where the transmission line transitions back to an overhead configuration at MP-98.5, crossing mostly private lands.

Link 5

Within Link 5, the SRPL Project's double-circuit 230 kV line will be contained within a new 91.0-m (300.0-ft) ROW and an existing 30.0-m (100.0-ft) ROW. In this area, the transmission line crosses BLM, DoD, USFS, County of San Diego, City of San Diego, and San Diego County Water Authority (SDCWA) lands in a general northwesterly direction. There are two separate sections of the SRPL Project that are part of Link 5. The first portion begins at the Suncrest

Substation and crosses through property owned by SDG&E, private land, and USFS land for approximately 5.0 km (3.0 mi) from MP-89.5 to MP-92. Specifically, the portions of Link 5 that pass through private lands are near MP-89.5 to MP-90 and MP-91.5 to MP-92.

The second section of Link 5 begins at MP-98.5 and terminates at the Sycamore Canyon Substation at MP-117, traveling in a general northwest direction through private, City, USFS, BLM, County, SDCWA, and MCAS Miramar lands. This portion of Link 5 traverses City of San Diego lands from MP-89.5 to MP-101.5; USFS lands for approximately 1.6 km (1.0 mile) from MP101.5 to MP102.5; BLM-managed land for approximately 7.0 km (4.5 mi) from MP-102.5 to MP-106 with private lands interspersed; private lands for approximately 16 km (10 mi) from MP-106 to MP-116, including a crossing of County lands at MP-110.5; and MCAS Miramar lands at the northern boundary for approximately 3.2 km (2.0 mi) from MP-115 to the Sycamore Canyon Substation at MP-117. At MP-112, the line transitions from the 91-m (300-ft) ROW to an existing SDG&E 30-m-wide (100-ft-wide) ROW from Highway 67 to the Sycamore Canyon Substation.

Reconductoring and Facility Upgrades

Several system upgrades are required to allow for the full use of the proposed new transmission line. These upgrades occur within SDG&E's existing ROW in fairly urbanized areas of coastal San Diego or within largely undeveloped land within MCAS Miramar. They consist of the expansion and reconductoring of existing utility infrastructure and modification of existing substations.

Sycamore-Pomerado 69 kV line (TL-6915/6924)

The two Sycamore-Pomerado 69 kV lines (TL-6915/6924) require reconductoring. The modification to these lines will include replacing an existing conductor with a higher capacity conductor; replacing insulators, circuit breakers, and related equipment at the Pomerado Substation; replacing four existing transmission poles, which will require two new wire pull sites and the removal of the existing poles and foundations; and replacing hardware and insulators on existing poles. No new access roads or widening of existing roads will be required. All construction activities for this segment will take place on or adjacent to the existing poles, from existing access roads, or on previously disturbed areas within the existing ROW easements.

Sycamore-Scripps 69 kV Line (TL-6916)

The existing Sycamore-Scripps 69 kV line (TL-6916) requires reconductoring. The reconductoring will be installed on the existing overhead transmission structures between the Sycamore Canyon Substation and the Scripps Substation and will entail the replacement of the conductor. The reconductoring will require the replacement of two cable poles. The modification will include the replacement of transmission conductors along a 10.3-km (6.4-mi) section of existing ROW, as well as the addition of temporary wire stringing sites. In addition, the modification will include upgrading two existing underground portions of the Sycamore Canyon-Scripps 69 kV circuit, replacing porcelain insulators with polymer insulators, replacing the existing aluminum-clad steel-reinforced/aluminum wire (ACSR/AW) overhead conductor

with new ACSR/AW conductor, and installing lights on structures per Federal Aviation Administration (FAA) requirements.

Sycamore-Elliott 69 kV line (TL-639)

SDG&E will reconductor the 69 kV line (TL-639) from the Elliott Substation in the Community of Tierrasanta to the Sycamore Canyon Substation northeast of MCAS Miramar near the City of Poway. The segment of the transmission line proposed for reconductoring runs from northeast Tierrasanta, through west Mission Trails Regional Park (MTRP), over State Highway 52, and through east MCAS Miramar's Camp Elliott before ending at the Sycamore Canyon Substation south of Beeler Canyon Road. The modification of this portion of the SRPL Project entails replacing transmission conductors on poles within approximately 13 km (8 mi) of existing ROW, replacing 17 wooden poles with 18 wooden poles, adding temporary wire stringing sites along the ROW, and replacing 74 m (244 ft) of existing underground cable at Sycamore Canyon Substation. The underground cable will be pulled through existing duct banks; therefore, no trenching will be required. Lights will be installed on 15 structures, per FAA requirements. No new access roads or widening of existing access roads will be required; however, the work will require minor improvements on sections of the existing access road. Improvements will include scarifying and recompacting the road, constructing waterbars every 12 m (40 ft) to direct water off the road to prevent erosion, and removing debris where slopes have encroached on the road. There will also be minor temporary impacts to vegetation as a result of construction; however, the area will be restored upon completion of construction activities.

Imperial Valley Substation

The existing Imperial Valley Substation is located northwest of Mexicali, Mexico at MP-0 of the transmission line. This substation will be modified to accommodate termination of one new 500 kV transmission line. Modifications to this substation will include the installation of the following facilities: seven line and bus dead-end structures, five 500 kV circuit breakers, seven 500 kV disconnect switches, communication interfaces, and primary back-up metering equipment, as required. No additional lighting will be installed at this substation. The expansion of the Imperial Valley Substation will occur within the existing fence line of the substation property, which is considered a previously disturbed area.

Sycamore Canyon Substation

The existing Sycamore Canyon Substation is on the northeastern side of MCAS Miramar near the City of Poway. This substation will be modified to accommodate the termination of two new 230 kV transmission circuits. Part of this modification will include installation of a third 230/69 kV transformer. In addition, the modification will require the installation of two line dead-end structures, four 230 kV circuit breakers, eight 230 kV disconnect switches, other bus support structures, required protection relay panels, and communication interface equipment. No additional lighting will be installed at this substation. The expansion of the Sycamore Canyon Substation will occur within the existing fence line of the substation property, which is considered a previously disturbed area.

Encina Switchyard

The existing Encina Switchyard is located north of Cannon Road, between Interstate 5 and Carlsbad Boulevard. The scope of work for the Encina Switchyard facility will include an upgrade of the 138 kV switchyard and expansion of the 230 kV switchyard that will convert the facility into a substation. The existing facilities and equipment in the 138 kV switchyard will be removed and relocated within the switchyard area. The 230 kV switchyard will be expanded to accommodate the installation of gas circuit breakers as well as the installation and termination of a new 230/138 kV transformer. The new 230/138 kV transformer will electrically connect the two switchyards. In addition, the transformer will balance power flowing on either the 230 kV or the 138 kV transmission system. The expansion of the Encina Switchyard will mostly occur within the existing fence line of the switchyard property, which is considered a previously disturbed area. Some construction will be performed in a pre-disturbed area between the two existing switchyards.

South Bay Substation

The existing South Bay Substation is located near Bay Boulevard in southeastern San Diego. The scope of work at the South Bay Substation will include installing a 69 kV shunt capacitor to provide system voltage support to the SRPL Project and alleviate reliability and voltage stability concerns associated with the decommissioning of the South Bay Power Plant. Other associated equipment that will be installed at the substation includes one 69 kV standard profile switch rack, one 69 kV circuit breaker, one 69 kV capacitor bank with associated reactors and surge arrestors, one disconnect switch, and the required protection relay panels. No additional lighting will be installed at the substation. The modifications to the South Bay Substation will occur within the existing fence line of the substation property, which is considered a previously disturbed area.

San Luis Rey Substation

The existing San Luis Rey Substation is located along El Camino Real in Oceanside, California. The modifications to the San Luis Rey Substation will include installation of a third 230/69 kV transformer and a 230 kV capacitor with associated surge arrestors and current limiting reactors. Other equipment to be installed will include 230 kV gas circuit breakers, two 69 kV breakers, four 69 kV disconnect switches, two dead-end structures, and required protection relay panels and communication interfaces. No additional lighting will be installed at the substation. All construction activities at the San Luis Rey Substation will occur within the existing substation property fence line, which is considered a previously disturbed area.

Project Activities***Construction***

The primary construction activities and areas of potential impact will be confined to structure sites, access roads, maintenance areas, wire stringing sites, TSAPs, construction yards, and work areas.

Labor and Equipment

The SRPL Project will be constructed primarily by contract personnel with SDG&E responsible for project administration and construction review. However, SDG&E may also use its own crews for certain portions of the work, as the schedule may require. It is anticipated that multiple contractors will be working concurrently on the separate segments of SRPL in order to meet the projected in-service date of third quarter 2012. Construction will commence as early as the fourth quarter 2010 and conclude before third quarter 2012.

Construction Yards

Construction of the transmission lines will begin with the establishment of staging areas, which will be required for storing materials, construction equipment, vehicles, and, in some cases, as a show-up yard for the construction crews. Vegetation will be cleared from all staging areas. In some areas, the staging area may need to be scraped by a bulldozer and a temporary layer of rock laid to provide an all-weather surface. Unless otherwise directed by the landowner, the rock will be removed from the staging area upon completion of construction and the area will be restored as required by the CPUC and BLM. All staging areas will be fenced for security. Staging areas will only temporarily impact native vegetation because each will be restored and re-vegetated with native vegetation.

Access Roads

Construction of the new 500 kV and 230 kV transmission structures will require access for construction crews, materials, and equipment where allowed. Similarly, construction of other SRPL Project components such as laydown areas and fly yards will require vehicle access. The substation will require all-weather (paved) vehicle access. New access roads or access spur roads will be constructed using a bulldozer or grader, followed by a roller to compact and smooth the ground. Front-end loaders will be used to move the soil locally or off site. Typically for transmission access roads, laydown areas, and fly yards, 4-m-wide (14-ft-wide) sections at straight portions of road and 5 to 6-m-wide (16- to 20-ft-wide) sections at curves will be required to facilitate safe movement of equipment and vehicles. Typically for the substation access road, 10-m-wide (32-ft-wide) sections of road will be required to facilitate safe movement of equipment and vehicles.

After SRPL Project construction, existing and new permanent access roads, as well as TSAPs will be used by maintenance crews for inspection and maintenance activities. Temporary construction roads not required for future maintenance access will be removed and restored after construction in the area is complete.

Pads (i.e., Structure Sites)

The structures located in BLM-managed areas will include both temporary and permanent workspaces. A temporary 61-m by 61-m (200-ft by 200-ft) or 61-m by 122-m (200-ft by 400-ft) work area located within the ROW will be used for work space during construction. These temporary work area impacts will be minimized to the maximum extent possible. The temporary work areas will be restored and revegetated at the completion of construction. Within the temporary work area, an area measuring 30-m by 30-m (100-ft by 100-ft) will be permanently

kept free of vegetation following construction for future line maintenance. This area was demarked as “Structure Pad Area” in the PMR Map Book which was submitted to the CPUC on May 14, 2010. Additionally, a typically 11-m by 23-m (35-ft by 75-ft) flat graded maintenance area will remain as a permanent disturbance in order to allow access to the structures for maintenance.

Segments of the SRPL Project will require helicopter construction. These segments include a 30-m by 30-m (100-ft by 100-ft) structure area upon which work will be conducted during construction and they have been calculated as permanent impacts. Many of the structures that will require helicopter construction also have a TSAP. The TSAP areas represent either a helicopter landing zone or equipment loading zone for helicopters. The TSAP contains a 30-m (100-ft) diameter area around the center of each pad that is used to calculate the impact of each TSAP.

The overhead portion of the SRPL Project will require the construction of transmission support structures. Each support structure will require the installation of foundations, which are typically drilled concrete piers. First, holes will be excavated for each structure; four holes for each lattice structure and one for each single-shaft tubular steel pole and transition structure. The holes will be drilled using a truck-mounted excavator equipped with augers of various sizes depending on the diameter and depth requirements of the hole to be drilled. Each foundation will extend approximately 0.6 m (2.0 ft) above the ground level.

Where solid rock is encountered, blasting, rock-hauling, or the use of a rock anchoring or micro-pile system may be required. The rock anchoring or micro-pile system will be used in areas where site access is limited or adjacent structures could be damaged as a result of blasting or rock-hauling activities. In environmentally sensitive areas, a HydroVac, which uses water pressure and a vacuum, will be used to excavate material into a storage tank. In areas where it is not possible to operate large drilling equipment due to access or environmental constraints, hand digging may be required. Reinforcing steel rebar cages and anchor bolt cages will be installed after excavation and prior to concrete placement and structure installation. These cages are designed to strengthen the structural integrity of the foundations and will be assembled in pieces at the nearest project laydown area.

Towers and Poles

Lattice towers and steel pole structures will be assembled on site, except where helicopter delivery is performed. Steel members for each structure will be delivered to the site by flatbed truck. Assembly will be facilitated on site by a small truck-mounted crane. Subsequent to full or partial assembly, the entire or the lower portion of the structures will be lifted onto the foundation using a large crane designed for erecting towers. The crane will move along the ROW access roads and spur roads as towers are erected.

Stringing Conductors, Shield Wire, and Fiber Optic Ground Wire

Conductor, shield wire, and fiber optic ground wire will be placed on the transmission line support structures by a process called stringing. The first step to conductor and fiber optic shield

wire stringing will be to install insulators and stringing sheaves. Stringing sheaves are rollers that are temporarily attached to the lower portion of the insulators at each transmission line support structure to allow conductors to be pulled along the line. Additionally, temporary clearance structures will be erected, where required, prior to stringing any transmission lines. The temporary clearance structures are typically vertical wood poles with cross arms and are erected at road crossings, railroad crossings, or crossings with other energized electric and communication lines to prevent contact during stringing activities. Bucket trucks may also be used to provide temporary clearance. Bucket trucks are trucks fitted with a hinged arm ending in an enclosed platform called a “bucket,” which can be raised to let the worker in the “bucket” service aerial equipment.

Once the stringing sheaves and temporary clearance structures are in place, the initial stringing operation will commence. This will consist of pulling a sock line through the sheaves along the same path the project transmission line would follow. The sock line is attached to the hard line, which follows the sock line as it is pulled through the sheaves. The hard line will then be attached to the conductor or fiber optic shield wire to pull it through the sheaves into its final location. Pulling the line may be accomplished by attaching it to a specialized vehicle or a small helicopter that moves along the ROW. At the end of the operation, the tension and sag of the conductors and wires will be fine-tuned, stringing sheaves will be removed, and the conductors will be permanently attached to the insulator assemblies at the support structures.

Wire Stringing Sites

Following the initial stringing operation, pulling and tensioning the line will be required to achieve the correct sagging of the transmission lines between support structures. Pulling and tensioning sites will be required every 1 to 6 km (1 to 4 mi) along the ROW and will encompass approximately 0.4 to 0.8 ha (1.0 to 2.0 ac) each to accommodate the required equipment. To the extent practicable, the pulling and tensioning sites will be located within the project ROW.

Depending on topography, minor grading may be required at some sites to create level pads for equipment, such as tractors and trailers, that will be used for the stringing operation. Vegetation will likely be cleared throughout the pull site areas; however, the areas will be restored and re-vegetated resulting in only temporary impacts to native vegetation. There will, however, be two permanent pull sites used for the crossing of I-8.

Fences, Gates, and Cattleguards

Fences and gates will be placed or replaced as required. If cattleguards, fences, and gates are damaged, they will be repaired or replaced to their original condition as required by the landowner. Temporary gates will be installed only with the permission of the landowner.

Blasting

As described previously, transmission line structure foundations will normally be installed using drilled shafts or piers. If hard rock is encountered within the planned drilling depth, blasting may be required to loosen or fracture the rock in order to reach the required depth to install the structure foundation. Link 1 has several areas of hard rock within the Mountain Springs Grade

portion of the link. Link 2 and Link 5 are characterized by significantly more hard rock conditions, and blasting will be required in those links.

Prior to blasting, a detailed blasting plan will be submitted by the construction contractor to SDG&E for each blast site. The blasting plan will include blasting methods, survey of existing structures and facilities, and scaled distance calculations that estimate the projection distance and speed of particles from blasting activities. Blasting will be very brief in duration (milliseconds), and the noise would dissipate with distance. Blasting produces less noise and vibration than comparable non-blasting methods to remove hard rock. Non-blasting methods include track rig drills, rock breakers, jack hammers, rotary percussion drills, core barrels, and rotary rock drills with rock bits, which would require much longer time duration to excavate approximately the same amount of rock as blasting.

Helicopter Construction and TSAPS

Helicopters will be used to support construction activities in areas where access is limited (e.g., no suitable access road, limited pad area to facilitate onsite structure assembly) or where other environmental constraints preclude access to the project area with standard vehicles and equipment. All helicopter construction activities will be based at a TSAP, which also will be the project-material staging area.

TSAPs consist of a 6-m-wide by 6-m-long (20-ft-wide by 20-ft-long) permanent pad within a 30-m-diameter (100-ft-diameter) area. The permanent pad is cleared and compacted; some grading is required. Outside the permanent pad, vegetation is trimmed to 0.6 to 1.2 m (2.0 to 3.0 ft) above ground level. A footpath leads from the TSAP to the structure pad. It is not expected that vegetation clearing or trimming will be required to establish footpaths from TSAPs in the Permit Area. No grading or clearing will occur outside the TSAP 30-m (100-ft) circle. Sites selected for TSAPs typically have relatively flat terrain and no large boulders. Equipment and crews used in establishing the TSAP are brought to the site by helicopter.

Prior to installation of helicopter-aided tower assemblies, each tower structure will be assembled in three to six sections at the fly yard. Each section will weigh approximately 5,443 to 9,804 kilograms (kg) [12,000 to 15,000 pounds (lbs)], depending on the lifting capacity of the helicopter. Helicopters will be unable to lift and install typical 230 kV or 500 kV tubular steel poles due to their excessive weight, unless specifically designed for helicopter installation.

In areas requiring helicopter-aided construction, laborers, materials, and equipment will be flown in by helicopter. To the extent feasible, temporary trails will be used by personnel to walk to the helicopter sites. Foundation excavation will be completed using hand digging and/or portable equipment prior to delivery of structure sections. Concrete will be placed in the excavated foundation by helicopter using suspended buckets, or by pumping from accessible areas. After assembly at the fly yard, the tower sections will be attached by cables from the helicopter crane to the top four corners of the structure section and airlifted to the structure location. Upon arrival at the structure location, the section will be placed directly on to the foundation or atop the

previously installed structure section. Guide brackets attached to the top of each section will assist in aligning the stacked sections. Once aligned correctly, line crews will climb the structures to bolt the sections together permanently.

Noxious Weed Control

SDG&E will implement the Weed Control Plan as part of pre-construction and construction activities. The Weed Control Plan also will apply to operations and maintenance.

Where SDG&E owns the ROW property, the Weed Control Plan includes specific weed abatement methods, practices and treatment timing developed in consultation with the San Diego County Agriculture Commissioner's Office and the California Invasive Plant Council (Cal-IPC). On the ROW easement lands administered by public agencies (BLM, USFS, and Wildlife Agencies), the Weed Control Plan incorporates all appropriate and legal agency-stipulated regulations.

Removal of Facilities and Waste Disposal

Several existing structures are identified for removal and/or conversion from wood to steel as part of the construction phase. The first step in the removal of existing transmission lines will be to attach sheaves to the end of the insulators at each structure and place the conductor onto the sheaves. Next, the conductor will be attached to a sock line and removed using pulling equipment. The conductor will be coiled and hauled off site to a recycling facility. Existing wood poles will be removed by cutting the pole at the ground level, leaving the embedded portion in place. The wood poles, insulators, cross arms, and all other associated hardware will be disposed of at an offsite location. No water will be required for wood pole, conductor, or miscellaneous hardware removal.

In some instances when the conductor may not be pulled to remove it, it may be dropped or dragged within the brush or on the ground. In these instances, construction vehicles may have to leave the project access roads. If vehicles must leave the access road, SDG&E will perform a site survey, or more as appropriate, to determine presence or absence of nesting birds or other sensitive species in the work area. SDG&E will consult with the Wildlife Agencies in cases where impacts to sensitive species could occur.

Cleanup

Construction sites and access roads will be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. Refuse and trash will be removed from the sites and disposed of in an approved manner. No open burning of construction trash will occur without agency approval.

At the conclusion of construction, where affected by project construction, SDG&E will:

- Restore all removed curbs, gutters, and sidewalks;
- Repave all removed or damaged paved surfaces;

- Restore removed or damaged landscaping or vegetation; and
- Remove all construction materials from the project site and associated staging areas and dispose of or recycle it at an offsite location, as appropriate.

Hazardous Materials within Corridor

Petroleum products such as gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents will be present within the project ROW and temporary work areas during construction. These products will be used to fuel, lubricate, and clean vehicles and equipment and will be transported in containerized trucks or in other approved containers. When not in use, hazardous materials will be properly stored to prevent drainage or accidents. These materials will not be drained onto the ground or into drainage areas.

Totally enclosed containment will be provided for all hazardous waste. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, will be removed to a disposal facility authorized to accept such materials.

A health and safety plan will be developed by the construction contractor. In the event of a hazardous materials spill, notification and cleanup will be undertaken by construction contractors' certified personnel in an expeditious manner.

Operations and Maintenance

Routine System Inspection, Maintenance, and Repair

Regular inspection of transmission lines, transmission structures, substations, and support systems is critical for safe, efficient, and economic operation. Early identification of items needing maintenance, repair, or replacement will ensure continued safe operation of the SRPL Project. The following sections describe SDG&E's proposed plan for inspecting and maintaining the SRPL Project.

Normal maintenance or repairs by SDG&E to repair or replace conductor or insulator components will not require notification of the BLM unless new ground disturbance is required. Access for this routine repair work will be confined to roads and access designated for this purpose.

In emergencies arising from fire, flood, storms, vandalism, or other factors causing or requiring an outage, repair work is required as soon as the damage is detected. Emergency maintenance involves the prompt movement of crews to repair damage and replace equipment. Crews will be instructed, in accordance with specific maintenance plans and procedures, to protect crops, vegetation, wildlife, and other resources of significance. Specific training will be provided to all maintenance crews instructing them on plan and procedure policy requirements. Restoration procedures following completion of repair work will be similar to those prescribed for original construction.

In case of emergencies requiring surface disturbance and overland travel outside approved roads, SDG&E will notify the BLM immediately by telephone. Information provided will include the location of the outage, extent of damage, and equipment required for repairs.

Substation maintenance activities will include routine scheduled equipment maintenance, grounds keeping, and emergency maintenance in the event of equipment failure. Substation maintenance will be performed by project personnel or approved contractors.

Inspection Patrols

Regular ground and aerial inspections will be performed in accordance with the California Independent System Operator (CAISO) requirements per the Transmission Control Agreement between CAISO and SDG&E concerning transmission facility maintenance. SDG&E's overhead transmission lines transmission structures and substations will be inspected for corrosion, equipment misalignment, loose fittings, and other mechanical problems. The need for vegetation management will also be determined during inspection patrols. As required by CAISO, aerial inspection (visual and infrared) of the entire system and climbing inspections of transmission structures will be conducted annually. Aerial inspection will be conducted by helicopter and will require two or three crewmembers, including the pilot. Ground inspections, including underground system components within each vault, will be conducted by up to three crewmembers every 3 years.

Hardware Maintenance and Repairs

Electrical equipment housed on poles or lattice tower support structures may include conductors, insulators, switches, transformers, lightning arrest devices, line junctions, and other electrical equipment. This equipment may require addition, replacement or repair over time. Typically, equipment repair or replacement will be conducted by a four-person crew with two or three trucks, a boom or line truck, an aerial truck and an assist truck.

Insulator Washing

Arcing can occur when an electrical discharge is created from the combination of atmospheric condensation and dust on porcelain insulators. Arcing may cause electrical outages, but it can be prevented by routinely washing the insulators to keep them free of dust. Insulator washing involves driving a water truck to within 2 m (6 ft) of a tower base and using a high-pressure hose to spray deionized water at the insulators. Two crewmembers and a water truck are required for insulator washing. Typically, insulator washing takes approximately 30 minutes per transmission structure. Insulator washing is not expected more than twice per year and will require 1,136 liters (1) [300 gallons (gal)] of water per structure and 11,136 l [3,000 gal] of water per day.

Right-of-Way Repair

ROW repairs will include grading or repair of existing maintenance access roads and work areas, permanent pulling sites, and helicopter platforms, as well as spot repair of sites subject to flooding or scouring. Activities related to ROW repair are usually conducted after the rainy season, when water has caused erosion damage. Required equipment may include a motor

grader, backhoe, four-wheel drive pickup truck, and a cat-loader. The cat-loader has steel tracks whereas the grader, backhoe, and truck would typically have rubber tires. All access roads are maintained on a 2-year schedule.

Vegetation Management

SDG&E will maintain a minimum clearance of 3 m (10 ft) around the base or foundation of all electrical transmission structures. In addition, SDG&E will maintain work areas adjacent to access roads and electric transmission structures for vehicle and equipment access necessary for operations, maintenance and repair. Shrubs and other obstructions will be regularly removed near structures to facilitate inspection and maintenance of equipment and to ensure system reliability. In addition, vegetation with a mature height of 4.5 m (15.0 ft) or taller will not be allowed to grow within 3 horizontal m (10 horizontal ft) of any overhead conductor or working area in order to protect system reliability and public safety.

Vegetation will be removed using mechanical equipment such as chain saws, weed trimmers, rakes, shovels, mowers and brush hooks. The duration of activities and the size of crew and equipment required will be dependent on the amount and size of the vegetation to be trimmed or removed. Most vegetation removal or tree trimming activities should be completed in 1 day.

Local application of herbicide will occur within a 10-foot radius of each structure. Aerial application of herbicide will not be allowed.

Safety

Safety is a primary concern in the design of the SRPL Project transmission line and related facilities. The transmission line will be protected with power circuit breakers and related line relay protection equipment. All existing fences, metal gates, pipelines, etc. that cross or are within the transmission line ROW will be grounded to prevent electrical shock.

Emergency Response

Emergencies include any event requiring immediate response to a condition by SDG&E personnel. These may include, but are not limited to, car-to-structure contacts, downed structures, fires, transformer outages and/or outages due to down wire as a result of extreme weather. Responding crews will vary in number and equipment needs depending on the size and severity of the emergency. Typically, a four-person crew with a line truck, aerial lift truck, and an assist truck will respond to an emergency to make repairs. Crews may be required to respond to an emergency in a remote area without roads. For roads needing repair, SDG&E will repair roads first before accessing the transmission facilities or use a helicopter to drop personnel in if heavy equipment is not required for repairs to the transmission line. In areas without vehicle access, helicopters will be used to respond quickly to emergencies.

Fire Protection and Security

SDG&E employs two full-time Fire Coordinator and Structure Protection Crews who work closely with local fire protection jurisdictions, including the California Department of Forestry and Fire Protection, to ensure implementation and effectiveness of safety requirements and

procedural protocols. Additional requirements and protocols are contained in SDG&E's *Sunrise Powerlink Fire Plan for Construction, Operation and Maintenance* (SDG&E 2010e), which was approved by the CPUC on February 2, 2010. This document is intended to serve as an educational tool to prevent work-related fires and the associated protocols and policies related to fire prevention.

SDG&E implements the following practices to prevent fire during construction and maintenance/repair activities: brush clearing prior to work, stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, and providing "fire behavior" training to all pertinent personnel. SDG&E does not directly fight fires; however, SDG&E personnel will extinguish any remaining structure fires once a fire has passed through the SRPL Project area.

Long Term Access

Long-term access to the ROW after construction will be provided by the same permanent access roads used during construction.

Post-Construction Restoration

Two types of restoration will occur in connection with construction activities: restoration of sensitive vegetation communities in temporary impact areas and salvaging and relocation of special status plant species.

Restoration of Sensitive Vegetation Communities

Vegetation restoration will occur in accordance with the Habitat Restoration Plan. The Habitat Restoration Plan covers the restoration of 22 sensitive vegetation communities (types and subtypes). This plan identifies the process, methods, and success criteria for restoring vegetation to pre-construction conditions within temporary work areas around structure pads, construction yards, wire stringing areas, guard areas, and designated access roads. The sensitive vegetation types include chaparrals, coastal and montane scrubs, desert scrubs, herbaceous wetlands, riparian forests and woodlands, and woodlands and forests. Measures in the Habitat Restoration Plan also are applicable to impacts from operations and maintenance.

Table 3 indicates the number and type of impact areas requiring restoration, the activities at those sites during construction, and anticipated post-construction site conditions. Table 4 indicates the acres per vegetation type in those areas, as estimated in the May 2010 PMR.

Table 3. Temporary Impacts Areas Where Sensitive Vegetation Will be Restored

Type (number)	Anticipated Activities /Duration	Anticipated Post-Construction Site Condition
Access Roads (5.24 miles)	Temporary access roads will be used to access tower sites where conventional construction is necessary but the roads are not allowed to remain. These roads will be in place for approximately 6 to 8 weeks duration to accommodate the tower construction process.	Expect all vegetation to be removed, grading to be performed and heavy equipment use during the construction period will result in a moderate to high degree of soil compaction. Decompaction, weed removal, soil re-contouring (and amending), and hydro-seeding would be required.
Guard Structures (239)	Guard structures consist of three metal poles that will be installed in the ground within a variety of habitat areas to prevent wires from contacting the ground during stringing. Each guard structure will be in place for up to 4 weeks during wire installation.	Expect minimal ground disturbance consisting of three divot holes in each habitat area that may only require soil replacement and/or minor broadcast seed application and follow up weed monitoring/maintenance may be required at each site.
Construction Yards (19)	Construction yards will have multiple uses that are anticipated to extend over 1 year at most sites, and over 2 years at yards where field offices will be established (Alpine, Rough Acres). These activities include tower steel and construction materials (soil, rock, concrete) storage, contractor vehicle and heavy equipment parking, helicopter landing, vehicle wash stations, etc.	Expect all woody vegetation to be removed where necessary, with relatively level areas and sparse vegetation crushed. Expect rock and/or steel plates to be used in some areas, and grading to fit the needs of the contractor at these sites. Due to varied uses and extended duration of impacts, a high degree of soil compaction may occur. Trash and debris removal, soil decompaction, weed removal, soil re-contouring (and amending), and hydro-seeding would be required throughout each site.
Stringing Sites (78)	Stringing sites will be used after tower construction is completed and during wire pulling and installation. Wire stringing activities are anticipated to occur for approximately 4 weeks at each pull site.	Expect most sites to use drive and crush, as opposed to blading and direct removal of vegetation. Heavy equipment will be used on the site so some degree of localized soil compaction is anticipated. Where grading and vegetation/soil removal are necessary, soil salvage would be recommended. Decompaction, soil re-contouring (and amending), and hydro-seeding would be required in portions of each site.
Work Areas (205)	Temporary work areas will be used to establish tower foundations, complete conventional tower assembly and erection, and store and maintain equipment for tower assembly. These areas will receive heavy foot traffic as well as a variety of heavy equipment, steel, tools, and other construction materials. Construction activities are anticipated to occur over 3 to 6 weeks at most tower sites.	Expect most temporary work areas to be graded and have vegetation removed. Soil salvage is not anticipated in these areas but would be recommended where feasible. Heavy machinery and foot traffic would result in some degree of soil compaction. Decompaction, weed removal, soil re-contouring (and amending), and hydro-seeding would be required throughout each site.

Table 4. Sensitive Vegetation Types within Temporary Impact Areas (acres)

Temporary Impact Type	Vegetation Type	Acres
Access Roads	Chaparrals	1.64
	Coastal and Montane Scrub Habitats	2.81
	Desert Scrub and Dune Habitats	0.87
	Grasslands and Meadows	0.73
	Herbaceous Wetlands, Freshwater, and Streams	0.07
	Woodlands and Forests	0.02
	Access Road Total	6.14
	Construction Yards	Chaparrals
Coastal and Montane Scrub Habitats		39.50
Desert Scrub and Dune Habitats		83.82
Grasslands and Meadows		38.65
Herbaceous Wetlands, Freshwater, and Streams		0.31
Woodlands and Forests		1.87
Construction Yard Total		269.99
Guard Areas		Chaparrals
	Coastal and Montane Scrub Habitats	0.12
	Desert Scrub and Dune Habitats	0.11
	Grasslands and Meadows	0.02
	Herbaceous Wetlands, Freshwater, and Streams	0.01
	Riparian Forests and Woodlands	0.03
	Woodlands and Forests	0.04
	Guard Areas Total	0.71
String Sites	Chaparrals	66.35
	Coastal and Montane Scrub Habitats	14.50
	Desert Scrub and Dune Habitats	23.78
	Grasslands and Meadows	7.00
	Herbaceous Wetlands, Freshwater, and Streams	0.72
	Woodlands and Forests	0.46
	String Site Area Total	112.8
	Work Areas	Chaparrals
Coastal and Montane Scrub Habitats		10.00
Desert Scrub and Dune Habitats		33.68
Grasslands and Meadows		2.01
Herbaceous Wetlands, Freshwater, and Streams		1.26
Riparian Forests and Woodlands		0.06
Woodlands and Forests		1.53
Work Area Total		98.31
	Grand Total	487.95

Offsite Conservation

SDG&E has committed to the conservation (acquisition and perpetual management) of nine properties to offset construction and O&M related impacts to federally and State-listed species and other conservation initiatives (e.g., City and County of San Diego Subarea Plans under the MSCP) (Figure 1). Table 5 shows construction and O&M-related impacts associated with the modified SRPL Project, the offsite conservation anticipated according to the impact to conservation ratios presented in the Final EIR/FEIS, and the actual acreage that will be conserved.

Impacts specific to O&M activities have been identified for the project (i.e., specific acreages identified for annual maintenance [24 ha (60 ac) per year over the 100-year life of the project] and fire prevention and management activities [up to 202 ha (500 ac) over the life of the project]. However, because most annual maintenance will occur in previously disturbed areas, only fire prevention and management activities are likely to result in permanent habitat removal beyond that affected by construction and for which additional conservation would be expected.

Unlike construction impacts, the conservation expected to offset new permanent impacts from O&M activities was not committed for acquisition prior to initiating construction of the SRPL Project, and it was expected only after the project became operational. However, SDG&E has provided sufficient conservation in advance to offset both construction and O&M activities for the life of the SRPL Project. The acreage conserved for the SRPL Project is substantially higher than the expected conservation reflected in the Final EIR/EIS because of the conservation added to address O&M impacts and because other conservation initiatives overlap with federally and State-listed species conservation. Table 6 shows general vegetation characteristics and acreage for properties that are being conserved in San Diego County. The Suckle and Desert Cahuilla properties in Imperial County will provide conservation benefit to PBS.

Table 5. Anticipated construction and O&M-related impacts and associated conservation for federally listed species

Species ²	Project Impact (acres)	PERMANENT			TEMPORARY			CONSERVATION	
		Fire Impact (acres)	Ratio	Subtotal Conserved (acres)	Impact (acres)	Ratio ³	Subtotal Conserved (acres)	Total Anticipated (acres)	Acquired (acres) ¹
Gnatcatcher Occupied	15.9	55.0	2:1	142.0	5.8	1:1	5.8	147.6	326.0
Gnatcatcher CH	3.8	5.5	2:1	18.6	22.0	1:1	22.0	40.6	0
Vireo Suitable	3.1		3:1	9.3	13.2	2:1	26.4	35.7	109.5
Quino Occupied	15.2	21.0	3:1	108.6	17.5	1:1	17.5	126.1	812.0
Quino CH	4.5	2.8	3:1	13.5	1.6	1:1	1.6	15.1	0

² Habitat categories (e.g., occupied and critical habitat) are partially overlapping for most species.

³ Temporary impacts will be restored at a 1:1 ratio onsite in addition to offsite conservation shown in this table.

Arroyo Toad Suitable	15.0	27.5	2:1	85.0	84.0	1:1	84.0	169.0	836.0
Arroyo Toad PCH	2.5	8.0	3:1	7.5	44.2	2:1	88.4	120.0	741.0
PBS	10.4		5:1	52.0	20.2	3:1	60.6	112.6 ⁴	5,959.0
PBS CH	5.4		5:1	27.0	1.4	3:1	4.2	31.2	2,995.0
FTHL in MA ⁵	9.5		5.5:1	52.3	36.9	2.5:1	92.3	144.6	In lieu fee
FTHL outside MA ³	26.3		1:1	26.3	94.9	0	0	26.3	In lieu fee

Table 6. Conservation of vegetation types described in the HAP⁶

Property Information	Nabi	Lakeside Ranch	Hamlet	El Capitan	Chocolate Canyon	Lightener	Long Potrero	Total
Total Acres	93.46	464.94	105.76	381.40	95.47	797.12	1241.70	3,180
Acres in ROW or Impacted	0	37.56	21.41	0	19.33	91.26	29.43	199
Acres Conserved	93.46	427.38	84.35	381.40	76.14	705.86	1212.27	2,981
Vegetation Type Conserved (acres)								
Chaparral	37.85	77.26	2.24	378.56	26.10	599.37	758.03	1,879
Coastal and Montane Scrub	36.50	324.02	56.21	0	30.63	0.82	175.84	618
Grassland and Meadow	4.86	0	19.45	0	0	21.68	21.30	67
Wetlands, Freshwater, Streams	0	0	0.66	0	0.03	0.12	60.16	61
Riparian Forest and Woodland	6.42	3.76	0	0	14.16	0	0	24
Riparian Scrub	1.63	0	0	0	0	0	0.52	2
Woodland and Forest	4.47	11.54	0	2.84	4.42	75.31	73.99	173
Non-native, Developed, Disturbed	1.73	0.80	5.79	0	0.80	8.56	122.43	140
Covered Species Addressed	Arroyo Toad, vireo	Gnatcatcher	Gnatcatcher	None	Vireo	None	Arroyo Toad, Quino, Vireo	
Critical Habitat Addressed ⁷	None	Gnatcatcher	Gnatcatcher	None	None	None	Arroyo Toad Quino	

⁴ It was assumed in the 2009 biological and conference opinion that the no less than 49.2 ha (368.8 ac) of occupied and designated critical habitat for PBS would be acquired for conservation.

⁵ Offsite conservation has been addressed through an in lieu fee to the BLM.

⁶ Impacts to PBS are addressed through conservation of the 81-ac (199-ac) Suckle and 2,331-ha (5,760-ac) Desert Cahuilla properties as described in the HAP.

CONSERVATION MEASURES

The SRPL Project includes the following conservation measures and/or design features that will be implemented to avoid, minimize, and offset potential adverse effects to listed species. These measures were developed and coordinated with the BLM, USFS, and SDG&E and are based on information in the SRPL Biological Assessment, Final EIR/EIS, and supplemental material provided during the reinitiated consultation. Conservation measures will be implemented during the project construction phase and during long-term O&M of the project. To facilitate future coordination on these conservation measures they are identified as General Conservation Measures (G-CM) or Species-Specific Conservation Measures (SS-CM) and numbered sequentially in this document.

General Conservation Measures⁸

General Conservation Measures were originally developed during the NEPA/CEQA process and in coordination with the CDFG and have been revised to reflect new information provided during the reinitiated consultation. General Conservation Measures minimize the impacts of the SRPL Project on wildlife resources in a broad manner and are included here because of their overall benefit to the natural landscapes and habitats supporting federally endangered and threatened species. A few General Conservation Measures address species not specifically covered in this biological and conference opinion but are retained to facilitate coordination with State requirements for protection of wildlife resources or address additional survey needs.

1. Project Construction Phase

G-CM-1 A Project Biologist or biological monitor⁹ (“Project Biologist”) will monitor all work areas to ensure that all impacts occur within designated limits. Monitoring entails communicating with contractors, taking daily notes, and ensuring that the requirements of the Conservation Measures are met by being present during construction activities including all initial grubbing and clearing of vegetation. The Project Biologist will conduct monitoring for any area subject to disturbance from construction activities. The Project Biologist will perform periodic inspections of construction once or twice per week, as defined by the Wildlife Agencies, depending on the sensitivity of the resources. The Project Biologist will send weekly monitoring reports to the CPUC and BLM and will record any reduction or

⁷ Impacts to gnatcatcher and Quino critical habitat are addressed outside of critical habitat boundaries in occupied habitat as described in effects analyses for these species.

⁸ The numbering of these conservation measures has been retained from the 2009 biological and conference opinion. Where the conservation measure is no longer required because it has been complied with prior to the reinitiated consultation, or is revised to reflect new information, the change is explained and the numbering retained. Minor revisions that do not change the intent are not explained.

⁹ For the purposes of the biological and conference opinion, a qualified biologist or biological monitor for the SRPL Project must have (1) a bachelor’s degree with an emphasis in ecology, natural resource management, or related science; (2) previous experience with applying the terms and conditions of a biological opinion; and (3) approval of the Service if conducting focused or protocol surveys for federally listed species.

increase in construction impacts. The final impact calculations will be submitted to the CPUC, BLM, USFS (for sections of the SRPL Project that require monitoring on USFS lands), and Wildlife Agencies.

- SDG&E, its contractors and subcontractors, and their respective project personnel, will refer all environmental issues, including wildlife relocation, sick or dead wildlife, hazardous waste, or questions about environmental impacts to the Project Biologist. Experts in wildlife handling (e.g., Project Wildlife) may need to be brought in by the Project Biologist for assistance with wildlife relocations.
- The Project Biologist will have the authority to issue stop work orders if any part of the Conservation Measures are being violated. The Project Biologist will immediately notify the CPUC, BLM, USFS and Wildlife Agencies of any significant events discovered during the monitoring. Reinitiation of work following a stop work order will only occur when the CPUC, BLM, USFS, and Wildlife Agencies are satisfied that the impacts have been fully documented, that compensation for these impacts will be made, if necessary, and that any additional protection measures they deem necessary will be undertaken.

G-CM-2 Throughout the construction process all crews will use the SDG&E Water Quality Construction Best Management Practices Manual (BMPs) (SDG&E 2002). Following are some of the general guidelines:

- Construction activities will use existing bridges to cross major streams and culverts in most dry intermittent streams;
- Surface water, riparian areas, and floodplains will be spanned where feasible; a Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented; Storm Water BMPs for construction will be implemented per the requirements of the SRPL Project's SWPPP;
- Silt fencing, straw mulch, and straw bale check dams will be installed as appropriate to contain sediment within construction work areas and staging areas. Where soils and slopes exhibit high erosion potential, erosion control blankets, matting, and other fabrics and/or other erosion control measures will be implemented.
- The potential for increased sediment loading will be minimized by limiting road improvements to those necessary for project construction.
- Upland pull sites will be selected to minimize impacts to surface waters, riparian areas, wetlands, and floodplains; and
- Structures will not be placed in streambeds or drainage channels to the extent feasible.

G-CM-3 SDG&E will secure any required General Permit for Storm Water Discharges Associated with Construction Activity (National Pollutant Discharge Elimination System (NPDES permit) authorization from the State Water Resources Control Board and/or the Regional Water Quality Control Board (RWQCB) to conduct construction-related activities to build the project and establish and implement a SWPPP during construction to minimize hydrologic impacts.

G-CM-4 Prior to construction, all of SDG&E's contractors, subcontractors, and 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 and impact minimization procedures, the importance of these resources, and the purpose and necessity of protecting them.

G-CM-5 In addition to regular watering to control fugitive dust created during clearing, grading, earth-moving, excavation, and other construction activities, which could interfere with plant photosynthesis, a 24-km (15-mi) per hour speed limit will be observed on dirt access roads during construction and O&M operations to reduce dust and allow reptiles and small mammals to disperse.

G-CM-6 This conservation measure was revised to delete the specified ratios and requirement by SDG&E to provide additional conservation to offset unintentional impacts outside of construction impact limits. Such impacts would be inconsistent with this revised biological and conference opinion and any additional impacts to listed species would be more appropriately addressed following an evaluation of such impacts, including through reinitiation of consultation, if warranted.

The area limits of project construction and survey activities will be predetermined based on the temporary and permanent disturbance areas noted on the final design engineering drawings, with activity restricted to and confined within those limits. All sensitive resources identified will be flagged in the field to ensure awareness and appropriate treatment during construction. In addition, survey personnel will keep survey vehicles on existing roads. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or construction activity where any sensitive biological resources or wildlife habitats occur. Any impacts associated with unauthorized activity will be reported within 24 hours to the Wildlife Agencies.

G-CM-7 During project surveying activities, brush clearing for footpaths, line-of-sight cutting, and land surveying panel point placement in sensitive habitat will require prior approval from the Project Biologist in conformance with the Conservation Measures. Hiking off roads or paths for survey data collection is allowed year-round as long as applicable Conservation Measures to minimize impacts are met.

G-CM-8 Stringing of new wire and reconductoring for the project will be allowed year round in sensitive habitats if the conductor is not allowed to drag on the ground or in brush and all vehicles used during stringing remain on project access roads. Where stringing requires that conductor be dropped within brush or dragged on or through the brush or ground or vehicles leave project access roads, SDG&E will perform a site survey(s) to determine presence or absence of nesting migratory birds (including the two federally listed bird species subject to this consultation) or other listed species in the work area. Details of protocol survey requirements are outlined in the species-specific measures below. SDG&E will submit results of this survey(s) to the Wildlife Agencies, prior to dropping wire in brush, dragging wire on the ground or through brush, or taking vehicles off project access roads.

G-CM-9 Project personnel will not deposit or leave any food or waste in the project area, and no biodegradable or non-biodegradable debris will remain in the ROW following completion of construction. All refuse will be placed in appropriate wildlife-proof containers and removed from job sites daily.

G-CM-10 Repairs may be required during the construction of the project to address emergency situations (e.g., downed lines, slides, slumps, major subsidence, etc.) that potentially or immediately threaten the integrity of the project facilities. During emergency repairs, all Conservation Measures will be followed to the fullest extent practicable. Once the emergency has been abated, any unavoidable environmental damage will be reported to the Project Biologist, who will submit a written report within 1 week of such impacts to the Wildlife Agencies and any other government agencies having jurisdiction over the emergency actions. If required by the government agencies, the Project Biologist will develop a reasonable and feasible mitigation plan consistent with the Conservation Measures and any permits previously issued for the project by the governmental agencies.

G-CM-11 This conservation measure addressed revising project designs, where feasible, to minimize impacts to areas identified by the Wildlife Agencies as sensitive habitat. **G-CM-11** was complied with prior to reinitiation of this consultation and reflected in the final project designs for the modified SRPL Project.

G-CM-12 In construction areas where grading or re-contouring is not required, vegetation will be left in place wherever possible to avoid excessive root damage and allow for re-sprouting. Only the minimum amount of vegetation necessary for the construction of structures and facilities will be removed. Topsoil located in areas containing sensitive habitat will be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation. Topsoil located in developed or disturbed areas is excluded from this measure. Disturbed soils will be restored based on the Habitat Restoration Plan per **G-CM-16**.

G-CM-13 Night lighting within the project area adjacent to preserved habitat will be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable. Vehicle traffic associated with

project activities may not exceed 24-km (15-mi) per hour to prevent mortality of nocturnal wildlife species that may be moving about.

G-CM-14 To the extent practicable, surface-disturbing components of the project will be located in previously disturbed areas or where habitat quality is poor to minimize disturbance of vegetation and soils.

G-CM-15 Temporary construction mats may be used to minimize vegetation and soil disturbance only where deemed appropriate by the Project Biologist. The construction mats will not be left on the ground for more than 3 weeks. Use of construction mats will cause temporary impact to vegetation, which will be restored in accordance with the Habitat Restoration Plan per conservation measure **G-CM-16**.

G-CM-16 This conservation measure addresses the Habitat Restoration Plan and has been revised because the Habitat Restoration Plan has been approved by the Wildlife Agencies. SDG&E will implement the Habitat Restoration Plan (Appendix 1) for all temporarily impacted project areas.

G-CM-17 This conservation measure has been changed to reflect updated information and progress made in acquiring offsite conservation.

- (a) Prior to initiating ground- or vegetation-disturbing project activities, SDG&E will provide and implement the following assurance:
 - Unless already acquired, SDG&E will provide assurances (e.g., performance bond, letter of credit, or escrow account) to fund the acquisitions listed below in (c).
- (b) SDG&E will fully fund an endowment for in-perpetuity management of all parcels acquired in (c) within 3 months of the Wildlife Agencies' approval of the final endowment amounts.
- (c) Unless otherwise authorized by the Wildlife Agencies, no later than 18 months from the date of the revised 2010 biological and conference opinion, SDG&E will acquire and permanently preserve the nine (9) parcels identified in the September 2010 HAP (referenced by name as Nabi, Lakeside Ranch, Hamlet, El Capitan, Chocolate Canyon, Lightner, Long Potrero, Suckle, and Desert Cahuilla) in a manner consistent with the HAP and the following provisions:
 - The land-owner, land management entity, conservation easement grantee, and endowment fund manager for each property will be approved by the Wildlife Agencies. SDG&E will coordinate efforts with the Wildlife Agencies to identify potential candidates and review their qualifications to hold and manage lands and/or endowment funds. This task will be completed within 6 months of

issuance of the 2010 revised biological and conference opinion unless an extension is granted by the Wildlife Agencies.

- SDG&E will conduct a revised Property Analysis Record (PAR) or PAR-like analysis for each property once the land management entity for individual properties has been identified and approved by the Wildlife Agencies. This revised PAR will be used to determine the final endowment amount SDG&E will provide for in-perpetuity habitat management of each property.
- Conservation easement language, or its equivalent where an easement is not allowed by the land manager (State Parks), for all properties will be approved by the Wildlife Agencies prior to easement recordation; and
- SDG&E will complete the required acquisition, protection, and transfer of all properties and record the required conservation easements in favor of DFG, or other entity approved by the Wildlife Agencies, no later than 18 months after the start of the ground- or vegetation-disturbing activities, unless an extension is granted by the Wildlife Agencies.

G-CM-18 To reduce adverse impacts from unnatural wildfire (type conversion, proliferation of exotic weed species), SDG&E will re-seed disturbed areas after a transmission line–caused fire. Should a fire occur and be determined by the CPUC’s Consumer Protection and Safety Division (CPSD) or the California Department of Forestry and Fire Protection (Cal Fire) to be caused by the SRPL Project, SDG&E will re-seed all natural areas—both public and private—that are burned as a result of the SRPL Project-caused fire. Re-seeding will be required for areas that have been burned within the minimum 10-year period required for arid chaparral to establish an adequate seed bank and thereby resist vegetation type conversion. A re-seeding plan will be developed with input from Cal Fire, the USFS, BLM, CPUC and Wildlife Agencies. Seeds will be raked into the soil to avoid seed predation, and reseeded will be carried out once to coincide with the rainy season (October 1 through April 1) to increase the likelihood of germination success. SDG&E will provide a written report documenting all re-seeding activities to the BLM, CPUC, USFS, and Wildlife Agencies. SDG&E will make a good faith effort to obtain approval to re-seed on private lands as appropriate, and documentation of this good faith effort will be submitted to the above mentioned agencies upon request. Specific re-seeding requirements stipulated in this conservation measure will be subject to approval and modification by any public landowning agency.

G-CM-19 This conservation measure addresses the Raven Control Plan and has been revised because the Raven Control Plan has been approved by the Wildlife Agencies for portions of the SRPL Project route (Appendix 2).

G-CM-20 This conservation measure addresses the Weed Control Plan and has been revised because the Weed Control Plan has been approved by the Wildlife Agencies.

SDG&E will implement the comprehensive, Weed Control Plan for pre-construction and long-term invasive weed abatement, approved by the BLM, USFS, and Wildlife Agencies.

G-CM-21 Project construction activities will be designed and implemented to avoid or minimize new disturbance, erosion on manufactured slopes, and offsite degradation from accelerated sedimentation. Where revegetation is necessary to improve the success of erosion control, planting or seeding with native seed mix, approved by the Wildlife Agencies, will be done on slopes.

In addition to the measures above, the following erosion control procedures will be implemented:

- Vehicle and construction equipment use will be restricted to access roads and areas in the immediate vicinity of construction work sites to help reduce soil disturbance.
- In agricultural areas, topsoil will be left in roughened condition.
- When practical, construction activities will be avoided on wet soil to reduce the potential for soil compaction, rutting, and loss of soil productivity.
- Disturbed areas will be returned to their pre-construction contours and allowed to revegetate naturally, or will be reseeded with an appropriate seed mixture if necessary.
- Construction of access roads in inaccessible terrain will be reduced by using helicopters to place structures in select locations.

G-CM-22 In areas where ground disturbance is substantial or where re-contouring is required (e.g., marshaling yards, tower sites, spur roads from existing access roads), surface restoration will occur as necessary for erosion control and revegetation. The method of restoration will normally consist of returning disturbed areas back to their original contour, reseeded (if required), installing cross drains for erosion control, placing water bars in the road, and filling ditches for erosion control. Potential for erosion will be minimized on access roads and other locations primarily with water bars. The water bars will be constructed using mounds of soil shaped to direct the flow of runoff and prevent erosion. Soil spoils created during ground disturbance or re-contouring will be disposed of only on previously disturbed areas, or used immediately to fill eroded areas. Cleared vegetation can be hauled off site to a permitted disposal location, or may be chipped or shredded to an appropriate size and spread in disturbed areas of the ROW with the approval of the Project Biologist.

G-CM-23 To limit impact to existing vegetation, appropriately sized equipment (e.g., bulldozers, scrapers, backhoes, bucket-loaders, etc.) will be used during all ground disturbance and re-contouring activities.

G-CM-24 This conservation measure has been revised to reflect approval of the Dust Control Plan. To suppress dust during project construction, SDG&E will implement the November 2009 Dust Control Plan approved by the Imperial County Air Pollution Control District on December 9, 2009 (SDG&E 2009).

In addition to the Dust Control Plan, the following dust reduction measures will be implemented:

- Prohibit construction grading on days when the wind gusts exceed 40.2 km per hour (25 mph), to the extent feasible, to control fugitive dust;
- All trucks hauling soil and other loose material will be covered or maintain at least 0.61 m (2.00 ft) of freeboard;
- Snow fence-type windbreaks will be erected in areas identified as needed by SDG&E;
- Vehicle speeds will be limited to 24 km per hour (15 mph) on unpaved (no gravel or similar surfacing material) roads;
- Unpaved roads will be treated by watering as necessary;
- Soil stabilizers will be applied to inactive construction areas on an as-needed basis; and
- Exposed stockpiles of soil and other excavated materials will be contained within perimeter silt fencing, watered, treated with soil binders, or covered as necessary.

G-CM-25 Except when not feasible due to physical or safety constraints, all project vehicle movement will be restricted to existing access roads and access roads constructed as a part of the SRPL Project and determined and marked by SDG&E in advance for the contractor, contractor-acquired accesses, or public roads.

G-CM-26 All limits of construction will be delineated with orange construction fencing. During and after construction, entrances to access roads will be gated to prevent the unauthorized use of these roads by the general public. Signs prohibiting unauthorized use of the access roads will be posted on these gates.

G-CM-27 To the extent feasible, access roads will be built at right angles to the streambeds and washes. Where it is not feasible for access roads to cross at right angles, SDG&E will

limit roads constructed parallel to streambeds or washes to a maximum length of 152 m (500 ft) at any one transmission line crossing location. Such parallel roads will be constructed in a manner that minimizes potential adverse impacts on “waters of the U.S.” or waters of the State. Culverts will be installed where needed for right-angle crossings, but rock crossings will be used across most right-angle drainage crossings. All construction activities will be conducted in a manner that will minimize disturbance to vegetation, drainage channels, and stream banks (e.g., structures will not be located within a stream channel, construction activities will avoid sensitive features). Up to 30 days prior to construction in streambeds and washes, SDG&E will perform a pre-activity survey(s) to determine the presence or absence of threatened or endangered riparian species. Details of protocol survey requirements are listed in the Species-Specific Conservation Measures below.

G-CM-28 To limit new or improved accessibility into the area, SDG&E will coordinate with the authorized officer for the applicable Federal, State, or local land owner/administrator at least 60 days before construction in order to determine if gates will be installed on existing and new access roads, especially trails that will be used as access roads, to prevent unauthorized vehicular access to the ROW. Gate installation will be required at the discretion of the land management agency. On trails proposed for dual use as access roads, gates will be wide enough to allow horses, bicycles, and pedestrians to pass through. SDG&E will document its coordination efforts with the administering agency of the road/trail and provide this documentation to the CPUC, BLM, and all affected jurisdictions 30 days prior to construction. Signs prohibiting unauthorized use of the access roads will be posted on these gates.

G-CM-29 To control unauthorized use of SRPL Project access roads by off-road vehicle enthusiasts, SDG&E will provide funding to land management entities responsible for areas set aside for habitat conservation to provide for off-road vehicle enforcement patrols. The responsible land management entities will formulate what funding is reasonable to control unauthorized use of Project access roads.

G-CM-30 To limit new or improved accessibility into the area, all new access roads or spur roads constructed as part of the project that are not required as permanent access for future project maintenance and operation will be permanently closed. Where required, roads will be permanently closed, with the concurrence of the underlying landowner and the governmental agency having jurisdiction, using the most effective feasible and least environmentally damaging methods (e.g., stockpiling and replacing topsoil or rock replacement) appropriate to that area. All permanently closed access roads and spur roads will be restored with native vegetation following closure.

G-CM-31 Mowing will be used when permanent access is not required since, with time, total re-vegetation is expected. If mowing is in response to a permanent access need, but the alternative of grading is undesirable because of downstream siltation potential, it should be recognized that periodic mowing will be necessary to maintain permanent access. In such instances, SDG&E will mow at least once every 2 years. The Project Biologist will conduct

checks on mowing procedures to ensure that mowing for temporary or permanent access roads is limited to a 4-m-wide (14-ft-wide) area on straight portions of the road and a 5 to 6-m-wide (16 to 20-ft-wide) area at turns, and that the mowing height is no less than 10 centimeters (cm) [4 inches (in)] from finished grade.

G-CM-32 This conservation measure reflected SDG&E's commitment to conduct updated surveys for federally listed species. This conservation measure was complied with prior to reinitiation of consultation on the modified SRPL Project.

G-CM-33 Prior to construction, plant population boundaries designated as listed or proposed by the Wildlife Agencies and other resources designated as listed or proposed by SDG&E and other resource agencies will be clearly delineated with visible flagging or fencing, which will remain in place for the duration of construction. Flagged areas will be avoided to the extent practicable during construction activities in that area. Where these areas cannot be avoided, focused surveys for covered plant species will be performed. Notification of presence of any covered plant species to be removed in the work area will occur within 10 working days prior to construction activity, during which time the Wildlife Agencies may remove such plant(s) or recommend measures to minimize or reduce the impact. If neither the Service nor CDFG has removed such plant(s) within 10 working days following written notice, SDG&E may proceed with work. In such cases, SDG&E will move plants to a nursery and hold them for up to 1 year while the Wildlife Agencies determine a specific relocation program.

G-CM-34 This conservation measure included guidelines provided by CDFG for native tree restoration. In accordance with the Habitat Restoration Plan approved by the Wildlife Agencies, SDG&E will not be restoring trees so these guidelines are no longer needed.

G-CM-35 Plant species identified as rare by the land managing agency will be salvaged where avoidance is not feasible. Generally, salvage may include removal and stockpiling for replanting on site; removal and transplanting out of surface-disturbance area; removal and salvage by private individuals; and removal and salvage by commercial dealers; or any combination. Plant or wildlife species will not be collected except by the Project Biologist specifically directed by the Wildlife Agencies to do so.

G-CM-36 No wildlife, including rattlesnakes, may be harmed except to protect life and limb. Firearms will be prohibited in all SRPL Project areas except for those used by security personnel.

G-CM-37 SDG&E will ensure that feeding of wildlife by SDG&E personnel or contractors is prohibited.

G-CM-38 To minimize significant disturbance, injury or killing of wildlife and to prevent the introduction of destructive animal diseases to native wildlife populations, SRPL Project personnel will not be allowed to bring pets into any SRPL Project area.

G-CM-39 All steep-walled trenches or excavations used during construction will be covered at all times except when being actively used. If the trenches or excavations cannot be covered, exclusion fencing (i.e., silt fencing) will be installed around the trench or excavation, or it will be covered to prevent entrapment of wildlife. Open trenches, or other excavations that could entrap wildlife will be inspected by the Project Biologist a minimum of three times per day and immediately before backfilling. Should a dead or injured listed species be found in a trench or excavation or anywhere in the construction zone or along an access road, the Project Biologist will contact the CPUC, BLM, USFS, and Wildlife Agencies within 48 hours of detection. The Project Biologist will report the species found, the location of the finding, the cause of death (if known), and will submit a photograph and any other pertinent information. Construction holes left open over night will be covered. Covers will be secured in place nightly, prior to workers leaving the site, and will be strong enough to prevent livestock or wildlife from falling through and into a hole. Holes and/or trenches will be inspected prior to filling to ensure absence of mammals and reptiles. Excavations will be sloped on one end to provide an escape route for small mammals and reptiles.

G-CM-40 Employees and contractors will be required to look under vehicles and equipment for the presence of wildlife before movement. If wildlife is observed, no vehicles or equipment will be moved until the animal has left voluntarily or is removed by the Project Biologist.

G-CM-41 SDG&E will ensure that the following conditions are implemented during project construction:

- Disposal or temporary placement of excess fill, brush or other debris will not be allowed in waters of the United States or their banks;
- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will occur in designated areas outside of waters of the United States within the fenced project impact limits. These designated areas will be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering waters of the United States and will be shown on the construction plans. Fueling of equipment will take place within existing paved areas or designated fueling areas designed to contain fuel drips greater than 30.5 m (100.0 ft) from waters of the United States. Contractor equipment will be checked for leaks prior to operation and repaired as necessary. “No-fueling zones” will be designated on construction plans and/or within the stormwater pollution prevention plan.

G-CM-42 A minimum of a 30.5-m (100.0-ft) riparian buffer will be maintained between all construction/staging areas, except where the access roads cross riparian areas.

2. Operations and Maintenance Phase

General Conservation Measures G-CM 2, G-CM 4, G-CM-5, G-CM-8 to G-CM-10, G-CM-12 to G-CM-16, G-CM-21, G-CM-23, G-CM-25, G-CM-31 and G-CM-33 to G-CM-41 will also be implemented during the O&M phase of the SRPL Project.

G-CM-43 A Project Biologist employed by SDG&E will send annual monitoring reports of maintenance activities to the Wildlife Agencies, CPUC, BLM, and USFS (for sections of the project that require monitoring of maintenance activities on National Forest lands) that describe the types of maintenance that occurred, at what locations they occurred, and a quantification of the impacts that occurred by acreage and habitat type. Other than for the routine maintenance of access roads containing no habitat, as determined by the Project Biologist, the Project Biologist will be present during those maintenance activities requiring ground disturbance within habitat. These activities may include the clearing of vegetation in and around tower foundations/legs or vegetation encroaching an access road or work area, the repair of areas subject to flooding or scouring, or the trimming and clearing for temporary access to repair a tower or conductor.

G-CM-44 The area limits of project maintenance and survey activities will be predetermined based on the temporary and permanent disturbance areas noted on the final design engineering drawings, with activity restricted to and confined within those limits, within SDG&E's ROW. In addition, survey personnel will keep survey vehicles on existing roads. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate limits of survey or maintenance activity where any sensitive biological resources or wildlife habitats occur.

G-CM-45 This conservation measure addressed habitat acquisition commitments to offset impacts to O&M activities. This conservation measure is now reflected in **G-CM-17**.

G-CM-46 This conservation measure addressed avoiding impacts to drainages and stream banks as well as updating species surveys for federally listed riparian species. This conservation measure has been complied with.

G-CM-47 As part of the environmental training program, field crews will be trained to recognize the importance of invasive plant species control and will be informed of the measures designed to control the spread of invasive species. Deliberate introduction of invasive plants or animals into any project site is prohibited. Heavy equipment will be inspected for invasive plant seeds or other plant material prior to entering an access road or a project site. Any plant seeds or other plant material discovered on heavy equipment will be manually removed. All seeds and straw materials used during O&M activities will be certified weed free, and all gravel and fill material would be certified weed free by the San Diego County Agriculture Commissioner's Office.

G-CM-48 This measure addressed access road maintenance and compensation for new impacts if maintenance schedules were not followed. This measure has been revised based on new information concerning O&M activities and to acknowledge the conservation SDG&E has already provided to offset these impacts.

Access roads will be maintained once every 2 years. If this schedule is not adhered to, SDG&E will provide a written assessment of the current habitat conditions to the Wildlife Agencies prior to proceeding with the overdue road maintenance. This measure is necessary to determine whether loss of habitat due to overdue access road maintenance is considered a new permanent impact outside (i.e., over and beyond) the annual habitat clearing limits and take thresholds established for O&M activities.

G-CM-49 Brush clearing around any project facilities (e.g., structures, substations) for fire protection, visual inspection, or project surveying in areas that have been previously cleared or maintained within a 2-year or shorter period will not require a pre-activity survey. In areas not cleared or maintained within a 2-year period, brush clearing will not be conducted during the breeding season (March through August) without a pre-activity survey for vegetation containing active nests, burrows, or dens. The pre-activity survey performed by the Project Biologist will make sure that the vegetation to be cleared contains no active migratory bird nests, burrows, or active dens prior to clearing. If occupied migratory bird nests are present, fire protection or visual inspection brush clearing work will be avoided until after the nesting season, or until the nest becomes inactive. If no nests are observed, clearing may proceed. Where burrows or dens are identified in the reconnaissance-level survey, soil in the brush clearing area will be sufficiently dry before clearing activities occur to prevent mechanical damage to burrows that may be present.

G-CM-50 Brush clearing and other construction activities will occur outside the general avian breeding season (February 15 through September 15). All vegetation clearing, except tree trimming or removal, will take place outside of the general avian breeding season), when feasible. Tree trimming or removal will only take place between September 16 and December 31 (i.e., outside the raptor breeding season of January 1 through September 15).

For brush clearing and/or other construction activities that cannot occur outside the above-listed breeding seasons, a Project Biologist will work with a qualified acoustician to determine if the construction activity will meet or exceed the 60 dB(A) Leq hourly noise in areas where nesting territories occur. If the noise threshold will not be met or exceeded at the edge of nesting territories, then brush clearing and/or other construction activities may proceed. If the noise threshold will be met or exceeded at the edge of nesting territories, pre-construction surveys for nests will be conducted by a Project Biologist (Service-approved biologist for listed species) within 91 m (300 ft) of the construction area no more than 7 days prior to initiation of construction that will occur within the avian breeding season.

- If active nests are found, work may proceed provided that methods, determined by the qualified acoustician to be effective, are implemented to reduce noise below the

threshold. These methods include, but are not limited to, turning off vehicle engines and other equipment whenever possible and/or installing a protective noise barrier between a nesting territory and maintenance activities. If the qualified acoustician determines that no methods will reduce noise to below the threshold, maintenance will be deferred until the nestlings have fledged or the nest has failed, as determined the Project Biologist. Where noise-reducing methods are employed, active nests will be monitored by the Project Biologist on a weekly basis until maintenance is complete or until the nestlings fledge or the nest fails, whichever comes first. The Project Biologist will be responsible for documenting the results of the pre-maintenance nest surveys and the nest monitoring and for reporting these results to the CPUC, BLM, USFS, and Wildlife Agencies.

G-CM-51 Maintenance activities will occur outside the general avian breeding season, where feasible. For other maintenance activities that cannot occur outside the above-listed breeding seasons, SDG&E will follow the requirements in G-CM-50 for noise reduction at nest sites.

Species-Specific Conservation Measures¹⁰

Coastal California Gnatcatcher

SS-CM-1 All initial ground- or vegetation-disturbing project activities, including project construction and O&M activities, within suitable gnatcatcher habitat (see Figure 2) will be conducted outside of the gnatcatcher breeding season (February 15 through August 31) in the presence of a Project Biologist. The Project Biologist will walk ahead of vegetation removal equipment and ensure that gnatcatchers are not killed or injured as a direct result of vegetation removal activities. The Project Biologist will have the authority to halt/suspend all activities until appropriate corrective measures have been completed. The Project Biologist will also be required to report non-compliance issues immediately to the Wildlife Agencies.

SS-CM-2 For standard O&M activities in previously impacted areas requiring brushing or grading of vegetation in suitable gnatcatcher habitat, SDG&E will conduct these activities outside of the gnatcatcher breeding season, where feasible. Standard O&M activities are generally expected to occur within 2-year maintenance cycles, and when carried out under these circumstances, the Wildlife Agencies concur that the presence of a Project Biologist is not

¹⁰ The original numbering for the Species-Specific Conservation Measures from the 2009 biological and conference opinion could not be maintained here due to changes in the project that reduced impacts to listed species. Thus, these revised and re-numbered measures supersede the Species-Specific Conservation Measures in the 2009 biological and conference opinion. In general, conservation measures were deleted to reflect that the measures were complied with (e.g., project designs made to avoid habitat for listed species) or revised for clarity. Two exceptions are the deletion of the requirement for an arroyo toad predator program on USFS lands and of the requirement to implement a cowbird trapping program in consultation with the USFS. In acknowledgement of the reduced impacts to arroyo toad and vireo, these measures were not necessary to support our non-jeopardy determinations. In addition, SDG&E committed significant conservation to these species, despite the reduced impacts of the project.

required because vegetation sufficient to support gnatcatchers is not likely to re-establish within a 2-year timeframe. If the maintenance cycle is not maintained, but activities will still occur outside the gnatcatcher breeding season, SDG&E will conduct the activities in accordance with **SS-CM-1**, unless a Project Biologist confirms that no suitable gnatcatcher habitat has re-established.

SS-CM-3 When construction or O&M activities must be conducted during the gnatcatcher breeding season within suitable gnatcatcher habitat, the following avoidance measures will apply:

- A Project Biologist will survey for gnatcatchers within 10 days prior to initiating activities in an area. The results of the survey will be submitted to the Wildlife Agencies for review and approval prior to initiating any construction or O&M activities within occupied habitat. If gnatcatchers are present, a Project Biologist will survey for nesting activity approximately once per week within 152 m (500 ft) of the construction area for the duration of the activity.
- If an active nest is located, a 91-m (300-ft) no-construction buffer will be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. SDG&E will contact the Wildlife Agencies to determine the appropriate buffer zone. To the extent feasible, no construction or O&M activities will take place within this buffer zone until the nest is no longer active. However, if construction must take place within the 91-m (300-ft) buffer, a qualified acoustician will monitor noise as construction or O&M activities approaches the edge of the occupied gnatcatcher habitat as directed by the Project Biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the Project Biologist determines that the activities in general are disturbing the nesting activities, the Project Biologist will have the authority to halt construction or O&M activities and will consult with the Wildlife Agencies to devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting gnatcatchers and the activities, and working in other areas until the young have fledged.

SS-CM-4 SDG&E will complete the purchase and provide for the long term management of occupied gnatcatcher habitat at the Lakeside Ranch and Hamlet properties. Long-term management of the Lakeside Ranch property will include restoration of 20 ha (50 ac) of coastal sage scrub. Temporary impacts to occupied habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Least Bell's Vireo

SS-CM-5 During construction and O&M activities all grading or brushing taking place within suitable vireo habitat will be conducted outside the vireo breeding season (defined as March 15 through September 15).

When construction or O&M activities must occur during the breeding season within 152 m (500 ft) of suitable habitat, a Project Biologist will survey for vireos within 10 days prior to initiating activities in an area. The results of the survey will be submitted to the Wildlife Agencies for review and approval prior to initiating any construction activities.

- During construction or O&M activities, if vireos are present, a Project Biologist will survey daily for nesting vireos within 152 m (500 ft) of the construction area, for the duration of the activity in that area during the breeding season. If an active nest is located, a 91-m (300-ft) no-construction buffer zone will be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. SDG&E will contact the Wildlife Agencies to determine the appropriate buffer zone. No construction or O&M activities will take place within this buffer zone until the nest has fledged or is no longer active. If construction must take place within the buffer, a qualified acoustician will monitor noise as construction approaches the edge of the occupied vireo habitat as directed by the Project Biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the Project Biologist determines that construction activities are disturbing nesting activities, the Project Biologist will have the authority to halt construction and will consult with the Wildlife Agencies, BLM and USFS, to devise methods to reduce the noise and/or disturbance. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting birds and the activities, and working in other areas until the young have fledged. The Project Biologist will monitor the nest daily until activities are no longer within 91 m (300 ft) of the nest, or the fledglings become independent of their nest or the nest has failed.

SS-CM-6 SDG&E will complete the purchase and provide for the long-term management, of suitable vireo habitat at the Nabi, Chocolate Canyon, and Long Potrero properties. Temporary impacts to suitable habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Quino Checkerspot Butterfly

SS-CM-7 A Project Biologist will be present during all construction and O&M activities within designated critical habitat and occupied Quino habitat to monitor and assist the construction crews to ensure impacts occur only as allowed.

SS-CM-8 The details of any site-specific restoration for temporarily impacted Quino habitat, including designated critical habitat, will be based on Appendix II of the Quino recovery plan (Service 2003) and described in a plan to be reviewed and approved by the Service. The site specific restoration plan will include, but not be limited to: (1) larval host plants (local stock, if possible) to be planted; (2) nectar resources; (3) irrigation needs and/or other establishment procedures; (4) timeline for implementation; (5) success criteria; (6) contingency measures for success criteria that are not met; (7) weed control measures; (8) monitoring program; and (9) implementation schedule. The site-specific restoration plan will be prepared and submitted to

the Wildlife Agencies within 1 year of initiating ground- or vegetation-disturbing project activities. Success criteria will be modeled on undisturbed native plant communities in the vicinity of the proposed project and sites within the area known to be occupied by Quino.

SS-CM-9 To ensure that impacts of O&M activities are not concentrated on any specific Quino occurrence complex without specific analysis of potential impacts to the complex, no more than 4 ha (10 ac) of Quino habitat will be removed for O&M activities over the life of the project within any one occurrence complex unless the habitat loss is assessed and approved by the Service. Quino occurrence complexes are defined by the MP limits described in the Environmental Baseline of this analysis.

SS-CM-10 SDG&E will complete the purchase and provide for the long term management of occupied Quino habitat at the Long Potrero property. Temporary impacts to occupied habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Arroyo Toad

SS-CM-11 SDG&E will implement the Arroyo Toad Translocation and Monitoring Program (Appendix 4) during construction and O&M activities for all activities requiring 2 ha (5 ac) of habitat removal or greater that occur adjacent to occupied breeding and/or within upland aestivation sites, including impact sites within proposed critical habitat.

SS-CM-12 To avoid and minimize impacts to arroyo toads, access road construction and use during construction and O&M activities, with the exception of emergency situations, will occur during daylight hours (from 2 hours after sunrise to 2 hours before sunset) when amphibian movement is less frequent.

SS-CM-13 No construction activities will take place within arroyo toad breeding habitat. With the exception of emergencies (e.g., downed power lines), O&M activities that require work within arroyo toad breeding habitat will be planned to avoid the arroyo toad breeding season (March 15-July 31) to minimize potential impacts to breeding adults (including potential sedimentation impacts to toad eggs) and dispersing juveniles.

SS-CM-14 To avoid long-term impacts to wildlife movement, including, but not limited to arroyo toad movement within the action area, all temporary arroyo toad exclusion fencing and any temporary fencing used during construction and O&M activities will be removed concurrent with completion of the activities.

SS-CM-15 SDG&E will complete the purchase and provide for the long-term management of occupied arroyo toad breeding habitat at the Long Potrero and Nabi sites. Temporary impacts to occupied breeding and occupied upland aestivation habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Peninsular Bighorn Sheep

SS-CM-16: Construction activities and O&M activities (including the use of helicopters) in suitable PBS habitat will be prohibited during the lambing season (January 1 through June 30). Construction activities may occur from July 1 through December 31 so long as the provisions and recommendations of the *Peninsular Bighorn Sheep Construction Monitoring Plan* are adhered to (Appendix 5). Suitable PBS habitat will be defined as the area delineated as essential in the PBS recovery plan (Service 2000). Exceptions to **SS-CM-16** may be approved by the Wildlife Agencies.

SS-CM-17: Temporary impacts to suitable bighorn sheep habitat will include 1:1 onsite restoration. Restoration involves re-contouring the land; replacing topsoil (where topsoil collection is appropriate); hand seeding, where appropriate; and salvaging and scattering segments of cholla (*Cylindropuntia* spp.) across impact areas.

SS-CM-18: A Project Biologist(s) will be retained by SDG&E to collect data on PBS movements in the area during the construction phase, supervise and train assisting biologists, and work with representatives of SDG&E to lessen the impacts of project construction on PBS. The Project Biologist(s) and SDG&E will adhere to the provisions and recommendations of the PBS Monitoring Plan. In general, helicopters will follow regular flight corridors coinciding with the ROW to the maximum extent possible and avoid low-flying "short-cuts" or sight-seeing trips away from the project site. Helicopters will avoid flying within 0.6 mi (1.0 km) of PBS water sources. Helicopter landing areas, vehicle parking sites, and fly yards will be sited at least 0.6 mi (1 km) from PBS water sources and other key resource areas identified by Project Biologist. When PBS are detected within the I-8 Island, construction operations will cease until PBS leave the area and/or the Project Biologist determines work may proceed as outlined in the PBS Monitoring Plan.

SS-CM-19: To help reconnect desert bighorn sheep subpopulations and at least partially offset impacts to the overall population caused by the project, SDG&E will:

- Complete the purchase of 2,331 ha (5,760 ac) of land identified as the Desert Cahuilla Property in the HAP. As explained in Table DC-1 of the HAP, this purchase will result in adding approximately 2,214 ha (5,471 ac) of suitable PBS habitat to the Anza-Borrego Desert State Park. The habitat purchased and added to Anza-Borrego Desert State Park will promote habitat connectivity and be managed consistent with the continued survival and recovery of PBS. As described in the HAP, SDG&E will provide approximately \$4.5 million for future management of the lands acquired by the Anza-Borrego Desert State Park in addition to the funds required for initial acquisition.

- Fund, design, construct, and provide for maintenance of a system of warning devices, signs, and fences to reduce the probability of PBS deaths due to vehicle collisions while crossing I-8. Fencing, signage, and warning devices will be designed in consultation with the California Department of Transportation (Caltrans) and the Wildlife Agencies to facilitate PBS movement through/across the island using structures currently present, such as the bridges spanning Devil's Canyon and the culverts/low bridge along eastbound I-8. A feasibility study and proposed course of action will be completed before the transmission line is energized, and systems and structures will be operational within 5 years of the date the line is energized.
- Fund removal of tamarisk, fountain grass, other invasive species, and hazardous fences for the life of the SRPL Project in the action area and install and maintain water sources per direction and at locations specified by the Wildlife Agencies for the life of the SRPL Project.
- Fund a minimum 10-year-long program to monitor the effects of the SRPL Project on PBS behavior, movements, and dispersal in the area from Carrizo Gorge south to the international boundary and also including lands acquired by Anza-Borrego Desert State Park as a result of the SRPL Project, as described above. Ten years is needed to measure the influence of the SRPL Project while factoring in rainfall cycles, vegetative productivity, and drought. This program will be designed and implemented by the Wildlife Agencies and will include time periods prior to, during, and following construction. Funding for the SRPL Project will total \$1.5 million dollars. SDG&E will provide funding to a third party designated by the Wildlife Agencies.
- SDG&E will provide sufficient funds to a third party designated by the Wildlife Agencies, to ensure five complete biennial aerial surveys from Carrizo Gorge to the international boundary, for the 10-year period beginning with the scheduled 2010 aerial survey conducted by CDFG.
- SDG&E will ensure water used for operation and maintenance purposes will not be obtained from water sources used by PBS.

Flat-tailed Horned Lizard

SS-CM-20 SDG&E will implement avoidance, mitigation and compensation measures consistent with the Flat-Tailed Horned Lizard Rangewide Management Strategy (FTHL RMS) (FTHL ICC 2003). The FTHL RMS includes the following requirements:

- To the extent possible, surface-disturbing projects will be located outside the FTHL Management Area (MA) and will be timed to minimize mortality. If a project must be located within an MA, effort will be made to locate the project in a previously disturbed area or in an area where habitat quality is poor.

- Prior to SRPL Project initiation, an individual will be designated as a field contact representative. The field contact representative will have the authority to ensure compliance with protective measures for the FTHL and will be the primary agency contact dealing with these measures. The field contact representative will have the authority and responsibility to halt activities that are in violation of these terms and conditions.
- All project work areas will be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers will restrict their activities and vehicles to areas that have been flagged to eliminate adverse impacts to the FTHL and its habitat. All workers will be instructed that their activities are restricted to flagged and cleared areas. **(G-CM-6)**.
- Within FTHL habitat, the area of disturbance of vegetation and soils will be the minimum required for the project. Clearing of vegetation and grading will be minimized. Wherever possible, rather than clearing vegetation and grading the ROW, equipment and vehicles will use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils will be stockpiled and replaced following construction to facilitate habitat restoration. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. **(G-CM-12)**.
- Existing roads will be used for travel and equipment storage whenever possible. **(G-CM-6, G-CM-8, G-CM-21)**.
- Where feasible and desirable, in the judgment of the lead agency, newly created access routes will be restricted by constructing barricades, erecting fences with locked gates at road intersections, and/or by posting signs. In these cases, the project proponent will maintain, including monitoring, all control structures and facilities for the life of the SRPL Project and until habitat restoration is completed. **(G-CM-26)**.
- A Project Biologist will be present in each area of active surface disturbance throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of FTHLs by a Project Biologist. The monitor(s) will perform the following functions:
 - a. Develop and implement a worker education program. Wallet-cards summarizing this information will be provided to all construction and maintenance personnel. The education program will include the following aspects at a minimum:
 - i. biology and status of the FTHL,
 - ii. protection measures designed to reduce potential impacts to the species,
 - iii. function of flagging designating authorized work areas,
 - iv. reporting procedures to be used if a FTHL is encountered in the field, and

- v. importance of exercising care when commuting to and from the project area to reduce mortality of FTHLs on roads.
 - b. Ensure that all project-related activities comply with these measures. The Project Biologist will have the authority and responsibility to halt activities that are in violation of these terms and conditions.
 - c. Examine areas of active surface disturbance periodically (at least hourly when surface temperatures exceed 85°F) for the presence of FTHLs. In addition, all hazardous sites (e.g., open pipeline trenches, holes, or other deep excavations) will be inspected for the presence of FTHLs every morning prior to starting construction activities, mid-afternoon, and prior to leaving and/or prior to backfilling.
 - d. Work with the project supervisor to take steps, as necessary, to avoid disturbance to FTHLs and their habitat. If avoiding disturbance to a FTHL is not possible or if a FTHL is found trapped in an excavation, the affected lizard will be captured by hand and relocated. **(G-CM-1)**.
- Sites of permanent or long-term (greater than 1 year) projects in the MAs where continuing activities are planned and where FTHL mortality could occur, may be enclosed with FTHL barrier fencing to prevent lizards from wandering onto the SRPL Project site where they may be subject to collection, death, or injury. Barrier fencing should be in accordance with the standards outlined in Appendix 7 of the FTHL RMS. After clearing the area of the FTHLs, no onsite monitor is required.
 - The project proponent will develop a SRPL Project-specific habitat restoration plan under approval by the lead agency. The plan will consider and include as appropriate the following methods: replacement of topsoil, seedbed preparation, fertilization, seeding of species native to the area, noxious weed control, and additional erosion control. Generally, the restoration objective will be to return the disturbed area to a condition that will perpetuate previous land use. The project proponent will conduct periodic inspection of the restored area. Restoration will include eliminating any hazards to FTHLs created by construction, such as holes and trenches in which lizards might become entrapped. Disturbance of existing perennial shrubs during restoration will be minimized, even if such shrubs have been crushed by construction activities. **(G-CM-16)**.

GENERAL ENVIRONMENTAL BASELINE

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

Action Area

The “action area” is defined (according to 50 CFR. § 402.02, and pursuant to section 7 of the Act) as all areas directly or indirectly affected by the Federal action and not merely the immediate area involved in the action. For this consultation, the action area was delineated to encompass lands within 91 m (300 ft) of the ROW centerline for the 188-km (117-mi) Sunrise Powerlink transmission line and specific project components beyond 91 m (300 ft) of the ROW centerline (e.g., construction yards and access roads). In addition, because PBS are large wide-ranging mammals that use the landscape at a much larger scale than other listed species occurring in the SRPL Project area, the “action area” was expanded where the ROW crosses PBS habitat to encompass surrounding ridgelines as described below. This approach is consistent with that taken in other section 7 consultations within in the Service’s geographic area of jurisdiction in Southern California. These impact and adjacent areas include 5,422 ha (13,387 ac) of land. The action area also includes the offsite conservation parcels acquired to offset construction and O&M impacts on listed species (Figure 1). The offsite conservation lands encompass 3,621 ha (8,940 ac).

- The configuration of the SRPL Project ROW is that identified in the Final EIR/EIS for the SRPL Project as the FESSR, as refined in the PMR (SDG&E 2010d) and approved by the BLM and CPUC in their determination memorandum dated September 22, 2010 (CPUC 2008).
- The SRPL Project components are as identified in the PMR and summarized in the “Project Description” section of this biological and conference opinion. Most components of the SRPL Project occur within the ROW. Exceptions include construction yards, some access roads, and some tower staging access pads (TSAPs).
- The offsite mitigation lands are those identified in the HAP that was developed in coordination with the Wildlife Agencies and the other local agencies and submitted for approval in September 2010. The HAP addresses all offsite acquisition and conservation requirements for SRPL Project impacts to federally listed and proposed species.
- Because PBS are large wide-ranging mammals that use the landscape at a much larger scale than other listed species occurring in the SRPL Project area, the action area was enlarged to account for the expanded scale at which PBS perceive their environment. To address PBS, the action area was delineated on an aerial photo by following ridgelines that encompass the basin containing the SRPL Project area. It was assumed that helicopters will be visible and in proximity to bighorn sheep present within the area delineated. Animals crossing over ridgelines or already located outside the action area should feel secure due to being out of the direct line-of-sight and having a greater distance between them and the SRPL Project area (Light and Weaver 1973). In addition, the portion of the action area that includes potential impacts to PBS has been refined since issuance of the 2009 biological and conference opinion to more accurately reflect topographic features in the Carrizo Gorge and to include

the Coyote Mountains. The Coyote Mountains have been added to the action area because it has recently been reported that PBS use this area during the anticipated SRPL Project construction season.

The proportion of Federal, State, local agency, and private lands within the action area varies along the alignment. Collectively, BLM and private lands account for the most acreage in the action area. Other Federal lands in the action area include Cleveland National Forest and a small portion of MCAS Miramar.

The types of vegetation communities and special status species within the action area also vary along the alignment. To provide a frame of reference for the evaluation of effects, the action area is divided into the same subareas that are used to describe the SRPL Project alignment and components. These subareas include five links of the transmission line, existing 69 kV lines between existing substations that require reconductoring, and existing SDG&E substations that require system upgrades. Table 7 indicates the location, land ownership, and primary vegetation communities in these subareas; it also identifies the Federally listed or proposed species affected by the SRPL Project in these areas.

Table 7. Action Area and Project Alignment Subareas.

Subunit	Location	Ownerships	Primary Vegetation	Federally Listed/ Proposed Species Affected by Project
Link 1 (500 kV line)	Imperial County and San Diego County, MP-0 to MP-53.5	BLM, Private, State	Desert Scrubs, Chaparrals, Montane Scrubs	Peninsular Bighorn Sheep, Flat-Tailed Horned Lizard, Quino Checkerspot
Link 2 (500 kV line)	San Diego County, MP-53.5 to MP-89	USFS, Private, BLM	Chaparrals	Quino Checkerspot, Arroyo Toad
Link 3 (Suncrest Substation)	San Diego County, MP-89	Private	Chaparrals, Woodlands	None
Link 4 (230 kV Underground)	San Diego County, MP-92 to MP-98	Private	Developed/ Disturbed, Chaparrals	Arroyo Toad
Link 5 (230 kV Overhead)	San Diego County, MP-89 to MP-92 and MP-98 to MP-117	Private, Local Agency	Chaparrals, Coastal and Montane Scrubs, Grasslands	Quino Checkerspot, Arroyo Toad, Coastal California Gnatcatcher
Existing 69 kV Reconductoring	San Diego County: Sycamore Canyon to Pomerado, Scripps, and Elliott.	DOD	Developed/ Disturbed, Grassland	None
Existing Facility Upgrades	Imperial County: Imperial Valley Substation San Diego County: Sycamore Canyon, Encina, South Bay, San Luis Rey.	SDG&E	Developed/ Disturbed	None

Link 1 (MP0 – MP53.5)

Link 1 is a 500 kV portion of the line that extends from the Imperial Valley Substation [6 km (4 mi)] southwest of El Centro in Imperial County) to near Thing Valley Road in San Diego County, just outside the Cleveland National Forest. From the Imperial Valley Substation to near the community of Jacumba [approximately 48 km (30 mi)], the line runs parallel to SDG&E's existing Southwest Power Link (SWPL). The remainder of the link [approximately 21 km (13 mi)] veers sharply north/northwest away from the SWPL.

The action area in Link 1 includes mainly BLM managed lands, together with some interspersed private parcels and State lands. The Imperial County portion of the link also includes the portion of the action area expanded to address impacts to PBS.

The Imperial County portion of the link is part of the Colorado Desert bioregion and is characterized by desert scrub habitats. It also includes the steep, boulder covered, rugged terrain of the area known as the Mountains Springs Grade, near the Imperial-San Diego border at the I-8 split. The desert scrub transitions to chaparral and montane scrubs in the San Diego County portion of the link.

Federally listed and proposed species affected by the SRPL Project in Link 1 include PBS, Quino and FTHL.

Link 2 (MP53.5 – MP89.0)

Link 2 begins within the Cleveland National Forest at MP53 and ends about seven miles east of the City of Alpine at MP89. The line runs south/southwest from MP53 for approximately 12 miles, turns west near MP66 where it runs parallel with an existing 69 kV line for approximately 13 miles, and then runs north for remaining 10 miles.

The action area in Link 2 includes mainly USFS and private lands, together with some local agency and BLM properties. The primary vegetation communities are southern and mixed chaparral, with some grassland as well as coastal and montane scrubs. Federally listed species affected by the SRPL Project in Link 2 include Quino and arroyo toad.

Link 3 (Suncrest Substation)

Link 3 is the new Suncrest substation at the juncture of the 500 kV and 230 kV components of the line near MP89. The location of the substation was determined in consultation with USFS and the other participating agencies. It is situated south of I-8 on private lands, behind a ridgeline that blocks any view of the facility from I-8. The primary vegetation communities on the property are chaparrals and oak woodland. There are no federally listed or proposed species on the property.

Link 4 (MP92.0 – MP98.2)

Link 4 is situated between two overhead portions of the 230kV (Link 5) and includes a 10-km (6-mi) stretch where the line is underground. At MP92, the 230 kV overhead line extending west from the new Suncrest Substation will transition underground, traversing a private driveway that runs parallel with Star Valley Road and then continuing west within the ROW of Alpine Boulevard. The underground line crosses under I-8 west of Peutz Valley Road and transitions back to overhead at MP98.

The action area in Link 4 is mainly private land that is already developed or disturbed. There is some chaparral and scrub vegetation within the link. The SRPL Project will affect a small amount [0.2 ha (0.6 ac)] of critical habitat for arroyo toad in this link.

Link 5 (MP89.0 – MP92.0 and MP98.2– MP117.2)

Link 5 includes the overhead portions of the 230 kV line on either side of Link 4. The first portion begins at the Suncrest Substation and extends northwest for approximately three miles to where the line goes underground. The second portion begins near MP98 and extends in a generally northwest direction for approximately 19 miles where it terminates at SDG&E's existing Sycamore Canyon Substation.

The action area in Link 5 includes mainly local agency and private lands, with some USFS and MCAS Miramar lands. The primary vegetation communities are chaparrals, coastal scrubs, and grasslands; there also developed/disturbed areas. A substantial portion of the vegetation within this link burned in the 2007 Witch Wildfire and 2003 Cedar Wildfire. Federally listed species affected by the SRPL Project in Link 5 include Quino, arroyo toad, and gnatcatcher.

69 kV Line Reconductoring

Existing 69 kV lines between the Sycamore Canyon Substation and SDG&E's Pomerado, Scripps, and Elliot substations require reconductoring upgrades to allow for full use of the new transmission line. The upgrades entail replacing approximately 17 existing poles and replacing the pole-top insulators and conductors on existing poles and replacing 17 existing poles with new structures. The lines identified for reconductoring occur on MCAS Miramar lands and also cross private and local agency lands. Vegetation communities in the area include chaparrals, coastal scrubs, and grasslands; there are also are disturbed and developed areas. No federally listed species will be affected by the SRPL Project in connection with the reconductoring activities.

Facility Upgrades

System upgrades will occur at five existing SDG&E facilities: Imperial Valley Substation, Sycamore Canyon Substation, Encina Switchyard, South Bay Substation, and San Luis Rey Substation. All upgrades will occur within the property fence line and/or on other already disturbed land.

The action area for the facility upgrades includes mainly private and local agency lands. The surrounding vegetation for the Imperial Valley Substation upgrade is the same as identified for Link 1. The surrounding vegetation for the other upgrades is similar to that identified for Link 5. No federally listed species will be affected by the SRPL Project in connection with the substation upgrades.

Other Consultations in the Action Area

The information regarding other consultations in the action area from the 2009 biological and conference opinion on the SRPL Project are hereby incorporated by reference. Two additional consultations have been completed in the action area since the 2009 biological and conference opinion was issued. These consultations are discussed below.

On August 20, 2010, the Service provided BLM with programmatic non-jeopardy biological opinion on the California Desert Conservation Area (CDCA) Plan Amendment for the Coachella Valley (Service 2010a). This opinion revised the original biological opinion on the effects of Western Colorado (WECO) Amendment to the CDCA Plan, which was issued in December 2002. To improve the conservation and management of biological resources, especially threatened and endangered species, five bioregional planning areas were designated within the CDCA Plan area, including the Western Colorado Amendment area. The WECO amendment consisted entirely of route designations on BLM lands within Imperial County, California. The 2010 consultation specifically addresses impacts to PBS critical habitat from BLM's management actions within its portion of the CDCA in Riverside and Imperial counties in consideration of the *Gifford Pinchot Task Force v. U. S. Fish and Wildlife Service*, 378 F.3d 1059, 1070, and other recent Ninth Circuit case law. Given the programmatic nature of this biological opinion, incidental take of a specific number of individuals could not be exempted, but the take was not considered exceeded if the San Jacinto ewe group remains above 10 adult ewes and other ewe groups in the Peninsular Ranges remain above 15 adult ewes.

On September 23, 2010, the Service provided BLM with a biological and conference opinion on the Imperial Valley Solar (Solar Two) Power Plant (3031 (P) CAD000.06) (Service 2010b). The consultation addressed the effects of BLM's proposed issuance of a ROW grant that would authorize construction, operation, and decommissioning of a 2,659 ha (6,571 ac) solar plant, a solar dish Stirling engine project, and its ancillary facilities on the FTHL, PBS and its critical habitat. The incidental take statement set a threshold of 1 PBS and 2,792 FTHL, which is to be measured as up to 503 FTHL detected due to limited detection probability.

Habitat Conservation Plans within the action area

The transmission line will cross lands within the existing and proposed Multiple Species Conservation Program (MSCP) preserve (Link 4 and Link 5). These lands, located within the existing County and City of San Diego MSCP subareas, address potential impacts and conservation for 85 listed and sensitive species, including all of the species addressed in this consultation, except Quino and PBS. The housing, commercial, and infrastructure development

addressed by these habitat conservation plans (HCPs) and evaluated within the biological opinions for the County and City of San Diego's incidental take permits, along with the habitat conservation and management measures included in the HCPs, are considered part of the environmental baseline for this and future section 7 consultations.

The biological opinion for the County of San Diego's Subarea Plan under the MSCP anticipated the loss of up to 11,733 ha (28,993 ac) of gnatcatcher habitat within the County of San Diego's Subarea Plan area and all gnatcatchers within this habitat; however, approximately 29,947 ha (74,000 ac) of gnatcatcher habitat was anticipated to be conserved within the MSCP subregion. No incidental take was anticipated for vireos; however, it was anticipated that 456 ha (1,128 ac) would be conserved and managed in the County of San Diego's Multiple Habitat Planning Area (i.e., the preserve; MHPA). In addition, it was anticipated that no arroyo toads would be incidentally taken through implementation of the Subarea plan; however, 553 ha (1,366 ac) of arroyo toad breeding habitat was anticipated to be conserved and managed in the County of San Diego's MHPA.

The biological opinion for the City of San Diego's Subarea Plan anticipated the loss of up to 2503 ha (6,185 ac) of gnatcatcher habitat and all associated gnatcatchers within this habitat; however, approximately 29,947 ha (74,000 ac) of gnatcatcher habitat was anticipated to be conserved within the MSCP subregion. No incidental take was authorized for vireos; however, it was anticipated that 1,590 ha (3,930 ac) would be conserved and managed in the City of San Diego's MHPA. In addition, it was anticipated that an unquantifiable number of arroyo toads would be lost through implementation of the Subarea Plan; however, an estimated 1,684 ha (4,162 ac) of arroyo toad breeding habitat was anticipated to be conserved and managed in the City of San Diego's MHPA.

SRPL Project construction will permanently impact 6.3 ha (15.6 ac) of MSCP preserve lands and 52.1 ha (128.8 ac) outside of existing preserves, including lands within both the City and County of San Diego. In addition, 3.5 ha (8.6 ac) of temporary impacts are anticipated within the existing preserves and 96.6 ha (238.6 ac) are anticipated outside of the preserves. Utility lines and associated infrastructure are considered compatible uses with the biological objectives of the MSCP and are conditionally allowed in the MSCP preserve. To maintain consistency with the conservation goals and objectives of the MSCP, particularly in areas where existing reserves have already been established, SDG&E will offset impacts to sensitive species and vegetation consistent with MSCP mitigation ratios. Within existing reserves, mitigation ratios are doubled. As described in the HAP, the following properties will contribute to the MSCP preserve system and offset the impacts of the SRPL Project on the sensitive species and vegetation communities covered by the MSCP plans: Nabi [37.8 ha (93.5 ac)], Lakeside Ranch [173.0 ha (427.4 ac)], Hamlet [34.2 ha (84.4 ac)], El Capitan [154.3 ha (381.4 ac)], and Chocolate Canyon [30.8 ha (76.1 ac)].

The action area also includes land within the plan area for SDG&E's Subregional Natural Community Conservation Plan\HCP and their Low-effect Quino HCP, which address potential impacts from SDG&E's O&M activities and new construction on 111 federally listed and other

sensitive species, including all of the species addressed in this consultation, except PBS. The SRPL Project is outside the scope of SDG&E's existing HCP. Up to 162 ha (400 ac) of habitat for covered species was expected to be lost over a 55-year period as a result of implementation of the HCP; however, 101 ha (250 ac) of habitat for covered species was conserved that contributed toward regional conservation planning goals.

Much of the area within Links 1 through 3 is located within the proposed East County MSCP. This habitat conservation planning effort will guide development and provide for the conservation of over 150 species and is expected to be conducted over the next 3 years. Permit processing for this HCP will undergo separate section 7 consultation; thus, this HCP planning effort is not considered part of the Environmental Baseline for the proposed action.

GENERAL EFFECTS OF THE ACTION

Habitat loss and fragmentation, alteration of the quality of adjacent habitats, an increase in the potential for wildfires, and type conversion of native habitat from increased fire frequency and/or invasive plants are general effects associated with the initial construction and long-term O&M of the SRPL Project that will likely result in direct mortality and/or relocation of federally listed flora and fauna from the area of the transmission line and related facilities.

To offset and minimize these impacts, SDG&E conducted endangered and threatened species surveys along the final selected ROW and implemented specific avoidance and minimization measures in their final project design and alignment to reduce impacts to listed and other sensitive species and their habitats, including designated and proposed critical habitat. Impacts have been minimized by reducing the number of tower structures by 8 percent and the number of wire stringing sites by 40 percent; eliminating 74 miles of new access roads, which is nearly a 60 percent reduction; eliminating 24 temporary construction yards, a reduction of over 50 percent; and increasing the use of helicopters during construction to reduce on-the-ground impacts to habitat (SDG&E 2010d).

With these modifications, SDG&E has reduced the overall habitat impacts of the SRPL Project by 337.21 ha (833.26 ac), which includes a 103.92-ha (256.79-ac) reduction in permanent impacts and a 233.29-ha (576.47-ac) reduction in temporary impacts, when compared to the impacts expected and evaluated in the 2009 biological and conference opinion. The changes in impacts to listed and proposed species habitat, including designated and proposed critical habitat are shown in Table 8.

SDG&E has also committed to significant conservation of listed and other sensitive species habitat, including designated and proposed critical habitat. These and other conservation measures are identified in the project description and fully considered in the species-specific effects analyses of this revised biological and conference opinion.

Table 8. Reduction of project impacts by species

Species Impacted	2009 Biological/Conference Opinion (acres)		Modified Project (acres)	
	Permanent	Temporary	Permanent	Temporary
Gnatcatcher Occupied Habitat	53.6	106.2	15.9	5.8
Gnatcatcher Critical Habitat	11.3	18.7	3.8	22.0
Vireo Occupied Habitat	8.3	12.3	3.1	13.2
Quino Occupied Habitat	40.3	93.6	15.2	17.5
Quino Critical Habitat	8.5	6.6	4.5	1.6
Arroyo Toad Suitable Habitat	25.9	182.8	15.0	84.0
Arroyo Toad Proposed Critical Habitat ¹¹	-----	-----	2.5	44.2
PBS Occupied Habitat ¹²	27.3	116.1	10.4	20.2
PBS Critical Habitat ¹³	-----	-----	5.4	1.4

Habitat Loss

Construction of the SRPL Project will result in loss of approximately 398.02 ha (983.53 ac) of habitat including 120.76 ha (298.41 ac) of permanent impacts and 277.26 ha (685.12 ac) of temporary impacts (Table 2). Permanent impacts to listed species habitat will result from construction of towers, tower pads, access roads, spur roads, and a new substation. Temporary impacts will result from construction of pull sites, fly yards, and staging areas. Road maintenance could cause loss of plants and habitat that are on or immediately adjacent to the road; this can occur when heavy equipment is used to re-grade the road or clear debris off the roadway, create drainage leadouts, or clear culverts.

Standard O&M activities such as access and spur road repair and maintenance, including road grading; fuel (i.e., vegetation) clearing around towers and other structures; and reconductoring are anticipated to include only minor impacts to listed species and have been estimated by SDG&E to include clearing of 24 ha (60 ac) of habitat on an annual basis. Most [18 ha (45 ac)] of the annual clearing for standard O&M activities will occur in the San Diego portion of the action area, with only a minor amount of impact [6 ha (15 ac)] expected within the Imperial County portion of the action area. There is also a very low probability that SDG&E will be required to clear habitat to address or reduce concern for transmission-line related fires. In this instance, SDG&E estimates impacting no more than 202 ha (500 ac) of habitat over the life of the SRPL Project for O&M activities related to fire prevention and management. All O&M activities related to fire prevention and management are expected to occur in the San Diego

¹¹ No arroyo toad critical habitat or proposed critical habitat existed when the project was analyzed in the 2009 biological and conference opinion.

¹² PBS 2001 critical habitat designation is used as a surrogate for occupied habitat

¹³ The revised PBS critical habitat designation was not available when the project was analyzed in the 2009 biological and conference opinion.

County portion of the action area. The action area within Imperial County is dominated by open desert communities that are much less prone to transmission line-related fires.

Habitat Fragmentation

Habitat fragmentation as a result of transmission line construction is expected, especially where new access roads and spur roads are needed. In southern California the effects of fragmentation have been shown to decrease the number of resident bird species, decrease the diversity of small rodents, and decrease the diversity and cover of native plant species (Soulé et al. 1988, Bolger et al. 1991, Alberts et al. 1993, Bolger et al. 1997). Fragmentation can result in landscapes with many small habitat patches rather than few large patches. Small habitat patches tend to have altered species composition, reduced community diversity, and smaller population sizes for individual species. Species with greater susceptibility to the effects of reduced habitat patch size are more likely to be extirpated from these small patches.

Reduced community diversity and altered species composition can change natural ecological functions, which can result in unpredictable effects given the complexity of community dynamics. Smaller populations are more susceptible to extirpation due to random fluctuations in population dynamics or catastrophic events (Ewens et al. 1987, Shaffer 1987). Small habitat patches also have high perimeter to area ratios, which increases edge effects that can result in even smaller populations. If small populations are isolated from nearby populations, they will be susceptible to deleterious genetic effects of inbreeding depression (Lande and Barrowclough 1987), and extirpated populations may not be replaced by dispersing individuals from other populations (Gilpin 1987).

Fragmentation studies by Soulé et al. (1988) and Crooks and Soulé (1999) concluded that the decline of top predators in fragmented landscapes could lead to the release of smaller predators that, in turn, strongly limit populations of prey species. This phenomenon, known as mesopredator release, has been implicated in the decline and extinction of prey species worldwide (Willis and Eisenmann 1979, Matthiae and Stearns 1981, Whitcomb et al. 1981, Wilcove et al. 1986, Soulé et al. 1988, Terborgh 1988, Sovoda et al. 1995, Crooks and Soulé 1999, Haas and Crooks 1999).

Alteration of Adjacent Habitats

Construction and maintenance of the SRPL Project could result in degradation of habitats adjacent to the SRPL Project through erosion, dust, pollution, sedimentation, light, and noise. Changes in water runoff patterns could result from road construction and maintenance (i.e., repeated road grading) and lead to erosion. For example, roads that run straight up hillsides can promote soil erosion and the development of rills and gullies. In addition, roads that run parallel to elevation contours can also alter runoff patterns because berms on the edge of the road can redirect water along the road edge to low points, after which water continues on down slope in a more concentrated stream than otherwise would have occurred. This process concentrates

channels at higher slope positions (Montgomery 1994), resulting in more elongated first-order drainage basins, and accelerated rates of soil erosion (Forman and Alexander 1998).

Roads with dirt surfaces can be a significant source of dust. Dust generated by motorized vehicles can cover plants and interfere with physiological functions ultimately affecting plant vigor, reproduction, and survival. Dust is likely to be generated from SRPL Project construction (e.g., during access and spur road construction and during tower construction) and during O&M activities, particularly during road re-grading activities and patrols.

Road maintenance could also affect threatened and endangered species and their designated and proposed critical habitats through the deposition of oil, fuel, or other toxic substances into waterways, which could result in mortality of amphibian eggs and young. In addition, runoff from SRPL Project construction and road maintenance could cause stream and waterway sedimentation adjacent to the SRPL Project area. The effect of this sedimentation would vary depending on the amount of sediment introduced into the stream, the amount of stream flow, gradient and several other instream factors.

SRPL Project construction could result in increased noise and light if construction is conducted at night within or adjacent to the ROW. Noise could affect wildlife species, particularly birds, by reducing their ability to communicate. For example, Reijnen et al. (1995) documented a reduced ability of male willow warblers close to highways to attract and keep mates possibly due to the distortion of the song by traffic noise. Helicopter activity, in particular, has been shown to have a detrimental effect on sheep. Night lighting could increase predation in areas adjacent to the ROW by making individuals more visible, and thus more vulnerable to predators. In addition, night lighting could cause animals (e.g., arroyo toads) to become disoriented and thus more vulnerable to depredation.

Fire

Fire frequency is expected to increase as a result of the operation of the SRPL Project. Electrical transmission lines have been shown to be the ignition source for large catastrophic wildfires. For example, in October of 2007, the Witch Fire in San Diego County, California, was ignited by arcing electrical transmission lines (California Department of Forestry and Fire Protection Investigation Report, dated July 1, 2008; Case No. 07-CDF-570). In addition to sparks generated from arcing wires during high winds, transmission lines can ignite fires through the following:

- Vegetation contact with conductors
- Exploding hardware such as transformers and capacitors
- Floating or wind-blown debris contact with conductors or insulators
- Conductor-to-conductor contact
- Wood support poles being blown down in high winds
- Dust or dirt on insulators

- Bullet, airplane, and helicopter contact with conductors or support structures
- Other third-party contact, such as Mylar balloons, kites, and wildlife.

According to the final EIR for the SRPL Project, SDG&E indicates that from 2004-2007, no fires were associated with 500 kV lines. Although the majority of the fires during this period were associated with electrical distribution systems, 14 percent (15 ignitions) were associated with transmission lines. In addition, the majority of the proposed SRPL Project will be located in a remote area, making access, patrol, fire detection, and response more difficult.

Some species are dependent on fire and experience population increases immediately following fires, but for most species, fire causes at least a temporary degradation in habitat quality. Depending on the frequency of fires in a particular environment and how fire-adapted the species and habitats in the fire footprint are, fire-related impacts can last from a few years to many years. If fires are too frequent, plant communities can be “permanently” converted from a stable native vegetation community, such as coastal sage scrub or chaparral, to non-native annual grassland (Keeley et al. 2005).

Type Conversion/Invasive Species

A change in vegetation community is called “type conversion” and can occur to any native vegetation community. When burned too frequently, vegetation communities are often taken over by highly flammable, weedy, non-native plant species that burn even more often and provides minimal habitat value for native plant and animal species, especially those of special status. Invasion of grasses may also alter fire frequency by rapid production of highly flammable fuel, thus leading to more frequent fires and potentially to conversion of shrub lands to grasslands (D’Antonio and Vitousek 1992).

Type conversion occurs when multiple disturbances allow the colonization of non-native plant species into a landscape previously dominated by native vegetation. When multiple disturbances, such as wildfires, occur at an intensity and frequency outside of the natural range of variability of a native ecosystem, these conditions tend to suppress regrowth of native vegetation and favor long-term dominance of non-native, early-successional plants. Because chaparral is typically dominated by nonsprouting obligate seeding species and requires a minimum time to develop an adequate seed bank for regeneration, this sensitive vegetation type is vulnerable to fires at intervals of less than 10 years.

Construction and O&M of the SRPL Project could result in an increase in invasive plant species, such as non-native grasses. Access and spur road construction, road maintenance, and road use could introduce and promote invasive plants. Vehicular routes are a primary pathway for plant invasions into arid and semi-arid ecosystems (Johnson et al. 1975, Amor and Stephens 1976, Brooks and Pyke 2001, Gelbard and Belnap 2003). Vehicles serve as dispersal vectors for alien plant propagules (Clifford 1959, Schmidt 1989, Lonsdale and Lane 1994), and disturbances within vehicular route corridors facilitate establishment of invading ruderal plants (Greenberg et al. 1997). In addition, fuel break construction and maintenance could promote the dispersal

and expansion of exotic species into adjoining habitat through frequent disturbance to roadside habitats associated with maintenance of fuel breaks and the function of vehicles as vectors for seed dispersal (Forman and Alexander 1998).

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. About 52 percent of the SRPL Project crosses Federal lands (BLM, USFS, DoD), and a majority of the remaining line crosses lands under the jurisdiction of the County and City of San Diego's existing and proposed MSCP. The housing, commercial, and infrastructure development addressed by authorized HCPs have already undergone section 7 consultation during section 10(a)(1)(B) permit processing under the Act. Any future actions under the control of the BLM, USFS, and the DoD will require separate section 7 consultations. Thus, we are unaware of any non-Federal actions affecting listed species that are reasonably certain to occur in the action area considered by this biological and conference opinions.

SPECIES BY SPECIES EVALUATIONS AND CONCLUSIONS

Threatened Species

California Gnatcatcher (*Polioptila californica californica*)

Status of the Species

The information included within the 2009 biological and conference opinion for the SRPL Project on the listing status of the gnatcatcher and its critical habitat, biology, ecology, range-wide status and distribution, population trends, and threats and conservation needs are hereby incorporated by reference. Additional information can also be found in the *Coastal California gnatcatcher (Polioptila californica californica) 5-year review: Summary and Evaluation* (Service 2010c) at http://ecos.fws.gov/docs/five_year_review/doc3571.pdf.

Environmental Baseline

Status of the Species in the Action Area

Gnatcatcher habitat in the action area occurs on both public and private lands. Private lands in the action area are included within the planning areas of the County of San Diego and City of San Diego Subarea Plans for the MSCP or the draft East County MSCP. Gnatcatchers generally occur from MP-95 to MP-120 and along the Sycamore-Scripps, Sycamore-Pomerado and Sycamore-Elliott Reconductor 69 kV lines in and around MCAS Miramar.

SRPL Project specific surveys were conducted to identify current occupancy patterns along the SRPL alignment. Focused protocol surveys were conducted for portions of the proposed SRPL Project from MP-114 to MP-119 in the spring of 2007 (Jones and Stokes 2008). Additional surveys were conducted in 2009 and 2010 in several areas along the SRPL alignment and reconductor routes in and around MCAS Miramar (Chambers Group Inc. 2009, 2010). These project-specific surveys provide a current estimate of at least 15 pairs of gnatcatchers within the action area at the following locations:

- Near the Elliot substation: 2007 2 pairs; 2009 6 pairs and 1 juvenile; 2010 2 pairs;
- Between the Scripps and Sycamore substations and near the Sycamore Substation: 2009 1 pair and 1 juvenile; 2010 3 pairs;
- Pomerado Substation: 2009 1 pair;
- Between MP-101 and MP-104: 2009 1 pair; 2010 1 pair;
- Between MP-114 and MP-117: 2009 3 pairs and 2 juveniles; 2010 4 pairs.

Although these surveys are the best approximation of gnatcatcher occupancy for 2010, we are assuming gnatcatchers will be present along the entire alignment west of MP-106 during SRPL Project construction. The 2003 Cedar Fire killed or displaced gnatcatchers throughout most of this area, but gnatcatchers were observed within the burned area in 2009 and 2010. These recent observations show that gnatcatchers are returning to previously occupied habitat, and we believe they are likely to occupy most of their historical locations in the area before SRPL project construction is complete.

For the purposes of this analysis, we identified suitable habitat for gnatcatchers as Diegan coastal sage scrub and coastal sage scrub/chaparral communities based on San Diego County vegetation maps and determined that the action area includes 397 ha (982 ac) of habitat suitable for gnatcatchers. The action area includes 111 ha (273 ac) of designated critical habitat for gnatcatchers as follows: 38 ha (95 ac) within Unit 1 (South San Diego County) and 72 ha (179 ac) within Unit 2 (Upper San Diego River and El Capitan Linkage). Because the critical habitat designation includes other vegetation communities (e.g., riparian and chaparral) contiguous with coastal sage scrub habitat, about 61 ha (150 ac) of this designated critical habitat is not captured by the vegetation communities used to determine suitable habitat for gnatcatchers in this analysis; however, the remaining 50 ha (123 ac) of the designated critical habitat overlaps the areas we modeled as suitable habitat for gnatcatchers. We note that our survey database does not include gnatcatcher observations near El Capitan Reservoir, but this area is known to be occupied (72 FR 72010).

Nearly all suitable habitat along the SRPL alignment west of MP-95 is within the vicinity of current or historical gnatcatcher observations. Thus, over the life of the SRPL Project within suitable habitat in the action area, we can predict that gnatcatchers may shift or expand their territories, occupy new sites, or re-occupy formerly occupied sites (e.g., re-occupy recovering burned areas). In addition, the abundance of gnatcatchers at a given locale can fluctuate extensively on an annual basis (Atwood et al. 1998a, Erickson and Miner 1998, Preston et al.

1998). Population declines or increases of greater than 50 percent between successive years have been reported regularly and may be influenced by precipitation (Atwood et al. 1998a, Erickson and Miner 1998, Patten and Rotenberry 1999).

To address construction impacts of the SRPL Project to gnatcatcher individuals, we used current survey data and an assessment of suitable habitat near known occurrences to determine areas currently occupied by gnatcatchers. Because of the potential for gnatcatchers to expand or adjust use areas over the life of the SRPL Project as described above, we used suitable gnatcatcher habitat to address potential impacts to gnatcatchers from long-term O&M activities (Figure 2).

Factors Affecting the Species in the Action Area

Ongoing and potential threats to gnatcatcher populations and their habitat include urbanization, cowbird parasitism, predation, habitat degradation, and fire (Service 2010c, Griffith Wildlife Biology 1997). Although urban development continues throughout the action area, NCCP/HCP plans have helped direct urban growth away from gnatcatcher habitat and provide long-term protection of gnatcatcher habitat. Wildland fires remain a threat to gnatcatchers throughout the action area. Fires are a direct threat to gnatcatchers because they cause direct mortality and destroy the coastal sage scrub (CSS) vegetation that provides habitat for gnatcatchers. While CSS historically regrows and supports gnatcatchers within 3 to 5 years following fires, increased fire frequency and invasion of non-native grasses has caused type conversion, or permanent change in vegetation communities, in some areas, which can permanently exclude gnatcatchers. The 2003 Cedar Fire burned gnatcatcher suitable habitat along the alignment from MP-98 to MP-120, and the 2007 Witch fire burned a small portion of gnatcatcher suitable habitat along the alignment near MP-104.

Effects of the Action

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger 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, are later in time, and still reasonably certain to occur.

This biological and conference opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 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 SRPL Project on designated gnatcatcher critical habitat.

For the purposes of this biological and conference opinion, we addressed impacts to the gnatcatcher and its designated critical habitat based on GIS vegetation mapping, the 2009 and

2010 field surveys (Chambers Group, Inc. 2009, 2010) and our CFWO GIS database. Our analysis includes an assessment of the potential effects of the modified (i.e., impact-reduced) SRPL Project on the gnatcatcher and its designated critical habitat during construction and as a result of long-term O&M activities. We conducted an independent analysis of the impact of the SRPL Project on the gnatcatcher. Therefore, estimates of the permanent and temporary impacts differ from those presented in the Pre-construction Consultation Report.

Based on the project and survey information available to us prior to issuance of the 2009 biological and conference opinion, we determined that the SRPL Project would permanently impact up to 21.7 ha (53.6 ac) of suitable gnatcatcher habitat, including up to 4.6 ha (11.3 ac) of designated gnatcatcher critical habitat. For temporary impacts, we determined that the SRPL Project would impact up to 43.0 ha (106.2 ac) of suitable gnatcatcher habitat, including up to 7.6 ha (18.7 ac) of designated critical habitat.

Following issuance of the 2009 biological and conference opinion, we expected SDG&E to conduct additional protocol surveys and to make project modifications to reduce impacts, where feasible, and they have complied with conservations measures specific to these goals. Thus, the modified project has reduced permanent and temporary construction impacts to suitable gnatcatcher habitat and its designated critical habitat. In addition, the impacts expected as a result of O&M activities have been better defined.

The modified SRPL Project will impact 8.8 ha (21.7 ac) of suitable gnatcatcher habitat, including 6.4 ha (15.9 ac) of permanent and 2.4 ha (5.8 ac) of temporary impacts. The SRPL Project will impact 10.3 ha (25.4 ac) of designated gnatcatcher critical habitat, including 1.6 ha (3.8 ac) of permanent and 8.7 ha (21.6 ac) of temporary impacts. These impacts will occur in Unit 1 [0.1 ha (0.2 ac) of permanent and 8.5 ha (21.1 ac) of temporary] and Unit 2 [1.5 ha (3.6 ac) of permanent and 0.2 ha (0.5 ac) of temporary] (Figure 2).

In addition, SDG&E will impact up to 18 ha (45 ac) of suitable gnatcatcher habitat annually for standard O&M activities within the San Diego portion of the action area. Based on the amount of gnatcatcher habitat in areas potentially impacted by O&M activities within and outside the ROW, we anticipate up to 2 ha (5 ac) of these total impacts will occur in suitable gnatcatcher habitat and 0.5 ha (1.2 ac) will occur in designated critical habitat. Likewise, based on the 202-ha (500-ac) project limit for vegetation clearing associated with transmission line-related fire prevention and management activities, we anticipate up to 22 ha (55 ac) of suitable gnatcatcher habitat and 5.5 ha (13.5 ac) of designated critical habitat could be impacted over the life of the SRPL Project for these activities.

Conservation Measures **SS-CM-1** through **SS-CM-4** are particularly relevant to SDG&E's commitment to avoid, minimize, and offset impacts to the gnatcatcher and are repeated here for ease of reference.

SS-CM-1 All initial ground- or vegetation-disturbing SRPL Project activities, including project construction and O&M activities, within suitable gnatcatcher habitat (see Figure 2) will be

conducted outside of the gnatcatcher breeding season (February 15 through August 31) in the presence of a Project Biologist. The Project Biologist will walk ahead of vegetation removal equipment and ensure that gnatcatchers are not killed or injured as a direct result of vegetation removal activities. The Project Biologist will have the authority to halt/suspend all activities until appropriate corrective measures have been completed. The Project Biologist will also be required to report non-compliance issues immediately to the Wildlife Agencies.

SS-CM-2 For standard O&M activities in previously impacted areas requiring brushing or grading of vegetation in suitable gnatcatcher habitat, SDG&E will conduct these activities outside of the gnatcatcher breeding season, where feasible. Standard O&M activities are generally expected to occur within 2-year maintenance cycles, and when carried out under these circumstances, the Wildlife Agencies concur that the presence of a Project Biologist is not required because vegetation sufficient to support gnatcatchers is not likely to re-establish within a 2-year timeframe. If the maintenance cycle is not maintained, but activities will still occur outside the gnatcatcher breeding season, SDG&E will conduct the activities in accordance with **SS-CM-1**, unless a Project Biologist confirms that no suitable gnatcatcher habitat has re-established.

SS-CM-3 When construction or O&M activities must be conducted during the gnatcatcher breeding season within suitable gnatcatcher habitat, the following avoidance measures will apply:

- A Project Biologist will survey for gnatcatchers within 10 days prior to initiating activities in an area. The results of the survey will be submitted to the Wildlife Agencies for review and approval prior to initiating any construction or O&M activities within occupied habitat. If gnatcatchers are present, a Project Biologist will survey for nesting activity approximately once per week within 152 m (500 ft) of the construction area for the duration of the activity.
- If an active nest is located, a 91-m (300-ft) no-construction buffer will be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. SDG&E will contact the Wildlife Agencies to determine the appropriate buffer zone. To the extent feasible, no construction or O&M activities will take place within this buffer zone until the nest is no longer active. However, if construction must take place within the 91-m (300-ft) buffer, a qualified acoustician will monitor noise as construction or O&M activities approaches the edge of the occupied gnatcatcher habitat as directed by the Project Biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the Project Biologist determines that the activities in general are disturbing the nesting activities, the Project Biologist will have the authority to halt construction or O&M activities and will consult with the Wildlife Agencies to devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting gnatcatchers and the activities, and working in other areas until the young have fledged.

SS-CM-4 SDG&E will complete the purchase and provide for the long term management of occupied gnatcatcher habitat at the Lakeside Ranch and Hamlet properties. Long-term management of the Lakeside Ranch property will include restoration of 20 ha (50 ac) of coastal sage scrub. Temporary impacts to occupied habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Direct Effects of Construction and Operations and Maintenance Activities

1. Construction Activities

Based on updated survey information and the PMR, we anticipate that the modified SRPL Project will permanently impact 6.4 ha (15.9 ac) and temporarily impact 2.4 ha (5.8 ac) of suitable gnatcatcher habitat. Habitat loss will occur during the installation of new tower pads and work areas, new road segments, and new staging and fly yards occurring intermittently along the route in small patches.

Although habitat removal will be conducted outside the gnatcatcher breeding season, gnatcatchers are non-migratory territorial birds, so removal of a substantial portion of a gnatcatcher pairs breeding territory will force the pair to expand their existing territory or establish a new territory, particularly during the breeding season, when territorial boundaries are better defined (Preston et al. 1998). It is likely that displaced gnatcatchers will be forced to compete with resident gnatcatchers when attempting to expand an existing territory or establish a new territory. If displaced birds cannot find suitable habitat to forage and shelter in, we anticipate they will be more vulnerable to predation and otherwise may die or be injured. Gnatcatchers that successfully establish territories in adjacent habitat are expected to experience reduced productivity (e.g., delayed initiation or prevention of nest building, fewer nesting attempts per season, and/or overall reduction in reproductive output) due to reduced availability of foraging and breeding habitat and increased territorial interactions.

We have little information regarding the effect of removing different amounts of habitat from an existing gnatcatcher territory and how such removal might affect gnatcatcher survival and reproduction. So we used our best professional judgment to estimate that the loss of more than 20 percent of gnatcatcher habitat within a territory will substantially increase the risk of mortality or interfere with gnatcatcher breeding activity. Likewise, we expect loss of less than 20 percent of a territory may force a gnatcatcher pair to adjust its territory boundaries slightly or result in a limited increase in territorial interactions with neighboring pairs, but this less than 20 percent reduction will not result in a substantial increase in mortality or reproductive output (i.e., effects would not rise to the level of “take”).

For this assessment, we used a conservative estimate of 1.0 ha (2.5 ac) for the size of a gnatcatcher territory based on a reported territory range of 1.0 to 10.0 ha (2.5 to 25.0 ac) for gnatcatchers (Atwood et al. 1998b; Preston et al. 1998). Thus, any impact removing more than 0.2 ha (0.5 ac) of suitable gnatcatcher habitat near a currently occupied site is assessed as an impact resulting in loss of a gnatcatcher territory or one pair of gnatcatchers.

We do not anticipate that adult or juvenile gnatcatchers will be directly killed or injured during permanent or temporary habitat removal since a Project Biologist will be present to locate and flush any gnatcatchers out of harm's way from vegetation clearing or grubbing activities. We also do not expect any eggs or nestlings to be killed or injured during permanent or temporary habitat removal since vegetation clearing will primarily occur outside of the gnatcatcher breeding season. If habitat removal must occur within the gnatcatcher breeding season, a Project Biologist will survey the area for gnatcatcher nesting activity. If nesting activity is detected, the area will be avoided until the nest has either failed or the nestlings have fledged (**SS-CM-3**).

Construction activities that permanently remove suitable gnatcatcher habitat [6.4 ha (15.9 ac)] will reduce available breeding, feeding, and sheltering resources for gnatcatchers in these areas. However, nearly all of the permanent impacts are less than 0.1 ha (0.3 ac). The sole exception is an approximately 0.3 ha (0.7 ac) impact near MP-98, which is not currently known to be occupied. Given the small area of these permanent impacts, it is not likely that any individual gnatcatcher territory will be subject to resource losses sufficient to cause injury or death of adult gnatcatchers or a decrease in reproductive output. Thus, permanent removal of suitable gnatcatcher habitat is not expected to result in any significant effect to existing gnatcatcher territories or pairs within the action area.

Similarly, temporary impacts to suitable gnatcatcher habitat will total 2.4 ha (5.8 ac) with most of these impacts occurring in currently unoccupied habitat or impacting less than 0.2 ha (0.5 ac) of suitable gnatcatcher habitat. However, removal of habitat at two of the temporarily impacted sites [i.e., MP-107 (0.9 ha or 2.2 ac) and MP-112 (0.28 ha or 0.70 ac)] will likely impact sufficient habitat to increase the risk of mortality or at minimum interfere with gnatcatcher breeding activity in the action area. Although these sites were not reported as occupied in the 2010 surveys, birds have been observed in suitable habitat at MP-109, which suggests that they are returning to historically occupied habitat and may occupy these areas before project construction is complete. Approximately 0.38 ha (0.94 ac) will be temporarily impacted near MP-98 (0.38 ha or 0.94 ac), but this area is not currently occupied, and no gnatcatcher observations have been recorded in this general area according to the CFWO GIS database.

Thus, we expect the loss of suitable gnatcatcher habitat during construction to result in a reduction of reproductive output, injury, or death to gnatcatchers at only two sites in the action area: up to four pairs impacted at MP-107 and one pair at MP-112. These construction impacts may reduce the number of gnatcatcher pairs within the action area over the short-term (i.e. a few years); however, when considering the amount of suitable gnatcatcher habitat in the action area and that temporarily impacted areas will be restored, construction impacts are not expected to have a long-term effect on the overall numbers, reproduction, or distribution of gnatcatchers in the action area or rangewide.

2. Operations and Maintenance Activities

Standard O&M activities, such as road maintenance (grading), tree trimming, and structure replacement and repairs, and increased human disturbance could potentially affect gnatcatcher

behaviors. SDG&E will implement **SS-CM-2** to minimize potential impacts of O&M activities on gnatcatchers. This measure anticipates vegetation clearing to occur outside of the bird breeding season and within a 2-year cycle. If the vegetation cycle is not maintained, SDG&E will implement **SS-CM-1**, which requires working with a Project Biologist to limit impacts to gnatcatchers outside the breeding season. All other maintenance activities are to occur outside of the bird breeding season if feasible. If it is not feasible to schedule maintenance activities outside of the bird breeding season, then SDG&E will implement **SS-CM-3**, which requires a Project Biologist working with an acoustician will determine if a maintenance activity will meet or exceed the 60 db(A) Leq hourly noise threshold where nesting territories of gnatcatchers are detected. If noise levels are below this threshold, then the maintenance activity can proceed, if not, then a survey to locate gnatcatcher nests will be conducted. If an active nest is found, then all necessary impact avoidance and minimization methods will be employed, such as a Project Biologist on site, continued noise monitoring and noise reduction methods or waiting until young have fledged from the nest.

The total amount of land within the ROW and impact areas outside the ROW within the San Diego portion of the action area within the gnatcatcher's range is 1,096 ha (2,708 ac). To assess potential impacts to gnatcatcher individuals and suitable habitat from standard O&M activities within these areas, we determined that the ROW and impact sites outside of the ROW support up to 121 ha (300 ac) of suitable gnatcatcher habitat or 11.1 percent of the total area.

SDG&E estimates overall habitat impacts of 18 ha (45 ac) for standard O&M activities in the San Diego portion of the action area. Because suitable gnatcatcher habitat represents 11.1 percent of the total area potentially impacted by standard O&M activities, impacts to suitable gnatcatcher habitat from these activities are reasonably expected to be 11.1 percent of the overall annual impact or up to 2 ha (5 ac) annually.

We anticipate this small impact to occur at several locations across the alignment of the SRPL Project in any given year and to occur primarily in previously disturbed habitat. Because most construction impacts in suitable gnatcatcher habitat are less than 0.2 ha (0.5 ac), it is likely that O&M activities will be similar or even less. Thus, annual removal of suitable gnatcatcher habitat is not expected to result in injury or death or loss of reproductive output for gnatcatchers within the action area.

Finally, based on the 202-ha (500-ac) project limit for vegetation clearing associated with transmission line-related fire prevention and management activities in the San Diego portion of the action area, we expect removal of up to 22 ha (55 ac) of suitable gnatcatcher habitat over the life of the SRPL Project. Using a conservative estimate of an average territory size of 1.0 ha (2.5 ac), these fire management activities could result in the loss of up to 22 gnatcatcher pairs over the life of the SRPL Project. However, based on the known distribution of gnatcatchers within the linear action area, it is unlikely that this impact would occur within suitable habitat at a location supporting a concentration of 22 pairs of gnatcatchers where all 22 pairs would suffer loss of their entire territories. Thus, based on our best professional judgment, we believe that no more than eight pairs of gnatcatchers are likely to be affected during any one event directed at

preventing or managing potential fire impacts along the ROW. Because there are 397 ha (982 ac) of suitable gnatcatcher habitat in the action area and substantially more suitable habitat surrounding the action area, gnatcatcher populations within the action area should be able to sustain this impact. Thus, we do not expect this loss to result in an appreciable reduction in the number, reproduction, or distribution of gnatcatchers in the action area or rangewide.

Indirect Effects of Construction and Operations and Maintenance Activities

Gnatcatchers in the action area may be subject to increased noise and disturbance levels during project construction and O&M activities that may impair communication or other essential behaviors that reduce reproductive capacity. Noise-related effects are expected to occur while the transmission line is being constructed, a period of approximately 33 months, and occasionally during O&M activities. The measures discussed in **SS-CM-3** are expected to effectively reduce potential effects from noise to nesting gnatcatchers.

Personnel associated with the construction activities often leave food, trash and debris in the work area, which can attract a higher concentration of predators to the area leading to increased predation. Predators such as common ravens, western scrub jays, and coyote can all be attracted to the work area by the above activities and have the potential to prey on gnatcatcher eggs and nestlings. To eliminate or minimize predator attraction to construction areas, SDG&E will prohibit littering of any food or waste in the project area and remove biodegradable or non-biodegradable debris from the ROW following completion of construction (**G-CM-9**).

Impacts from human disturbance during the gnatcatcher breeding season can include temporarily changing gnatcatcher breeding and nesting behavior, which can affect their ability to mate, build nests, and care for young. Consistent with **SS-CM-1** and **SS-CM-2**, most construction and O&M activities will occur outside the gnatcatcher breeding season. SDG&E will have a Project Biologist present in accordance with **SS-CM-3**, which will eliminate or minimize disturbance to breeding or nesting gnatcatchers by project personnel. For human disturbance from non-project personnel, **G-CM-26** requires that entrances to access roads will be gated during and after construction to prevent the unauthorized use of these roads by the general public. Additionally, signs will be posted on the gates prohibiting unauthorized use of the access roads. **G-CM-30** requires the permanent closure of access road not needed for maintenance and that closed roads be monitored and maintained to assure that unauthorized access by the public is not occurring. SDG&E will implement the Weed Control Plan to reduce the spread of invasive weeds as a result of project construction and O&M activities (**G-CM-20**).

Effect on Critical Habitat

The proposed SRPL Project will permanently impact 1.6 ha (3.8 ac) and temporarily impact 8.7 ha (21.6 ac) (Table 5) of designated critical habitat for gnatcatcher. In Unit 1, SRPL Project construction will impact 8.6 ha (21.3 ac) of gnatcatcher critical habitat including 0.1 ha (0.2 ac) of permanent impacts and 8.5 ha (21.1 ac) of temporary impacts. All temporary impacts within Unit 1 are associated with the Helix Construction Yard and its access road and are in addition to

the temporary impacts expected for construction. These impacts represent less than a half of 1 percent of the 6,029 ha (14,898 ac) of designated critical habitat within Unit 1.

In Unit 2, SRPL Project construction will remove up to 1.7 ha (4.1 ac) of gnatcatcher critical habitat in small patches (no greater than 0.1 ha or 0.3 ac) along a 3.6-km (2.2-mi) long, narrow band of habitat within the action area, and include 1.5 ha (3.6 ac) of permanent and 0.2 ha (0.5 ac) of temporary impacts. These impacts represent less than one half of one percent of the 5,871 ha (14,508 ac) of designated critical habitat within Unit 2.

The ROW and impact areas outside of the ROW in the San Diego County portion of the action area include 29.5 ha (73.0 ac) of designated gnatcatcher critical habitat, which is 2.7 percent of the total amount of land within these impact areas [1,096 ha (2,708 ac)]. Thus, impacts to designated critical habitat from standard O&M activities are reasonably expected to be no more than 2.7 percent of the overall 18-ha (45-ac) annual impact or 0.5 ha (1.2 ac) annually. Likewise, vegetation clearing to prevent or manage potential transmission line-related fires [202 ha (500 ac)] may impact up to 5.5 ha (13.5 ac) of designated gnatcatcher critical habitat over the life of the SRPL Project.

The biological function of Unit 1 and Unit 2 to support persistent populations of gnatcatchers is expected to be maintained during and after SRPL Project construction because the permanent loss of primary constituent elements within 1.6 ha (3.8 ac) of designated gnatcatcher critical habitat will be distributed over a linear footprint, which minimizes the effect of this loss in any one area. In addition, most of the impacts will be temporary [8.7 of 10.3 ha (22.0 of 26.0 ac)], including the 8.5 ha (21.1 ac) Helix Construction Yard, and we anticipate primary constituent elements (i.e., sage scrub communities) will be available to gnatcatchers within 2-3 gnatcatcher generations following habitat restoration in accordance with the Habitat Restoration Plan.

Standard O&M activities are likely to occur in previously impacted areas, which will minimize the loss of additional primary constituent elements beyond those already removed by construction. Additional loss of primary constituent elements by vegetation clearing to prevent or manage transmission line-related fires represents a relatively small impact when considering the combined amount of designated critical habitat in Unit 1 and Unit 2 [11,900 ha (29,406 ac)]. Specifically, the loss of up to 5.5 ha (13.5 ac) or 0.05 percent of the gnatcatcher critical habitat in the action area is not expected to significantly affect the function of Unit 1 or Unit 2 or the overall function of designated gnatcatcher critical habitat to support persistent populations of gnatcatchers in the action area or throughout the species range.

Conservation Actions and Effect on Recovery

In addition to the onsite restoration of temporary impacts at a 1:1 ratio as discussed above, SDG&E committed to offset construction impacts to gnatcatcher habitat (occupied and designated critical habitat) through the offsite acquisition of similar habitat at a minimum 2:1 ratio for permanent and a 1:1 ratio for temporary impacts. In addition, SDG&E committed to offset permanent impacts to habitat associated with O&M activities at similar ratios. The precise

acreage of permanent impacts associated with O&M activities was not identified in the 2009 biological and conference opinion, but these impacts were expected to be minor. These commitments were memorialized in **SS-CM-4** and **G-CM-45** of the 2009 biological and conference opinion.

Based on these ratios and the reduced impacts of the modified SRPL Project, a minimum of 15.2 ha (37.6 ac) of occupied gnatcatcher habitat and 12 ha (29 ac) of critical habitat would be expected to be acquired for conservation to offset construction impacts. Based on the impacts identified for O&M activities, new permanent impacts would be offset at a 2:1 ratio, which would likely include only those impacts associated with transmission line-related fire prevention and management activities. Thus, SDG&E would be expected to offset O&M impacts by conserving up to an additional 45 ha (110 ac) of occupied and 11 ha (27 ac) of critical habitat. Conservation expected by SDG&E to offset construction and O&M impacts to gnatcatcher and its critical habitat over the life of the SRPL Project would be 60.2 ha (147.6 ac) of occupied and 23 ha (56 ac) of critical habitat or 83.5 ha (203.6 ac) of gnatcatcher habitat in total (Table 5).

To fulfill their obligations to offset both construction and long-term O&M impacts to gnatcatchers, SDG&E, with concurrence from the Wildlife Agencies, has committed to acquisition and management of the Lakeside Ranch and Hamlet sites as described in the HAP (**SS-CM-4**). We estimate that the Lakeside Ranch property includes 132 ha (326 ac) of gnatcatcher habitat. Although the site was burned in the 2003 Cedar Fire, it is in the early stages of recovery, and CSS is recovering throughout most of the site (C. Winchell, CFWO pers. comm. to K. Goebel 2010), and it has historically supported a large number of gnatcatcher pairs; 9 to 12 pairs or family groups were recorded from the property in 1997 (Affinis 1997).

Management of the Lakeside Ranch site will include habitat restoration within 20 ha (50 ac) of degraded habitat, where non-native plants have invaded and delayed natural recovery of coastal sage scrub (**SS-CM-4**). In addition, the Hamlet site includes approximately 23 ha (56 ac) of coastal sage scrub according to the HAP and is within 1.0 km (0.6 mi) of the Lakeside Ranch site. Similar to the Lakeside Ranch site, the Hamlet site was recently burned but is expected to support gnatcatchers once the habitat matures.

Thus, the conservation provided by the SRPL Project will significantly increase protection and management of approximately 155 ha (382 ac) of gnatcatcher habitat. With protection and management, these sites are expected to fully recover from the recent fires and support robust populations of gnatcatchers. In particular, we expect the Lakeside Ranch site to support a high density of gnatcatcher individuals that may be considered a core population area important for gnatcatcher recovery.

Because impacts to gnatcatcher and its critical habitat from both construction and anticipated O&M activities are spread throughout the alignment, conservation of the Lakeside Ranch and Hamlet sites does not directly offset impacts to individual gnatcatchers that will be affected by the SRPL Project. However, impacts have been minimized such that construction of the SRPL Project is expected to result in only short-term impacts to gnatcatchers in the action area, and

impacts from O&M activities are expected to be similarly minor. The loss of a small percentage of the primary constituent elements within gnatcatcher designated critical habitat will not significantly affect the ability of the overall designation to support persistent populations of gnatcatchers within the action area or rangewide.

More importantly, the restoration of 20 ha (50 ac) of habitat at the Lakeside Ranch property will increase the amount of coastal sage scrub at this site. Overall, the conservation of the Lakeside Ranch and Hamlet properties will provide for the long-term protection and management of habitat supporting coastal sage scrub (i.e., a primary constituent element of gnatcatcher critical habitat) where no long-term protection or management was assured or provided before.

In summary, we believe the conservation and long-term management of this replacement habitat will effectively offset the anticipated adverse effects to occupied gnatcatcher habitat and designated gnatcatcher critical habitat from the project's construction and O&M activities. By helping to maintain and enhance the resident gnatcatcher population, the conservation of the Lakeside Ranch and Hamlet sites represents a significant contribution to the long-term recovery of gnatcatcher.

Conclusion

After reviewing the current status of the gnatcatcher, the environmental baseline, effects of the proposed action, and cumulative effects, it is our biological opinion that the proposed action will not jeopardize the continued existence of the gnatcatcher or adversely modify its designated critical habitat. We reached this conclusion by considering the following:

- 1) Loss of gnatcatcher habitat will primarily occur outside of the breeding season, and we do not anticipate that gnatcatcher adults, juveniles, eggs or nestlings will be directly killed or injured during habitat clearing or grading activities associated with construction or O&M activities of the SRPL Project;
- 2) The permanent and temporary loss of suitable gnatcatcher habitat during construction will primarily occur within the linear ROW minimizing effects to individual gnatcatcher territories and connectivity across the action area; only two gnatcatcher pairs are expected to be harmed by habitat removal associated with construction activities;
- 3) Direct and indirect impacts to gnatcatchers will be avoided and minimized through the implementation of the General and Species-Specific Conservation measures;
- 4) Removal of suitable gnatcatcher habitat during O&M activities is expected to harm only eight pairs of gnatcatchers over the life of the SRPL Project;
- 5) The permanent loss of primary constituent elements within gnatcatcher designated critical habitat for construction and O&M activities represents a very small proportion of designated critical habitat within Units 1 and 2; thus, the ecological function and value of

gnatcatcher designated critical habitat to support persistent populations of gnatcatchers will be maintained in these units and within the overall designation; and

- 6) The long-term conservation of 155 ha (382 ac) of occupied gnatcatcher habitat within the Lakeside Ranch and Hamlet properties will support the range-wide conservation (recovery) of the species.

Endangered Species

Least Bell's Vireo (*Vireo bellii pusillus*)

Status of the Species

The information included within the 2009 biological and conference opinion for the SRPL Project on vireo biology, ecology, range-wide status and distribution, population trends, and threats and conservation needs are hereby incorporated by reference. Additional information can also be found in the *Least Bell's Vireo (Vireo bellii pusillus) 5-Year Review: Summary and Evaluation* (Service 2006) at: http://ecos.fws.gov/docs/five_year_review/doc781.pdf.

Environmental Baseline

Vireos were observed within the proposed ROW or potential impact areas of the SRPL Project during SDG&E's vireo surveys conducted by HELIX in 2007 for the then described Alternatives Portion of the proposed SRPL Project (HELIX 2008). However, not all suitable habitat was surveyed within the proposed impact areas due to the large size of the action area, the preponderance of private lands within the action area, access issues, treacherous site conditions, and changes to the selected route following completion of the surveys. Additionally, some of the 38 areas that were surveyed for vireo are no longer part of the action area for the SRPL Project.

Based on habitat data gathered during the 2007 surveys and USFS modeled habitat data, approximately 34 ha (83 ac) of suitable vireo habitat were identified and further assessed by RECON in 2009 (RECON 2009b). An 18-ha (44-ac) subset of this suitable habitat was surveyed in 2009 (RECON 2009b), but this survey did not include all suitable vireo habitat along the alignment because project modifications that added areas of suitable habitat to the alignment were made too late to be included in the surveys. These areas were added to the 2010 surveys (RECON 2010). The areas surveyed are primarily within the action area, but they extend beyond the action area to varying distances depending on habitat conditions. Additional incidental vireo observations were also reported during the course of other biological surveys by Project Biologists. These incidental observations were made from both within and outside of the areas chosen for the RECON surveys. The following information describes the locations where vireos were observed in or near the action area.

Segment 1: Hauser Creek – MP-69 to MP-76

In 2007, 2009, and 2010, breeding vireo pairs and juveniles were observed along Hauser Creek within or near the ROW between MP-68 and MP-69 where Hauser Creek crosses the action area (HELIX 2008, RECON 2009b). In addition, the California Natural Diversity Database documents vireo along several portions of Hauser Creek, where it roughly parallels the action area to the north. Along this section of Hauser Creek, the occurrences are located approximately 4 km (3 mi) north of MP-75 and MP-76 and approximately 0.8 to 4.0 km (0.5 mi to 2.5 mi) north of MP-70 through MP-72. Because site fidelity by vireos after the first breeding season is generally high (Service 1998), there is a high likelihood that vireo will continue to occupy areas within and adjacent to the proposed ROW both where it crosses and parallels Hauser Creek.

Segment 2: Cottonwood Creek – Between MP-77 and MP-78

Vireos, including one to three breeding pairs, were observed within and adjacent to the ROW along Cottonwood Creek in 2010 (RECON 2010). South of SRPL alignment along Cottonwood Creek, vireos were documented in 2005 and 2007 (CFWO GIS database). Thus, presence of vireo in this portion of the action area is known and occupancy is likely to continue.

Segment 3: Viejas Creek – MP-95

Vireos were observed adjacent to the SRPL alignment within Viejas Creek during surveys in 2009 and 2010 (RECON 2009b, 2010a). In both cases, apparently single males were observed early in the vireo season and not observed in subsequent visits. Therefore, this site is not considered a current vireo breeding location.

Segment 4: Lower Chocolate Canyon – MP-99

The HELIX survey area at Alpine Creek (MP98) contained suitable vireo habitat, but surveys in this area were started too late in the year to detect vireo in 2007, and RECON (2009) did not include this area in their protocol surveys; however, vireo-permitted biologists¹⁴ with the Chambers Group observed vireo on two occasions in this location during rare plant surveys (Don Haines, SDG&E, pers. comm. to Eric Porter, 2010). This area was included in the protocol surveys for the project in 2010, but no vireos were observed. Based on the vireo behavior and site characteristics described by the Chambers Group biologists, we consider this site a vireo breeding location.

Segment 5: El Capitan Dam – MP-101

This area is downstream and south of the El Capitan Reservoir, along the San Diego River. This area was modeled as suitable habitat by the USFS and included in the 2009 and 2010 RECON surveys. In 2010, a single vireo was observed at this location on April 16, 2010. Because this

¹⁴ Biologists with current section 10(a)(1)(A) recovery permits to conduct protocol vireo surveys

observation occurred early in the vireo season and the individual was not relocated during eight subsequent visits, it is assumed that the vireo did not breed in this location, and this location is not considered occupied at this time (RECON 2010).

Segment 6: San Diego River – South of MP-106

Vireos have been observed along the San Diego River adjacent to a proposed helipad approximately 4 km (3 mi) south of MP-108. Additional vireo occurrences are known west of this helipad, along the San Diego River. Although the helipad location has been moved from north to south of the San Diego River, it remains adjacent to occupied vireo habitat. Since this area was not included in the project-specific survey, we consider this portion of the action area occupied by vireo based on their occurrence in the general area.

Segment 7: Near Sycamore Substation – MP-117

Two vireo pairs, including at least one nest with eggs, were observed during protocol gnatcatcher surveys within 300 m (985 ft) of the action area near MP-117. These vireos were observed by Chambers Group biologists in 2010 (Don Haines, SDG&E, pers. comm. to Eric Porter, 2010).

The vireo surveys provide the best available estimate of current vireo occupancy along the SRPL alignment; however, vireo can add or move nesting locations distant from current locations, and vireo may occupy any suitable habitat patch during the life of the SRPL Project. Therefore, to assess potential impacts from O&M activities, we have estimated the extent of suitable habitat within the action area. We used the USFS habitat suitability model where the model has been applied, and created a separate model in areas that are not covered by the USFS model using a 100-m (328-ft) buffer around streams in the United States Geological Survey GIS hydrologic database¹⁵. Based on these models, there are 103 ha (255 ac) of suitable habitat in the USFS model (in and around the CNF) and 66 ha (163 ac) of suitable habitat outside of the USFS model boundary for a total of 169 ha (418 ac) of suitable vireo habitat in the action area (Figure 3). For the purposes of this analysis, suitable vireo habitat includes areas currently occupied and areas likely to become occupied over the life of the SRPL Project. Occupied habitat includes areas known to be occupied by vireo based on available survey information.

Effects of the Action

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger 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, are later in time, and still reasonably certain to occur.

¹⁵ This buffer area is presumed to include riparian habitat most likely to be used by vireo now or in the future.

For the purposes of this biological and conference opinion, we addressed impacts to vireo and their habitat based on information from the 2007, 2009, and 2010 field surveys (HELIX 2008; RECON 2009b, 2010a), our CFWO GIS database, the USFS vireo habitat model, and the CFWO GIS model applied outside the bounds of the USFS model. Our analysis includes an assessment of potential effects of the SRPL Project on vireo during construction and as a result of long-term O&M activities. We conducted an independent analysis of the impact of the SRPL Project on the vireo. Therefore, estimates of the permanent and temporary impacts differ from those presented in the Pre-construction Consultation Report.

Based on the project survey information and models available to us prior to issuance of the 2009 biological and conference opinion, we determined that construction of the SRPL Project would permanently impact up to 3.4 ha (8.3 ac) and temporarily impact up to 5.0 ha (12.3 ac) of vireo habitat for a total impact of 8.4 ha (20.6 ac).

Following issuance of the 2009 biological and conference opinion, we expected SDG&E to conduct additional protocol surveys and to make project modifications to reduce impacts, where feasible, and they have complied with conservations measures specific to these goals. Thus, the modified project has reduced permanent and temporary construction impacts to vireo habitat. In addition, the impacts expected as a result of O&M activities have been better defined.

The modified SRPL Project will impact 6.5 ha (16.3 ac) of suitable habitat for vireo, including 1.2 ha (3.1 ac) of permanent impacts and 5.3 ha (13.2 ac) of temporary impacts during project construction. In addition, SDG&E will impact up to 18 ha (45 ac) of habitat annually for standard O&M activities within the San Diego County portion of the action area within the vireo's range. Based on the amount of suitable habitat for vireo in areas potentially impacted by O&M activities within and outside the ROW, we anticipate annual impacts up to 0.65 ha (1.62 ac) within suitable vireo habitat for standard O&M activities. Fire prevention and management activities are not likely to require removal of riparian habitat so no loss of habitat suitable for vireo is anticipated for these activities.

Conservation Measures **SS-CM-5** and **SS-CM-6** are particularly relevant to SDG&E's commitment to avoid, minimize, and offset direct impacts to the vireo and are repeated here for ease of reference.

SS-CM-5 During construction and O&M activities all grading or brushing taking place within suitable vireo habitat will be conducted outside the vireo breeding season (defined as March 15 through September 15).

When construction or O&M activities must occur during the breeding season within 152 m (500 ft) of suitable habitat, a Project Biologist will survey for vireos within 10 days prior to initiating activities in an area. The results of the survey will be submitted to the Wildlife Agencies for review and approval prior to initiating any construction activities.

- During construction or O&M activities, if vireos are present, a Project Biologist will survey daily for nesting vireos within 152 m (500 ft) of the construction area, for the duration of the activity in that area during the breeding season. If an active nest is located, a 91-m (300-ft) no-construction buffer zone will be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. SDG&E will contact the Wildlife Agencies to determine the appropriate buffer zone. No construction or O&M activities will take place within this buffer zone until the nest has fledged or is no longer active. If construction must take place within the buffer, a qualified acoustician will monitor noise as construction approaches the edge of the occupied vireo habitat as directed by the Project Biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that construction activities are disturbing nesting activities, the biologist will have the authority to halt construction and will consult with the Wildlife Agencies, BLM and USFS, to devise methods to reduce the noise and/or disturbance. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting birds and the activities, and working in other areas until the young have fledged. The Project Biologist will monitor the nest daily until activities are no longer within 91 m (300 ft) of the nest, or the fledglings become independent of their nest or the nest has failed.

SS-CM-6 SDG&E will complete the purchase and provide for the long-term management, of suitable vireo habitat at the Nabi, Chocolate Canyon, and Long Potrero properties. Temporary impacts to suitable habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Direct Effects of Construction and Operations and Maintenance Activities

1. Construction Activities

Based on the CFWO GIS database and project-specific survey data, there will be no direct impacts during construction to currently occupied vireo habitat. We note that a guard area will temporarily remove 0.0004 ha (0.001 ac) of habitat near MP-101, where a vireo was observed in 2010; however, the vireo individual was considered a migrant based on its behavior and the timing of the observation (RECON 2010).

Using the USFS and CFWO habitat models, we estimate that construction of the SRPL Project will permanently impact 1.2 ha (3.1 ac) and temporarily impact 5.3 ha (13.2 ac) of suitable habitat for vireo. The largest impacts to suitable vireo habitat will occur at two temporary construction sites, a 0.97-ha (2.4-ac) site south of MP106 and a 3.3-ha (8.1-ac) site south of MP103. In both cases, these temporary impacts to suitable habitat for vireo are overestimates because the construction yards are almost entirely outside of riparian vegetation in previously disturbed habitat. All other temporary impacts are 0.1 ha (0.3 ac) or less.

We do not anticipate that vireos or eggs or nestlings will be directly killed or injured during temporary or permanent removal of suitable vireo habitat. Vegetation clearing will occur outside of the vireo breeding season when these migratory birds are not present in the action area. If construction must occur during the breeding season, measures will be implemented by SDG&E consistent with **SS-CM-5** to avoid direct injury or death of vireos. Drainages where existing occurrences are known in proximity will be spanned, thus preventing direct impacts to vireo occupied sites.

Construction activities that remove suitable habitat will reduce available breeding, feeding, and sheltering resources for vireos in the action area. However, only a relatively small area will be permanently impacted overall (1.2 ha or 3.1 ac) along the linear alignment. While temporary impacts are greater (5.3 ha or 13.2 ac), they are concentrated at two sites in previously disturbed habitat. Temporary impacts will be restored at a 1:1 ratio in accordance with the Habitat Restoration Plan, such that any impacted riparian habitat should be re-established and become available for vireo use within a relatively short timeframe (2-7 years).

Finally, the action area supports approximately 169 ha (418 ac) of suitable vireo habitat according to our models. Thus, sufficient habitat is available to support all of the known occurrences of vireos in the action area during construction even though no direct effect to these occurrences is expected. Given the relatively small, dispersed permanent impacts and the lower habitat quality of temporarily impacted sites, the small reduction in suitable vireo habitat should not limit reproduction of existing occurrences or prevent population expansion in the action area.

The vireo populations in proximity to the drainages affected by the SRPL Project are anticipated to remain viable during and following SRPL Project construction, and thus, the SRPL Project will not appreciably reduce the numbers, reproduction, or distribution of the species within the action area or throughout the species range.

2. Operations and Maintenance

The total amount of land within the ROW and impact areas outside the ROW is 1,096 ha (2,708 ac). To assess potential impacts to vireo individuals and suitable habitat from O&M activities, we determined that the ROW and temporary and permanent impact sites outside of the ROW include 39.4 ha (97.4 ac) of suitable vireo habitat or 3.6 percent of the total amount of land within these areas.

SDG&E estimates overall habitat impacts of 18 ha (45 ac) for standard O&M activities within the ROW and impact areas outside the ROW. Because suitable habitat for vireo represent 3.6 percent of the total area potentially impacted by O&M activities, impacts to suitable habitat for vireo from these activities are reasonably expected to be 3.6 percent of the overall annual impact or 0.65 ha (1.62 ac) annually.

Standard O&M activities, such as road maintenance (grading), tree trimming, and structure replacement and repairs, and increased human disturbance could potentially affect vireo

behaviors. SDG&E will implement **SS-CM-5** to minimize potential impacts of O&M activities on vireos. This measure limits O&M activities during the vireo breeding season and establishes guideline to minimize impacts to nesting vireo in cases where O&M activities must occur during the breeding season. Overall, this annual low-level loss of habitat, conducted primarily outside the breeding season and spread across the linear action area, is too small to result in any significant impact to individual vireos or the species as a whole.

Indirect Effects of Construction and Operations and Maintenance Activities

Within or adjacent to the action area, vireos may be indirectly affected by degradation of vireo habitat through an increase in human activities, noise, dust, night lighting, and cowbird parasitism. Because of the small amount of habitat destruction from towers, tower pads, and other permanent features; the location of these permanent features adjacent to an existing transmission line, and the relative porous nature of transmission lines (i.e., they act as more a filter than a hard barrier), indirect impacts from habitat fragmentation and isolation are not anticipated.

Human disturbance from noise and human activity could occur through construction activities during the breeding season such as brush clearing for foot paths and reconductoring (e.g., dragging the conductor through habitat). This impact will be minimized by establishing a buffer around vireo nests and restricting construction and O&M activity within the buffer and implementing noise attenuation measures, when appropriate (**SS-CM-5**).

Dust and night lighting could also impact vireos adjacent to construction activities. Dust generated from construction activities could decrease plant vigor within in adjacent vireo habitat. Dust will be minimized through implementing dust control measures, as described in the project description (**G-CM-24**). In addition, lights will be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from habitat (**G-CM-13**).

Standard O&M activities such as road maintenance, tree trimming, and structure replacement and repair could generate noise that could affect vireo, if the activities are conducted during the breeding season. However, these activities will occur outside of the breeding season, when feasible, which will minimize impacts to vireos. If these activities cannot occur outside the breeding season, noise attenuation measures will be implemented (**SS-CM-5**) to avoid and minimize these impacts.

Conservation Actions and Effect on Recovery

In addition to the onsite restoration of temporary impacts at a 1:1 ratio as discussed above, SDG&E committed to offset construction impacts to vireo suitable and occupied habitat through the offsite acquisition of similar habitat at a minimum 3:1 ratio for permanent and 2:1 for temporary impacts. In addition, SDG&E committed to offset permanent impacts to habitat associated with O&M activities at similar ratios. The precise acreage of permanent impacts associated with O&M activities was not identified in the 2009 biological and conference opinion,

but these impacts were expected to be minor. These commitments were memorialized in SS-CM-6 and G-CM-45 of the 2009 biological and conference opinion.

Based on these ratios and the reduced impacts of the modified SRPL Project, a minimum of 14.4 ha (35.7 ac) of vireo suitable and occupied habitat would be expected to be acquired for conservation to offset construction impacts. Based on the impacts identified for O&M activities, new permanent impacts would be offset at a 3:1 ratio, which would likely include only those impacts associated with transmission line-induced fire prevention and management activities. Since riparian habitat is not expected to be removed during O&M activities to prevent or manage fires, no additional conservation to offset O&M impacts would be expected. Conservation expected by the SRPL Project to offset construction and O&M impacts to vireo over the life of the SRPL Project would be 14.4 ha (35.7 ac) (Table 5).

To fulfill their commitment to offset both construction and long-term O&M impacts to vireo suitable and occupied habitat, SDG&E, with concurrence from the Wildlife Agencies, has committed to acquisition and management of the Long Potrero, Chocolate Canyon, and Nabi parcels (**SS-CM-6**), as described in the HAP. These three sites include a total of 44.3 ha (109.5 ac) of suitable and occupied vireo habitat and will be managed in perpetuity for the conservation of vireo through a non-wasting endowment provided by SDG&E.

Long Potrero is not currently known to be occupied by vireo, but there are 23.2 ha (57.4 ac) of suitable habitat on the property. Chocolate Canyon has 13.7 ha (33.8 ac) of suitable vireo habitat and is approximately 0.8 km (0.5 mi) upstream of a likely vireo breeding location identified in 2010 (Kris Alberts, Chambers Group Inc, pers. comm. to Eric Porter 2010). Nabi has 7.4 ha (18.3 ac) of occupied habitat based on a 2005 observation (CFWO GIS database).

Because impacts to vireo habitat are spread throughout the SRPL alignment, conservation at these specific parcels may not directly offset impact to each patch of suitable habitat; however, impacts to each habitat patch have been minimized to avoid injury or death of vireo individuals. Long-term conservation of the Long Potrero, Chocolate Canyon, and Nabi parcels represents a significant contribution to recovery of the vireo by protecting current breeding territories and suitable habitat that may be used by vireos to expand their current range.

Conclusion

After reviewing the current status of the species, the environmental baseline for the action area, the 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 the vireo. We based this conclusion on the following:

- 1) SDG&E has significantly reduced construction impacts such that the modified SRPL Project will impact only 6.5 ha (16.3 ac) or 3.8 percent of the 169 ha (418 ac) of suitable vireo habitat in the action area; suitable habitat for vireo within the action area represents only a very small fraction of vireo habitat throughout the species range;

- 2) The temporary and permanent removal of 6.5 ha (16.3 ac) of suitable vireo habitat during construction will not affect currently occupied vireo habitat, and temporary impacts will be restored;
- 3) The small reduction in suitable vireo habitat should not limit reproduction of existing occurrences or prevent population expansion in the action area; thus, vireo populations in proximity to the drainages affected by the SRPL Project are anticipated to remain viable during and following project construction.
- 4) Standard O&M activities are expected to affect only a very minor amount of suitable vireo habitat 0.65 ha (1.62 ac) annually; these activities will be accomplished in accordance with minimization measures to avoid impacts to individual vireos;
- 5) Indirect impacts to individual vireos during construction and O&M activities will be avoided and minimized through the implementation of the General and Species-Specific Conservation Measures;
- 6) The long-term protection and management of the Long Potrero, Chocolate Canyon, and Nabi parcels, including 44.3 ha (109.5 ac) of suitable and occupied vireo habitat, represents a significant contribution to the range-wide conservation (recovery) of this species.

Quino Checkerspot Butterfly (*Euphydryas editha quino*)

Status of the Species

The information included within the 2009 biological and conference opinion for the SRPL Project on the listing status, biology, ecology, range-wide status and distribution, population trends, and threats and conservation needs of the Quino checkerspot butterfly are hereby incorporated by reference. Additional information can also be found in the *Quino Checkerspot Butterfly (Euphydryas editha quino) 5-Year Review: Summary and Evaluation* (Service 2009b) at: http://www.fws.gov/ecos/ajax/docs/five_year_review/doc2515.pdf and the *Quino Checkerspot Butterfly (Euphydryas editha quino) Recovery Plan* (“Quino recovery plan”) (Service 2003) at http://ecos.fws.gov/docs/recovery_plan/030917.pdf.

Critical Habitat

Critical habitat for the Quino was designated on April 15, 2002 (67 FR 18356), and revised on June 17, 2009 (74 FR 28776). Approximately 25,141 ha (62,125 ac) of critical habitat for Quino within nine units are designated throughout the species’ current range in the United States (i.e., Riverside and San Diego counties, California).

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, 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 essential to the conservation of Quino are:

- 1) Open areas within scrublands at least 2.0 square meters (m²) [21.5 square feet (ft²)] in size that:
 - a) Contain no woody canopy cover; and
 - b) Contain one or more of the host plants *Plantago erecta*, *Plantago patagonica*, *Antirrhinum coulterianum*, or *Collinsia concolor*; or
 - c) Contain one or more of the host plants *Cordylanthus rigidus* or *Castilleja exserta* that are within 100 m (328 ft) of the host plants listed above; or
 - d) Contain flowering plants with a corolla tube less than or equal to 1.10 cm (0.43 in) used for Quino checkerspot butterfly growth, reproduction, and feeding;
- 2) Open scrubland areas and vegetation within 200 m (656 ft) 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 2.0 m² (21.5 ft²) in size used for Quino checkerspot mating (i.e., hilltopping behavior) and are contiguous with (but not otherwise included in) open areas and natural vegetation described in primary constituent elements 1 and 2 above.

Environmental Baseline

According to historical sightings, historical range, and presence of host plant and other essential habitat features for Quino, suitable habitat for the Quino exists between MP-27 to MP-119 (TRC 2008B). The route from MP-27 to MP-119 falls within the Service's *Year 2005 Recommended Survey Areas 1 and 2* (Service 2005), but only portions of the action area along the route contain suitable habitat.

Following habitat assessments to identify suitable habitat within the Quino survey area, protocol surveys were conducted for the SRPL Project between 2007 and 2010. Based on these surveys, Quino occupied habitat is concentrated along four different stretches of the SRPL Project: MP-35 to MP-38 in the Jacumba Unit of designated critical habitat, MP-70 to MP-84 near Barrett Lake/Long Potrero; MP-103 to MP-109 near El Capitan Reservoir; and MP-112 to MP-119 near San Vicente Reservoir (Figure 4). We consider each of these Quino concentrations to be distinct occurrence complexes for the purposes of this analysis. Using a 1-km (0.6-mi) buffer around known Quino locations¹⁶, we estimate that there are 497 ha (1,128 ac) of occupied Quino habitat within the action area (Figure 4).

¹⁶ The 1.0 km (0.6 mi) buffer is consistent with the Quino recovery plan (Service 2003).

MP-35 to MP-38 in the Jacumba Unit (Unit 10) of Designated Critical Habitat

Ten Quino¹⁷ were observed near MP-36 and two Quino were observed near MP-35 during surveys in 2009 (Chambers Group Inc. and Osborne Biological Consulting 2009). Thirteen Quino were observed between MP-36 and MP-37 in 2010 (Chambers Group Inc. and Osborne Biological Consulting 2010). As described in the 2009 biological and conference opinion's "Status of the Species" section, this core occurrence complex is important to Quino recovery because of its isolation from other large core occurrence complexes and its unique location within high-desert juniper woodlands.

MP-70 to MP-84 near Barrett Lake/Long Potrero

During protocol surveys conducted in 2008, 14 Quino were observed between MP-75 and MP-82 near Barrett Lake, and host plants were recorded between MP-75 and MP-84 (TRC 2008b). In 2009, 5 Quino were observed near MP-71, 13 Quino were observed between MP-74 and MP-75, 10 Quino were observed near MP-79, and 5 Quino were observed near MP-80 (Chambers Group Inc. and Osborne Biological Consulting 2009). In 2010, 1 Quino was observed between MP-70 and MP-71, 3 Quino were observed between MP-74 and MP-75, and 6 Quino were observed between MP-79 and MP-81 (Chambers Group Inc. and Osborne Biological Consulting 2010). This Quino occurrence complex was previously unknown, and the high density of individuals observed in this area suggests it may be a part of a large occurrence complex that may be considered a core area and important for Quino recovery.

MP-103 to MP-109 near El Capitan Reservoir

In 2009, a single Quino was observed 244 m (800 ft) southwest of the ROW near MP-110 (Chamber Group Inc. and Osborne Biological Consulting 2009). Quino host plants were recorded by SDG&E's surveyors between MP-103 and MP-109. High potential exists for Quino to occur between MP-106 and MP-107 due to the high concentration of host plants and proximity to known locations of Quino.

MP-112 to MP-119 near San Vicente Reservoir

In 2007, protocol surveys were conducted for Quino from MP-114 to MP-119, and no Quino were observed (TRC 2008a). Quino host plants were recorded by SDG&E's surveyors between MP-112 and MP-119. In 2009, a single Quino was observed 366 m (1,200 ft) north of the ROW near MP-116.5 (Chamber Group Inc. and Osborne Biological Consulting 2009). The Service's GIS database also includes two Quino occurrences to the north of 1.4 km (0.9 mi) of MP-113 and one occurrence 1.8 km (1.1 mi) to the southwest of MP-113.

¹⁷ Survey information provided for Quino are based on number of adult observations.

Critical Habitat

The SRPL Project passes through the Unit 10 (Jacumba) of designated critical habitat for Quino, which encompasses 1,017 ha (2,514 ac) of land in southeastern San Diego County south of I-8 in the vicinity of the town of Jacumba. The Jacumba occurrence complex occurs within the Southeast San Diego Recovery Unit described in the Quino recovery plan (Service 2003). This apparently isolated occurrence complex is located in a unique high-desert region of juniper woodlands, which provides a vital element of habitat heterogeneity in the species' range.

Unit 10 contains all of the features essential to the conservation of Quino including dwarf plantain and woolly plantain host plants; nectar sources; open, woody-canopy scrublands; and hilltops (Service 2003, Service GIS database). Although this occurrence complex was described in the recovery plan as non-core, based on new occurrence information, we now consider this to be a core occurrence complex, which could be essential for the survival of the species (73 FR 3333). There are multiple Quino observations within Unit 10 near MP-35 and MP-36.

Critical habitat has also been designated immediately east of the ROW near MP-63 within Unit 9 (La Posta/Campo). Unit 9 contains approximately 1,071 ha (2,647 ac) of designated critical habitat for Quino and is likely to contain a resilient core occurrence complex including one or more subpopulations that are sources of emigrants to other habitat patches (74 FR 28777).

Within the action area, there are 51 ha (127 ac) of designated Quino critical habitat in Unit 10 (Jacumba) between MP-35 and MP-37 and 0.4 ha (0.9 ac) in Unit 9 (La Posta/Campo) near MP-63.

Effects of the Action

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger 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, are later in time, and still reasonably certain to occur.

This biological and conference opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 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 SRPL Project on designated Quino critical habitat.

For the purposes of this biological and conference opinion, we addressed impacts to designated Quino critical habitat and Quino occupied habitat using information from the 2007, 2008, 2009, and 2010 field surveys (TRC 2008A, 2008; Chambers Group Inc. and Osborne Biological

Consulting 2009, 2010). Our analysis includes an assessment of the potential effects of the modified (i.e., impact-reduced) SRPL Project on Quino and its designated critical habitat during construction and as a result of long-term O&M activities.

Based on the project and survey information available to us prior to issuance of the 2009 biological and conference opinion, we determined that the SRPL Project would permanently impact up to 10.0 ha (24.7 ac) of occupied Quino habitat and up to 6.3 ha (15.6 ac) of designated critical habitat. We also expected permanent impacts to designated critical habitat to be reduced to 3.4 ha (8.4 ac) if proposed revised critical habitat was designated as final critical habitat.

For temporary impacts, again using the project and survey information available to us in 2009, we determined that the SRPL Project would temporarily impact up to 21.8 ha (53.9 ac) of occupied Quino habitat and up to 14.8 ha (39.7 ac) of designated critical habitat. We expected temporary impacts to designated critical habitat to be reduced to 2.7 ha (6.6 ac) if proposed revised critical habitat was designated as final critical habitat.

Following issuance of the 2009 biological and conference opinion, we expected SDG&E to conduct additional protocol surveys and to make project modifications to reduce impacts, where feasible, and they have complied with conservation measures specific to these goals. Thus, the revised SRPL Project has reduced permanent and temporary construction impacts to Quino occupied habitat and Quino designated critical habitat. In addition, the impacts expected as a result of O&M activities have been better defined.

The modified SRPL Project will impact 13.3 ha (32.7 ac) of occupied Quino habitat during construction, including 6.2 ha (15.2 ac) of permanent impacts and an additional 7.1 ha (17.5 ac) of temporary impacts. Within this total impact area, 1.8 ha (4.5 ac) of the permanent impacts and 0.6 ha (1.6 ac) of the temporary impacts are designated critical habitat for Quino, all within Unit 10 (Jacumba) (Figure 4).

In addition, SDG&E will impact up to 18 ha (45 ac) of habitat annually for standard O&M activities within the San Diego portion of the action area within the range of Quino. Based on the amount of Quino occupied habitat in areas potentially impacted by O&M activities within and outside the ROW, we anticipate up to 1.9 ha (4.7 ac) of these total impacts will occur in Quino-occupied habitat, including 0.3 ha (0.6 ac) of designated critical habitat. Likewise, based on the 202-ha (500-ac) project limit for vegetation clearing associated with transmission line-related fire management activities, we anticipate up to 21 ha (52 ac) of occupied Quino habitat, including 2.8 ha (7.0 ac) of designated critical habitat, could be impacted over the life of the SRPL Project.

Conservation Measures **SS-CM-7** through **SS-CM-10** are particularly relevant to SDG&E's commitment to avoid, minimize, and offset impacts to Quino and are repeated here for ease of reference. In addition, acquisition of the Long Potrero property offsets impacts to Quino occupied habitat, including designated critical habitat.

SS-CM-7 A Project Biologist will be present during all construction and O&M activities within designated critical habitat and occupied Quino habitat to monitor and assist the construction crews to ensure impacts occur only as allowed.

SS-CM-8 The details of any site-specific restoration for temporarily impacted Quino habitat, including designated critical habitat, will be based on Appendix II of the Quino recovery plan (Service 2003) and described in a plan to be reviewed and approved by the Service. The site specific restoration plan will include, but not be limited to: (1) larval host plants (local stock, if possible) to be planted; (2) nectar resources; (3) irrigation needs and/or other establishment procedures; (4) timeline for implementation; (5) success criteria; (6) contingency measures for success criteria that are not met; (7) weed control measures; (8) monitoring program; and (9) implementation schedule. The site-specific restoration plan will be prepared and submitted to the Wildlife Agencies within 1 year of initiating ground- or vegetation-disturbing project activities. Success criteria will be modeled on undisturbed native plant communities in the vicinity of the proposed SRPL Project and sites within the area known to be occupied by Quino.

SS-CM-9 To ensure that impacts of O&M activities are not concentrated on any specific Quino occurrence complex without specific analysis of potential impacts to the complex, no more than 4 ha (10 ac) of Quino habitat will be removed for O&M activities over the life of the SRPL Project within any one occurrence complex unless the habitat loss is assessed and approved by the Service. Quino occurrence complexes are defined by the MP limits described in the Environmental Baseline of this analysis.

SS-CM-10 SDG&E will complete the purchase and provide for the long term management of occupied Quino habitat at the Long Potrero property. Temporary impacts to occupied habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Direct Effects of Construction and Operations and Maintenance Activities

1. Construction Activities

Quino occurrences are concentrated in four locations (i.e., occurrence complexes) along the SRPL alignment from MP-35 to MP-38, MP-70 to MP-84, MP-103 to MP-109, and MP-112 to MP-119 (Figure 4). Activities along the transmission line to construct towers, pads, access roads, staging areas, pull down areas, and helipads could kill or injure Quino eggs, larvae or pupae during the removal or crushing of occupied host plants. In addition, crushing or trampling of eggs, larvae or pupae could occur if there is human foot traffic through occupied host plants and/or nectar sources outside of the proposed impact area. **G-CM-6**, which requires flagging project limits and sensitive resources, and **SS-CM-7**, which requires a Project Biologist during construction and O&M in occupied Quino habitat, will limit impacts of human foot traffic. Adult Quino could be injured or killed by moving vehicles during construction if construction is conducted during the flight season. **G-CM-24** limits vehicle speeds to 24 km/hr (15 mph) on unpaved surfaces, which will limit vehicle strikes.

In addition to loss of individual Quino larvae, eggs, pupae and adults, the permanent and temporary removal of 13.3 ha (32.7 ac) of occupied habitat will reduce the availability of oviposition sites, larval food sources, pupal sheltering sites and adult nectar sources within the action area; however, the impacted areas are all surrounded by large areas of Quino habitat (e.g. the Jacumba critical habitat unit and BLM and USFS land surrounding the remaining impacted areas), which include sufficient resources to sustain the affected Quino occurrence complexes during and following SRPL Project construction. Where the impacts are identified as temporary (7.1 ha or 17.5 ac), SDG&E will restore Quino habitat, including the primary constituent elements affected within designated Quino critical habitat. The restoration will follow the methods and success criteria outlined in the Habitat Restoration Plan, consistent with **SS-CM-8**; thus, we expect temporarily impacted areas to support Quino when host plants and shrub structure return. Where impacts are relatively small [< 0.4 ha (1.0 ac)] and surrounded by suitable habitat, temporarily impacted areas may support viable Quino habitat by the following flight season; however, where impacts are greater, it may take up to 5 years to regain shrub structure that is typical of viable Quino habitat.

Overall, construction impacts include relatively small and dispersed areas of ground disturbance and in total affect only 2.8 percent of the estimated Quino-occupied habitat within the action area, and measures are in place to minimize impacts to Quino adults. Thus, the loss of individual Quino and its habitat at any one of the four occurrence complexes as a result of construction activities is not expected to result in an appreciable reduction in the numbers, reproduction, or distribution of Quino within the action area. We expect all four occurrence complexes to remain viable during and following construction.

Finally, we do not anticipate that the permanent loss of Quino occupied habitat to construct the SRPL Project will obstruct Quino movement, and given the relatively small and dispersed areas of permanent ground disturbance, the SRPL Project is unlikely to contribute substantially to habitat fragmentation for Quino.

2. Operations and Maintenance Activities

The total amount of land within the ROW and impact areas outside the ROW within the San Diego portion of the action area within the range of Quino is 1,096 ha (2,708 ac). To assess potential impacts to Quino individuals and habitat from O&M activities within these areas, we used a 1.0-km (0.6 mi) buffer around all of the known Quino observations in the action area (Figure 4) and determined that the ROW and impact sites outside of the ROW support up to 114 ha (282 ac) of occupied Quino habitat¹⁸ or 10.4 percent of the total amount of land within these areas.

SDG&E estimates overall habitat impacts of 18 ha (45 ac) for standard O&M activities within the San Diego portion of the action area. Because Quino-occupied habitat represents 10.4

¹⁸ This estimate of Quino occupied habitat within the ROW and impact areas outside the ROW is a subset of the estimated 497 ha (1,128 ac) of Quino occupied habitat within the greater action area and includes 15.5 ha (38.3 ac) of designated critical habitat for Quino.

percent of the total area potentially impacted by standard O&M activities, impacts to Quino-occupied habitat from these activities are reasonably expected to be 10.4 percent of the overall annual impact or 1.9 ha (4.7 ac) annually.

The use of access roads constructed within and adjacent to occupied Quino habitat could result in the removal or crushing of host plants and associated Quino eggs, larvae or pupae if Quino host plants encroach into these areas. Road maintenance and vegetation management to maintain other permanent impact areas (e.g., tower sites and TSAPs) could also result in the death of eggs, larvae or pupae if Quino colonize plants along or within these areas. Reconducting activities could temporarily impact Quino habitat and result in the death of eggs, larvae or pupae where Quino occur along the SRPL ROW. **G-CM-48** commits SDG&E to road maintenance every 2 years, which should reduce the potential for establishment of host plants and the associated loss of Quino individuals within access roads. Moreover, the annual loss of up to 1.9 ha (4.7 ac) of Quino habitat will be spread across the alignment of the SRPL Project and is likely to result in the removal of only a few to several Quino host plants at any given location. This low-level loss of host plants and associated Quino eggs, larvae or pupae is not expected to affect the overall reproductive success or viability of the four Quino occurrence complexes within the action area.

Finally, based on the 202-ha (500-ac) project limit for vegetation clearing associated with transmission line-related fire prevention and management activities in the San Diego portion of the action area, we expect removal of up to 21 ha (52 ac) of occupied Quino habitat over the life of the SRPL Project. **SS-CM-9** limits the amount of Quino occupied habitat that will be removed within any one occurrence complex to 4 ha (10 ac) over the life of the SRPL Project unless approved by the Service. This conservation measure ensures that the SRPL Project is consistent with the assumption that impacts will be dispersed along the alignment and will not result in significant impacts to any individual occurrence complex without further evaluation.

Indirect Effects of Construction and Operations and Maintenance Activities

Indirect impacts to Quino habitat could occur where construction and O&M activities occur directly adjacent to Quino habitat. Wind borne dust particles from construction traffic and blasting could affect Quino host plants, such as dot-seed plantain (*Plantago erecta*), by covering them with a layer of dust. Dust on the plants could potentially inhibit their growth as well as decrease their palatability to Quino larvae. Elevated dust levels may also affect the ability of the larvae and adults to respire normally. Insects are known to be adversely affected by coatings of oil films, emulsions, or dust particles that clog the respiratory openings (spiracles) on their bodies (Storer et al. 1972). Implementation of proposed dust reduction measures (**G-CM-5** and **G-CM-24**) by SDG&E is anticipated to minimize effects associated with increased dust.

Artificial lighting associated with construction may increase predation pressure on Quino by extending the foraging period for diurnal predators (Longcore and Rich 2004). SDG&E will use night lighting that is of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat (**G-CM-13**) to minimize increased predation pressure on Quino from night lighting.

Potential indirect effects to Quino occupied habitat also include the unintentional conversion from native vegetation to non-native annual grassland resulting in the potential displacement of larval host plants and replacement of nectar plants, including dominant shrubs. Unpaved roads and trails, such as access roads or footpaths, can serve as conduits of nonnative seed dispersal as seeds of invasive plant species could be transported through the project area on shoes, as well as construction and maintenance vehicles. Non-native plants have been shown to displace Quino host plants, which appear to be poor competitors against non-native grasses (Service 2003). In addition to displacing larval host plants, nonnative annuals have been shown to replace nectar sources (Service 2003). SDG&E will implement the Weed Control Plan (**G-CM-20**) to minimize increased introduction of non-native plants into Quino habitat.

Adult Quino may also be injured or killed by moving vehicles during construction and O&M activities and by unauthorized use of project access roads by off-road vehicles. SDG&E will implement **G-CM-21**, **G-CM-25**, **G-CM-26**, **G-CM-28**, and **G-CM-29** to minimize impacts to Quino that could occur due to the use of the project's access roads.

Effect on Critical Habitat

Designated Quino critical habitat within Unit 9 (La Posta/Campo) will not be impacted by SRPL Project construction or O&M activities. SRPL Project construction will permanently impact 1.8 ha (.5 ac) and temporarily impact 0.6 ha (1.6 ac) of designated Quino critical habitat within Unit 10 (Jacumba). These impacts represent 0.2 percent of the 1,017 ha (2,514 ac) of designated Quino critical habitat, all within Unit 10.

The ROW and impact areas outside the ROW in the San Diego County portion of the action area include 15.5 ha (38.3 ac) of designated Quino critical habitat, which represents 1.4 percent of the area potentially impacted by standard O&M activities; thus, impacts to Quino designated critical habitat from these O&M activities are reasonably expected to be 1.4 percent of the overall 18-ha (45-ac) annual impact or 0.3 ha (0.6 ac) annually. Likewise, vegetation clearing to prevent or manage potential transmission line-related fires [up to 202 ha (500 ac)] may impact up to 2.8 ha (7.0 ac) of designated Quino critical habitat over the life of the SRPL Project¹⁹.

The biological function of Unit 10 of designated critical habitat for Quino (identified as breeding, feeding and sheltering in 73 FR 3328) is expected to be maintained during and after SRPL Project construction because of the relatively small and dispersed permanent impacts, the restoration of temporary impacts [i.e., restoration of 0.6 ha (1.6 ac) of primary constituent elements], and the general and specific conservation measures described above, which will be implemented for construction and O&M activities in designated critical habitat, as well as occupied habitat.

¹⁹ These impacts are inclusive of, and not in addition to, the impacts described above for O&M impacts affecting occupied Quino habitat.

Conservation Actions and Effect on Recovery

In addition to the onsite restoration of temporary impacts at a 1:1 ratio as discussed above, SDG&E committed to offset construction impacts to occupied Quino habitat, including designated critical habitat, through the offsite acquisition of similar habitat at a minimum 3:1 ratio for permanent and a 1:1 ratio for temporary impacts. In addition, SDG&E committed to offset permanent impacts to habitat associated with O&M activities at similar ratios. The precise acreage of permanent impacts associated with O&M activities was not identified in the 2009 biological and conference opinion, but these impacts were expected to be minor. These commitments were memorialized in **SS-CM-4** and **G-CM-45** of the 2009 biological and conference opinion.

Based on these ratios and the reduced impacts of the modified SRPL Project, a minimum of 25 ha (63 ac) of occupied Quino habitat and at least 6 ha (15 ac) of designated Quino critical habitat was expected to be acquired for conservation to offset construction impacts. Based on the impacts identified for O&M activities, new permanent impacts would be offset at a 3:1 ratio, which would likely include only those impacts associated with transmission line-related fire prevention and management activities. SDG&E would be expected to offset O&M impacts by conserving up to an additional 63 ha (156 ac) of occupied and 8 ha (21 ac) of critical habitat for fire prevention and management activities. Thus, conservation expected by SDG&E to offset construction and O&M impacts to Quino and its designated critical habitat over the life of the SRPL Project would be 88.5 ha (219.0 ac) of occupied and 14.5 ha (36.0 ac) of critical habitat or 103 ha (256 ac) of Quino habitat in total (Table 5).

To fulfill their commitment to offset both construction and long-term O&M impacts to Quino, SDG&E, with concurrence from the Wildlife Agencies, has acquired and provided for the management of Quino occupied habitat at the Long Potrero site as described in the HAP (**SS-CM-10**). We estimate that the acquired Long Potrero parcels include 328.6 ha (812.0 ac) of occupied Quino habitat. The Long Potrero site will be managed in perpetuity for the conservation of Quino through a non-wasting endowment provided by SDG&E.

Because impacts to Quino and its designated critical habitat from both construction and anticipated O&M activities are spread throughout the alignment, conservation of the Long Potrero site does not directly offset impacts to all four Quino occurrence complexes that will be affected by the SRPL Project. However, impacts to each occurrence complex have been minimized to the point that we believe each complex will experience only small, mostly temporary, impacts. These impacts will not significantly affect the ability of the designated critical habitat to support the Quino occurrence complexes within the action area.

The primary constituent elements for Quino critical habitat are those features that are essential in meeting the primary biological needs of larval diapause and feeding; pupation; adult oviposition, nectaring, roosting, basking, and dispersal; genetic exchange; and shelter. Although the Long Potrero property is not designated as Quino critical habitat, it supports these essential habitat features and is part of the Barrett Lake/Long Potrero Quino occurrence complex that was not known at the time we designated Quino critical habitat. The high density of Quino individuals

observed in the general Barrett Lake/Long Potrero area suggests this area may be a part of a large occurrence complex that may be considered a core area and important for Quino recovery. Moreover, the Long Potrero site is a large area occupied by Quino and is surrounded by undeveloped land managed by the BLM and USFS.

In summary, we believe the conservation and long-term management of this replacement habitat will effectively offset the anticipated adverse effects to occupied Quino habitat, designated Quino critical habitat, and the associated loss of Quino individuals from the SRPL Project's construction and O&M activities. By helping to maintain and enhance the Barrett Lake/Long Potrero occurrence complex, the conservation of the Long Potrero site represents a significant contribution to the recovery of Quino.

Conclusion

After reviewing the current status of the Quino, the environmental baseline, 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 the Quino or to adversely modify its designated critical habitat.

We reached this conclusion by considering the following:

- 1) SDG&E has significantly reduced construction impacts such that the modified SRPL Project will impact only 13.3 ha (32.7 ac) or 2.8 percent of the 497 ha (1,128 ac) of occupied Quino habitat in the action area; Quino occupied habitat within the action area represents only a very small fraction of Quino habitat throughout the species range;
- 2) Construction impacts will occur across the linear action area and occur in small isolated patches so that the viability of the four occurrence complexes in the action area is not at risk during or following construction;
- 3) Temporarily impacted areas of Quino occupied habitat will be restored in accordance with clear success criteria to ensure that these areas will regain ecological function for Quino;
- 4) Impacts to Quino occupied habitat from standard O&M activities are expected to include no more than 1.9 ha (4.7 ac) annually and, similar to construction impacts, will occur across the linear action area, which minimizes the impacts to any one Quino occurrence complex;
- 5) O&M impacts to address fire prevention and management along the transmission line will impact no more than 21 ha (52 ac) of occupied Quino habitat over the life of the SRPL Project and will be limited to 4 ha (10 ac) of impact within any individual occurrence complex to reduce significant risk to any of the four known Quino complexes within the action area;

- 6) Indirect impacts to Quino during construction and O&M activities will be avoided and minimized through the implementation of the General and Species-Specific Conservation Measures;
- 7) Permanent loss of primary constituent elements of Quino designated critical habitat from construction and O&M activities are relatively minor and will not alter the ecological function of Unit 10 (Jacumba) or the overall critical habitat designation for Quino in supporting the breeding, feeding, and sheltering of Quino;
- 8) Quino surveys in the action area as a result of the SRPL Project have contributed to our knowledge of the species as a whole and the long-term protection and management of 328.6 ha (812.0 ac) of Quino occupied habitat at the Long Potrero site represents a significant contribution to sustaining the Barrett Lake/Long Potrero Quino occurrence complex and meeting the overall conservation needs (recovery) of the species.

Arroyo Toad [*Anaxyrus (=Bufo) californicus*]

Status of the Species

The information included within the 2009 biological and conference opinion for the SRPL Project on arroyo toad biology, ecology, range-wide status and distribution, population trends, and threats and conservation needs are hereby incorporated by reference. Additional information can also be found in the *Arroyo Toad (Bufo californicus) 5-Year Review: Summary and Evaluation* (Service 2009c) at: http://ecos.fws.gov/docs/five_year_review/doc2516.pdf and the *Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan* (“Arroyo toad recovery plan”) (Service 1999) at: http://ecos.fws.gov/docs/recovery_plan/990724.pdf.

Listing Status

The Service listed the arroyo toad as endangered on December 16, 1994 (59 FR 63264). The arroyo toad recovery plan was completed on July 24, 1999 (Service 1999). Based on the improvements in the status of the arroyo toad and conservation management to control threats since it was listed, the Service recommended, in our August 3, 2009, 5-year review of the species (Service 2009c), that the arroyo toad be downlisted from endangered to threatened status.

Species Description

The arroyo toad is a small, dark-spotted toad of the family Bufonidae. The parotoid glands, located on the top of the head, are oval-shaped and widely separated. A light/pale area or stripe is usually present on these glands and on top of the eyes. The toad’s underside is buff-colored and usually without spots (Stebbins 1985). Recently metamorphosed individuals easily blend with the substrate and are usually found adjacent to water. At the time of listing, the toad was described as the arroyo southwestern toad (*Bufo microscaphus californicus*). Gergus (1998) published genetic justification for the reclassification of the arroyo southwestern toad as a full

species [i.e., arroyo toad (*Bufo californicus*)]. According to Frost et al. (2006) and Crother (2008), the currently recognized name for the arroyo toad is *Anaxyrus californicus*.

Critical Habitat

Critical habitat was designated for the toad on February 7, 2001 (66 FR 9414), but it was vacated by court order on October 30, 2002, and remanded for re-designation. Critical habitat for the toad was re-proposed on April 28, 2004 (69 FR 23254) and was finalized on April 13, 2005 (70 FR 19562). The action area for the SRPL Project does not include designated critical habitat for the arroyo toad. However, the Service proposed to revise arroyo toad critical habitat on October 13, 2009 (74 FR 52612), and the action area for the modified SRPL Project includes proposed critical habitat.

A total of 44,155 ha (109,109 ac) of critical habitat for the arroyo toad are proposed in Monterey, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. The action area includes portions of Unit 17 (San Diego River Basin), Unit 18 (Sweetwater River Basin), and Unit 19 (Cottonwood Creek Basin) of proposed critical habitat.

Primary constituent elements for proposed arroyo toad critical habitat are:

- 1) Rivers or streams with hydrologic regimes that supply water to provide space, food and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads. Breeding pools must persist a minimum of 2 months for the completion of larval development. However, due to the dynamic nature of southern California riparian systems and flood regimes, the location of suitable breeding pools may vary from year to year. The conditions necessary for successful reproduction of arroyo toads are:
 - a. Breeding pools with areas less than 20 cm (12 in) deep;
 - b. Areas of flowing water with current velocities less than 40.0 cm per second (1.3 ft per second); and
 - c. Surface water that lasts for a minimum of 2 months during the breeding season;
- 2) Riparian and adjacent upland habitats, particularly low-gradient (typically less than 6 percent) stream segments and alluvial streamside substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles; and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground, to provide foraging and living areas for juvenile and adult arroyo toads.
- 3) A natural flooding regime, or one sufficiently corresponding to natural, characterized by intermittent or near perennial flow that contributes to the persistence of shallow pools into at least mid-summer, and that maintains areas of open, sparsely vegetated, sandy stream

channels and terraces by periodically scouring riparian vegetation; and also that modifies stream channels and terraces and redistributes sand and sediment, such that breeding pools and terrace habitats with scattered vegetation are maintained; and

- 4) Stream channels and adjacent upland habitats that allow for movement to breeding pools, foraging areas, overwintering sites, upstream and downstream dispersal, and recolonization of areas that contain suitable habitat.

Environmental Baseline

Project-specific surveys were conducted within the action area in 2009 (RECON 2009c) and 2010 (ICF International 2010). Occupied breeding habitat was identified along Cottonwood Creek near MP-77 in 2009 and along Potrero Creek near MP-71 in 2010. Existing survey techniques cannot determine occupancy in upland habitat; thus, for this analysis, USFS modeled habitat (see 2009 biological and conference opinion for model details) and proposed arroyo toad critical habitat were used to identify suitable arroyo toad habitat within the action area.

Based on the USFS habitat suitability model, the action area includes 328.6 ha (812.0 ac) of suitable habitat for arroyo toad. Where the USFS model is applied, it captures all of the proposed critical habitat designation within the action area, with the exception of 2.8 ha (7.0 ac) between MP-92 and MP-93. In addition, the USFS model was not applied west of MP-103, which includes 82.5 ha (204.0 ac) of proposed critical habitat in Unit 17 (Figure 5).

To estimate total habitat suitable for arroyo toad in the action area, we combined the USFS model with proposed critical habitat in Unit 17 and proposed critical habitat between MP-92 and MP-93 for a total of 413.9 ha (1,023.0 ac). Proposed arroyo toad critical habitat within this total amount of suitable arroyo toad habitat in the action area includes 162 ha (399 ac) with 83 ha (204 ac) in Unit 17, 32 ha (80 ac) in Unit 18, and 47 ha (115 ac) in Unit 19.

The majority of suitable habitat for the arroyo toad within the action area is located within the Cleveland National Forest boundary between MP-58 and MP-78 in the Sweetwater River and Tijuana River/Cottonwood Creek basins. Specifically, occupied arroyo toad habitat is known from near the project alignment near Cottonwood and Potrero creeks. However, arroyo toads also occur on private lands within the action area. Occupied private lands within the action area are generally within the planning area of the draft East County MSCP, which is currently in development.

A number of projects and land uses within the SRPL Project vicinity have degraded arroyo toad habitat in this area. Agriculture, roads, and urban development have degraded upland habitat, and sand mining, emergency road repairs, and introduction of invasive aquatic plants and predators have degraded riparian habitat. In addition, there is a long history of illegal fills and activities within riparian areas in San Diego County. Some of these have resulted in enforcement actions by the Corps of Engineers and EPA, but many unauthorized activities go undetected. These types of activities all have the potential to impact the arroyo toad either directly through

mortality or indirectly due to loss or degradation of habitat. Nevertheless, arroyo toad populations within and adjacent to the action area continue to persist and are important to the recovery of the species.

As previously mentioned, a majority of the suitable arroyo toad habitat within the action area occurs on public lands. According to the USFS model, about 5,133 ha (12,685 ac) of suitable arroyo toad habitat occurs within the Cleveland National Forest. The Cleveland National Forest implements a land and resource management plan for the forest (USFS 2005), which will result in long term benefits to the arroyo toad, including habitat acquisition, wildlife habitat management and monitoring, and pest and non-native species control.

Effects of the Action

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger 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, are later in time, and still reasonably certain to occur.

This biological and conference opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 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 SRPL Project on proposed arroyo toad critical habitat.

For the purposes of this biological and conference opinion, we addressed direct impacts to arroyo toad occupied breeding habitat; arroyo toad upland aestivation habitat; and proposed arroyo toad critical habitat. Our analysis includes an assessment of potential effects of the modified SRPL Project on the arroyo toad and its proposed critical habitat during construction and as a result of long-term O&M activities. We conducted an independent analysis of the impact of the SRPL Project on the arroyo toad. Therefore, estimates of the permanent and temporary impacts differ from those presented in the Pre-construction Consultation Report.

Based on the project survey information and models available to us prior to issuance of the 2009 biological and conference opinion, we determined that construction of the SRPL Project would permanently impact up to 10.5 ha (25.9 ac) and temporarily impact up to 74.0 ha (182.8 ac) of arroyo toad habitat for a total impact of 84.5 ha (208.7 ac).

Following issuance of the 2009 biological and conference opinion, we expected SDG&E to conduct additional protocol surveys and to make project modifications to reduce impacts, where feasible, and they have complied with conservations measures specific to these goals. Thus, the modified SRPL Project has reduced permanent and temporary construction impacts to arroyo

toad breeding and upland aestivation habitat. In addition, the impacts expected as a result of O&M activities have been better defined.

The modified SRPL Project will impact 40 ha (99 ac) of arroyo toad habitat, including 6 ha (15 ac) of permanent and 34 ha (84 ac) of temporary impacts. The SRPL Project will impact 19.0 ha (46.7 ac) of proposed arroyo toad critical habitat, including 1.0 ha (2.5 ac) of permanent and 18.0 ha (44.2 ac) of temporary impacts. These impacts will occur in Unit 17 [16.0 ha (39.6 ac)], Unit 18 [0.2 ha (0.6 ac)], and Unit 19 [2.8 ha (6.5 ac)]. Since all proposed critical habitat is considered suitable habitat for the arroyo toad, the impacts to proposed arroyo toad critical habitat are included within, and are not in addition to, the overall impact totals for arroyo toad (Figure 5).

In addition, SDG&E will impact up to 18 ha (45 ac) of habitat annually for standard O&M activities within the San Diego portion of the action area within the arroyo toad's range. Based on the amount of arroyo toad habitat in areas potentially impacted by O&M activities within and outside the ROW, we anticipate up to 1.0 ha (2.5 ac) of these total impacts will occur in habitat suitable for arroyo toads, including 0.3 ha (0.7 ac) in proposed arroyo toad critical habitat. Likewise, based on the 202-ha (500-ac) project limit for vegetation clearing associated with transmission line-related fire prevention and management activities, we anticipate up to 11.1 ha (27.5 ac) of habitat suitable for arroyo toads, including 3.2 ha (8.0 ac) of proposed critical habitat could be impacted over the life of the SRPL Project for these activities.

Conservation Measures **SS-CM-11** through **SS-CM-15** are particularly relevant to SDG&E's commitment to avoid, minimize, and offset impacts to the arroyo toad and are repeated here for ease of reference.

SS-CM-11 SDG&E will implement the Arroyo Toad Translocation and Monitoring Program (Appendix 4) during construction and O&M activities for all activities requiring 2 ha (5 ac) of habitat removal or greater that occur adjacent to occupied breeding and/or within upland aestivation sites, including impact sites within proposed critical habitat.

SS-CM-12 To avoid and minimize impacts to arroyo toads, access road construction and use during construction and O&M activities, with the exception of emergency situations, will occur during daylight hours (from 2 hours after sunrise to 2 hours before sunset) when amphibian movement is less frequent.

SS-CM-13 No construction activities will take place within arroyo toad breeding habitat. With the exception of emergencies (e.g., downed power lines), O&M activities that require work within arroyo toad breeding habitat will be planned to avoid the arroyo toad breeding season (March 15-July 31) to minimize potential impacts to breeding adults (including potential sedimentation impacts to toad eggs) and dispersing juveniles.

SS-CM-14 To avoid long-term impacts to wildlife movement, including, but not limited to arroyo toad movement within the action area, all temporary arroyo toad exclusion fencing and

any temporary fencing used during construction and O&M activities will be removed concurrent with completion of the activities.

SS-CM-15 SDG&E will complete the purchase and provide for the long-term management of occupied arroyo toad breeding habitat at the Long Potrero and Nabi sites. Temporary impacts to occupied breeding and occupied upland aestivation habitat will be restored on site at a 1:1 ratio in accordance with the Habitat Restoration Plan.

Direct Effects of Construction and Operations and Maintenance Activities

1. Construction Activities

Because no occupied breeding habitat was identified in surveys and no construction activities will occur during the arroyo toad breeding season (March 15-July 31) within arroyo toad breeding habitat (SS-CM-13), we anticipate no impacts to arroyo toad eggs, larvae, or breeding adults.

Activities along the transmission line to construct towers, pads, access roads, staging areas, pull down areas, and helipads will result in the loss of suitable arroyo toad habitat including no more than 6 ha (15 ac) of permanent impacts and 34 ha (84 ac) of temporary impacts. To avoid and minimize direct effects to the arroyo toad, barrier fencing will be installed around construction/staging areas larger than 2 ha (5 ac) within suitable arroyo toad habitat (**SS-CM-11**), and any arroyo toads found will be removed from the impact area prior to initiation of construction activities in these areas.

Based on the 2-ha (5-ac) limit, the arroyo toad translocation program will be implemented in four areas: an approximately 2.1-ha (5.4-ac) stringing site near MP-71, the 12-ha (31-ac) Kreutzkamp Construction Yard near MP-74, the 7-ha (17-ac) Hartung Construction Yard along the San Diego River between MP-102 and MP-103, and the 9-ha (21-ac) Helix Construction Yard south of MP-105. These four sites are within temporary impacts sites. In total, arroyo toads will be trapped and relocated within 30.1 ha (74.4 ac) or 89 percent of the 34-ha (84-ac) temporary impact area. The fencing will remain until all construction activities within these areas are completed. The area within the barrier fence will be surveyed by the Project Biologist prior to construction. If climatic conditions are not appropriate for arroyo toad movement during the pre-construction surveys, the biologist will attempt to illicit a response from the arroyo toad by irrigating the fenced area to simulate a rain event. Any arroyo toads detected within the barrier fencing will be collected by the Project Biologist and placed on the outside of the barrier fence within the nearest secure suitable habitat. With natural rainfall and/or repeated watering, we believe it is likely a majority of the arroyo toads (roughly 50 to 75 percent) in the impact area will surface and be relocated.

The translocation of arroyo toads was successfully conducted for the Rincon Harrah's Casino in San Diego County in 2001. As part of the Rincon Harrah's Casino project, about 144 arroyo toads were removed from the casino footprint prior to construction. Of the 144 arroyo toads

removed, 50 were implanted with Passive Integrated Transponders (PIT tags) and translocated to adjacent, suitable habitat on the Rincon Reservation. Follow-up studies conducted in 2006 (5 years post-translocation) located three of the pit-tagged arroyo toads (6 percent of the total number of marked individuals) within the vicinity of the translocation site (W.E. Haas, W. E. Haas, Varanus Biological Services, pers. comm. to M. Moreno 2006). Since few arroyo toads are thought to survive past 5 years in the wild (Sweet 1993), the results of the monitoring suggest that this was an effective method for minimizing project-related impacts to arroyo toads.

Construction of the SRPL Project will permanently impact 6 ha (15 ac) of suitable arroyo toad habitat, and as indicated above, an additional 34 ha (84 ac) of habitat will be temporarily impacted. This loss of foraging, aestivation, and dispersal habitat could affect arroyo toad populations in the SRPL Project vicinity through increased competition for limited resources or increased predation risk.

However, with the exception of the three construction yards and the stringing site near MP-71, impacts to suitable arroyo toad upland habitat will be small and spread out over a large area such that impacts to local populations will be minor. Moreover, the temporarily affected habitat [34 ha (84 ac)], including habitat within the large staging and stringing areas, will be restored on site following the methods and success criteria outlined in the Habitat Restoration Plan. Since the action area includes 413.9 ha (1,023.0 ac) of suitable arroyo toad habitat and approximately 5,133 ha (12,685 ac) of arroyo toad habitat occur on USFS lands in the vicinity of the SRPL Project, as well as additional habitat on private lands, even the combined loss of 40 (ha) (99 ac) of arroyo toad habitat represents a very small percentage of the suitable upland habitat available to arroyo toads within and adjacent to the action area.

The largest impacts to arroyo toad habitat will occur at three large construction yards: the 12-ha (31-ac) Kreuzkamp Construction Yard near MP-74, the 7-ha (17-ac) Hartung Construction Yard along the San Diego River south of between MP-102 and MP-103, and the 9-ha (21-ac) Helix Construction Yard south of MP-105. Surveys could not be conducted near the Hartung or Helix yards due to a lack of water, and no arroyo toads were observed during surveys near the Kreuzkamp yard (RECON 2009c). Thus, site-specific data on toad densities is generally not available for these sites or within the action area as a whole.

In addition, very little information is available to estimate the density of arroyo toads in suitable upland habitat throughout the species' range. However, from the limited information we have on arroyo toad densities and recapture rates at other project sites in San Diego County (Service 2010d), arroyo toad abundance in the action area within suitable habitat could range between 0.47 to 0.72 toads per acre. While we acknowledge this is limited information to provide an estimate of arroyo toad densities within the impact areas of the SRPL Project, it represents the only reasonable comparison available to us at this time. Thus, we estimate that between 7 and 11 arroyo toads could be supported within the 6 ha (15 ac) of habitat permanently impacted by construction.

The arroyo toads within permanently impacted sites are not expected to survive construction since nearly all impacts are less than 0.08 ha (0.20 ac) and there are only two impacts larger than 0.2 ha (0.5 ac): a 0.21-ha (0.53-ac) impact area between MP-73 and MP-74 and a 0.25-ha (0.62-ac) impact area for road maintenance near MP-105. There will be no effort to translocate arroyo toads out of these small areas because only a very few toads would be expected at each site increasing the difficulty and lowering the benefit of the translocation efforts.

We estimate that between 39 and 61 arroyo toads could be supported within the 34-ha (84-ac) of habitat temporarily impacted by construction, with most (i.e., 35 to 54) of these toads occurring within the areas where the arroyo toad translocation program will be implemented. Since we can expect roughly 50-75 percent of the arroyo toads with these areas to surface with natural rainfall and/or repeated watering, we estimate that between 18 and 41 arroyo toads will be captured, relocated from temporarily impacted areas, and are likely to survive. The remaining arroyo toads within these sites (between 13 and 17) and an additional 4 to 7 arroyo toads in areas temporarily impacted outside of the areas where no translocation efforts will occur are not expected to survive construction impacts.

There is also the potential for arroyo toads to be killed, injured, or stressed if they become entangled or trapped within exclusionary fencing and during capture and relocation efforts. However, fence placement and trapping and relocation efforts will be conducted by a Project Biologist familiar with arroyo toad biology and ecology, whose qualifications will be subject to review by the Service. Therefore, we anticipate that very few arroyo toads (no more than 2 arroyo toads) will be killed or injured during capture and relocation efforts. In total, we expect no more than 37 arroyo toads will be killed during SRPL Project construction. This maximum estimate assumes 11 toads will be killed within permanent impact areas, 24 will be killed in temporary impact areas, and 2 will be killed or injured during capture and relocation efforts.

Since there will be no loss of occupied breeding habitat and most of the impact to upland aestivation habitat will be temporary, we do not anticipate any loss in reproduction as a result in construction activities and only a small loss (i.e., 37) in the number of individual arroyo toads in the action area. With this level of impact, arroyo toad abundance and distribution in the action area should not be significantly affected, and arroyo toad populations identified within the action area are expected to remain viable following construction of the SRPL Project.

2. Operations and Maintenance Activities

Because arroyo toads are difficult to detect, especially in upland habitat, and they may expand or shift their ranges over the life of the SRPL Project, we assessed potential O&M impacts to arroyo toads throughout the areas identified as suitable arroyo toad habitat. The total amount of land within the ROW and impact areas outside the ROW within the San Diego portion of the action area within the arroyo toad's range is 1,096 ha (2,708 ac). To assess potential impacts to arroyo toads within these areas, we determined that these impacts include 60.1 ha (148.4 ac) of arroyo toad habitat or 5.5 percent of the total impact area.

SDG&E estimates overall habitat impacts of 18 ha (45 ac) for standard O&M activities in the San Diego portion of the action area. Because arroyo toad habitat represents 5.5 percent of the total area potentially impacted by standard O&M activities, impacts to arroyo toads from these activities are reasonably expected to be 5.5 percent of the overall annual impact or up to 1.0 ha (2.5 ac) annually. Because these impacts will be spread across the alignment of the SRPL Project in primarily previously disturbed areas, it is unlikely that any individual arroyo toads will be injured or killed by these impacts. We do not expect any impacts within occupied breeding habitat since standard O&M activities will occur outside the breeding season for arroyo toads.

Based on the 202-ha (500-ac) project limit for vegetation clearing associated with transmission line-related fire prevention and management activities in the San Diego portion of the action area, we expect removal of up to 11.1 ha (27.5 ac) of arroyo toad habitat over the life of the SRPL Project. Similar to construction impacts, if any of these impacts are concentrated at sites 2 ha (5 ac) in size, translocation efforts would be initiated to minimize the number of individual arroyo toads killed. Under a scenario where the entire impact is concentrated at one or more site of at least 2 ha (5 ac) in size, we would expect the habitat to support between 13 and 20 arroyo toads, with between 7 and 15 of these toads captured and relocated. Under this scenario, we would expect between 5 and 7 arroyo toads to be killed as a result of fire prevention and management activities. If these impacts were not concentrated at sites of at least 2 ha (5 ac) but spread across the linear action area, it is less likely that individual toads would be killed by removing small areas of their habitat. However, since translocation efforts would not be initiated, in a worst case scenario, a maximum of 20 arroyo toads would be expected to be killed by fire prevention and management activities.

Finally, arroyo toad use of access roads constructed within suitable arroyo toad habitat could cause death or injury of arroyo toads if toads attempt to cross the roads during upland foraging and dispersal. Toads may use roads and trails as dispersal routes and may congregate on roads at night to feed (Service 1999). To minimize this impact, access road construction and use, with the exception of emergency situations, will occur during daylight hours (from 2 hours after sunrise to 2 hours before sunset) when amphibian movement is less frequent.

Similar to construction impacts, O&M activities overall are expected to result in only low level impacts to arroyo toads, and populations within the action are expected to remain viable.

Indirect Effects of Construction and Operations and Maintenance Activities

Indirect impacts to arroyo toad individuals and habitat could occur where construction and O&M activities occur near arroyo toad habitat. These activities could lead to a decrease in water quality in drainages adjacent to and crossed by the proposed SRPL Project. Decreased water quality could be especially detrimental to arroyo toads through direct mortality or decreases in reproduction success. Contaminants, such as herbicides, pesticides, and fertilizers may kill toads, affect development of larvae, or affect their food supplies or habitat (Service 1999). Siltation in arroyo toad breeding pools can asphyxiate eggs and newly hatched larvae (Sweet 1992). Furthermore, pollution can have both direct and indirect effects on arroyo toads and can

affect amphibians in areas far from where it originates (Service 1999). The proposed SRPL Project includes several construction BMPs (**G-CM-2**) to reduce the likelihood of decreased water quality, including erosion control measures such as silt fencing, sand bags, and straw matting. Implementation of these measures will reduce the potential construction impacts on water quality and associated indirect effects to arroyo toads.

Increased invasive flora and associated habitat degradation of arroyo toad upland habitat are expected as a result of the proposed SRPL Project. Seeds of invasive plant species could be transported through the project area on construction and maintenance vehicles. Invasive species are now recognized as a threat to biodiversity in native plant communities, second only to direct habitat loss and fragmentation (Pimm and Gilpin 1989, Scott and Wilcove 1998). Non-native, weedy species may out-compete and exclude native species, potentially altering the structure of the vegetation, degrading or eliminating upland habitat used by the arroyo toad, and providing food and cover for undesirable non-native animals (Bossard et al. 2000). Implementation of the Weed Control Plan (**G-CM-20**) by SDG&E is anticipated to minimize effects associated with increased introduction of non-native plants.

The proposed SRPL Project could lead to occasional fires due to arcing of the power lines. Increased fire frequency could result in increased sedimentation in adjacent creeks for the first few years following a fire, which could, in turn, temporarily reduce arroyo toad reproduction. Larger erosion events following fires may alter stream morphology, which can reduce the number and size of pools (Service 1999). Fires could kill toads in the upland environment that are above-ground at the time of the fire or, if the fire is hot enough, could kill some of the aestivating toads as well. However, arroyo toads are not dependent on a mature vegetation community in the riparian or upland environment, so fire-related effects of the proposed SRPL Project are not anticipated to permanently degrade the suitability of the habitat for toad unless there is large-scale type conversion of upland habitat into non-native grassland, which can reduce cover and prey availability for migrating toads. To prevent such conversion, SDG&E, in accordance with **G-CM-18**, will re-seed disturbed areas after a transmission line-caused fire.

Effect on Critical Habitat

Proposed arroyo toad critical habitat within the action area includes 162 ha (399 ac) as follows: 83 ha (204.ac) in Unit 17, 32 ha (80 ac) in Unit 18, and 47 ha (115 ac) in Unit 19. The SRPL Project will impact 19.0 ha (46.7 ac) of arroyo toad proposed critical habitat including the primary constituent elements described as “adjacent upland habitats that allow for movement to breeding pools, foraging areas, overwintering sites, upstream and downstream dispersal, and recolonization of areas that contain suitable habitat” (74 FR 52612). However, the permanent loss of this habitat and these primary constituent elements will be limited to only 1.0 ha (2.5 ac) because within the remaining 18.0 ha (44.2 ac) of the temporarily impacted proposed critical habitat areas, the primary constituent elements will be restored. Moreover, both permanent and temporary impacts will be spread between three proposed critical habitat units, representing less than one percent of each critical habitat unit as follows:

- Unit 17, 16.0 of 1,725 ha or 39.6 of 4,263 ac;
- Unit 18, 0.2 of 1,936 ha or 0.6 of 4,783 ac; and
- Unit 19, 2.8 of 5,817 ha or 6.5 of 14,375 ac.

The ROW and impact areas outside of the ROW in the San Diego County portion of the action area include 17.2 ha (42.6 ac) of proposed arroyo toad critical habitat, which is 1.6 percent of the total amount of land within these impact areas [1,096 ha (2,708 ac)]. Thus, impacts to proposed critical habitat from standard O&M activities are reasonably expected to be no more than 1.6 percent of the overall 18-ha (45-ac) annual impact or 0.3 ha (0.7 ac) annually. Likewise, vegetation clearing to prevent or manage potential transmission line-related fires [202 ha (500 ac)] may impact up to 3.2 ha (8.0 ac) of proposed arroyo toad critical habitat over the life of the SRPL Project.

The biological function of proposed arroyo toad critical habitat Unit 17, Unit 18, and Unit 19 (identified as breeding, feeding and sheltering with potential for population expansion in 74 FR 52612) is expected to be maintained during and after SRPL Project construction because of the restoration of temporary impacts and the relatively small and dispersed impacts expected during construction and O&M activities.

Conservation Actions and Effect on Recovery

In addition to the onsite restoration of temporary impacts at a 1:1 ratio as discussed above, SDG&E committed to offset construction impacts to arroyo toad modeled habitat at a 2:1 ratio through offsite acquisition of similar habitat at a minimum 2:1 ratio for permanent and 1:1 ratio for temporary impacts. Impacts to proposed arroyo toad critical habitat would be offset at a minimum 3:1 ratio for permanent impacts and 2:1 ratio for temporary impacts. In addition, SDG&E committed to offset permanent and temporary impacts associated with O&M activities at similar ratios. The precise acreage of permanent impacts associated with O&M was not identified in the 2009 biological and conference opinion, but these impacts were expected to be minor. These commitments were memorialized in **SS-CM-11** and **G-CM-45** of the 2009 biological and conference opinion for impacts to arroyo toad habitat. For arroyo toad proposed critical habitat, which was not proposed prior to issuance of the 2009 opinion, land acquisition commitments were memorialized in the Supplemental Assessment.

Based on these ratios and the reduced impacts of the modified SRPL Project, a minimum of 46 ha (114 ac) of arroyo toad habitat and at least 39 ha (96 ac) of proposed arroyo toad critical habitat would be expected to be acquired for conservation to offset construction impacts. Based on the impacts identified for O&M activities, new permanent impacts would be offset at a 3:1 ratio, which would likely include only those impacts associated with transmission line-related fire prevention and management activities. SDG&E would be expected to offset O&M impacts by conserving up to an additional 22 ha (55 ac) of arroyo toad habitat and 10 ha (24 ac) of proposed critical habitat for fire prevention and management activities. Thus, conservation expected by SDG&E to offset construction and O&M impacts to arroyo and its proposed critical habitat over the life of the SRPL Project would be 68 ha (169 ac) of arroyo toad habitat and 49

ha (120 ac) of proposed critical habitat or 117 ha (289 ac) of arroyo toad habitat in total (Table 5).

To fulfill their commitment to offset both construction and long-term O&M impacts to arroyo toad, SDG&E, with concurrence from the Wildlife Agencies, has acquired and provided for the management of arroyo toad occupied habitat at the Long Potrero and Nabi sites as described in the HAP (**SS-CM-17**). We estimate that the Nabi site has 38 ha (95 ac) of arroyo toad habitat, and the site is known to be occupied according to the CFWO GIS database. The Long Potrero site has 101 ha (741 ac) of proposed arroyo toad critical habitat, all of which we consider as suitable habitat. In total, SDG&E will conserve 338 ha (836 ac) of arroyo toad habitat. These sites will be managed in perpetuity for the conservation of arroyo toad through a non-wasting endowment provided by SDG&E.

Because impacts to arroyo toad and its proposed critical habitat from both construction and anticipated O&M activities are spread throughout the alignment, conservation of these sites does not directly offset impacts to individual arroyo toads that will be affected by the SRPL Project. However, impacts have been minimized to the point that we believe any occurrence of arroyo toads will experience only small, mostly temporary, impacts. Construction of the SRPL Project is expected to result in only short-term impacts to arroyo toads in the action area, and impacts from O&M activities are expected to be similarly minor. The loss of a small percentage of the primary constituent elements within proposed arroyo toad critical habitat will not significantly affect the ability of the overall proposed designation to support populations of arroyo toads within the action area or rangewide.

In summary, we believe the conservation and long-term management of this replacement habitat will effectively offset the anticipated adverse effects to arroyo toad habitat, proposed arroyo toad critical habitat, and the associated loss of arroyo toad individuals from the SRPL Project's construction and O&M activities. Conservation of the Long Potrero property will specifically contribute to recovery within the Southern Recovery Unit: Subregion 7: Tijuana River-Cottonwood Creek Basin, and conservation of the Nabi property will specifically contribute to recovery within the Southern Recovery Unit: Subregion 7: San Diego River Basin.

Conclusion

After reviewing the current status of the arroyo toad, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological and conference opinion that construction and O&M of the SRPL Project is not likely to jeopardize the continued existence of the arroyo toad or to adversely modify its proposed critical habitat. We based this conclusion on the following:

- 1) No known occupied breeding arroyo toad breeding habitat will be permanently or temporarily impacted;

- 2) SDG&E has significantly reduced construction impacts such that the modified SRPL Project will impact only 40 ha (99 ac) or 10 percent of the 413.9 ha (1,023.0 ac) of arroyo toad habitat in the action area; arroyo toad habitat within the action area represents only a small fraction of the arroyo toad habitat throughout the species range;
- 3) Most of the construction impacts to arroyo toad habitat will be temporary [34 ha (84 ac) of the total 40 ha (99 ac) of impacts or 80 percent], and these areas will be restored following construction in accordance with clear success criteria to ensure the areas will regain ecological function;
- 4) Impacts to arroyo toad from standard O&M activities are expected to include no more than 1.0 ha (2.5 ac) annually, and O&M impacts to address fire prevention and management along the transmission line are expected to impact no more than 11.1 ha (27.5 ac) over the life of the SRPL Project; O&M impacts will occur across the linear action area, which will minimize impacts to any specific arroyo toad population;
- 5) Indirect impacts to arroyo toad during construction and O&M activities will be avoided and minimized through the implementation of General and Specific Conservation Measures;
- 6) Permanent loss of primary constituent elements of arroyo toad proposed critical habitat from construction and O&M activities are relatively minor and will not alter the ecological function of critical habitat units 17, 18, or 19 or the overall proposed critical habitat for arroyo toad in supporting the breeding, feeding, and sheltering needs of the species;
- 7) Arroyo toad surveys in the action area as a result of the SRPL Project have contributed to our knowledge of the species as a whole and the long-term protection and management of 338 ha (836 ac) of arroyo toad habitat at the Long Potrero and Nabi sites, including 101 ha (741 ac) of proposed arroyo toad critical habitat at Long Potrero, represents a significant contribution to sustaining arroyo toads in the Southern Recovery Unit: Subregion 7 and meeting the overall conservation needs (recovery) of the species.

Peninsular Bighorn Sheep (*Ovis canadensis nelsoni*)

Status of the Species

The information included within the 2009 biological and conference opinion for the SRPL Project on PBS biology, ecology, range-wide status and distribution, population trends, and threats and conservation needs are hereby incorporated by reference. Additional information can be found in the *Recovery Plan for Bighorn sheep in the Peninsular Ranges, California* (“PBS recovery plan”) (Service 2000) at http://ecos.fws.gov/docs/recovery_plan/001025.pdf.

Listing Status

Desert bighorn sheep within the Peninsular Mountain Ranges of the United States were federally listed as an endangered distinct population segment on March 18, 1998 (63 FR 13134). A recovery plan was approved in October 2000, and 341,918 ha (844,897 ac) of critical habitat were designated on February 1, 2001 (66 FR 8649). The decision to list the PBS was made because of declining population numbers and the continuing loss, degradation, and fragmentation of habitat throughout a significant portion of the population's range. Due to human developments, the population segment had become isolated from other populations of desert bighorn sheep. In addition, periods of depressed recruitment, likely associated with disease, and high predation, coincided with low population numbers endangering the continued existence of these animals in southern California. The California Fish and Game Commission listed bighorn sheep inhabiting the Peninsular Ranges as "rare" in 1971. In 1984, the designation was changed to "threatened" by the CDFG to conform to the terminology in the amended California Endangered Species Act.

On March 7, 2005, the Agua Caliente Band of Cahuilla Indians filed a complaint against the Service's economic analysis of designated critical habitat. Other parties subsequently intervened as plaintiffs in the case. On July 31, 2006, a court-approved consent decree resulted in the partial vacature of critical habitat designation on Tribal lands and remanded the critical habitat designation back to the Service for a new rulemaking. A revised critical habitat designation of approximately 155,565 ha (384,410 ac) was proposed on October 10, 2007. After considering the content of public comments and hearings, approximately 152,542 hectares (376,938 acres) of critical habitat were designated on April 14, 2009 (74 FR 17288).

The primary constituent elements of PBS designated critical habitat are: 1) moderate to steep, open slopes (20 to 60 percent) and canyons, with canopy cover of 30 percent or less (below 1,402 m (4,600 ft) elevation in the Peninsular Ranges) that provide space for sheltering, predator detection, rearing of young, foraging and watering, mating, and movement within and between ewe groups; 2) presence of a variety of forage plants, indicated by the presence of shrubs (e.g., *Ambrosia* spp., *Caesalpinia* spp., *Hyptis* spp., *Sphaeralcea* spp., *Simmondsia* spp.), that provide a primary food source year round, grasses (e.g., *Aristida* spp., *Bromus* spp.) and cacti (e.g., *Opuntia* spp.) that provide a source of forage in the fall, and forbs (e.g. *Plantago* spp., *Ditaxis* spp.) that provide a source of forage in the spring; 3) steep, rugged slopes (60 percent slope or greater) [below 1,402 m (4,600 ft) elevation in the Peninsular Ranges] that provide secluded space for lambing as well as terrain for predator evasion; 4) alluvial fans, washes, and valley bottoms that provide important foraging areas where nutritious and digestible plants can be more readily found during times of drought and lactation and that provide and maintain habitat connectivity by serving as travel routes between and within ewe groups, adjacent mountain ranges, and important resource areas, such as foraging areas and escape terrain; and 5) intermittent and permanent water sources that are available during extended dry periods and that provide relatively nutritious plants and drinking water.

Environmental Baseline

The information provided within the *Environmental Baseline* in the 2009 biological and conference opinion for the SRPL Project specific to PBS is hereby incorporated by reference. The following updated information concerning PBS in the action area is summarized or excerpted from the Pre-Construction Consultation Report provided by SDG&E and is based on 2009 surveys for PBS.

Where the SRPL crosses the Jacumba Mountains, it passes through occupied PBS habitat. SDG&E conducted surveys in 2009 to gather data on the movement of bighorn sheep in the area of construction. Fifty ground-based surveys were conducted between January 9, 2009, and January 8, 2010 (Davenport 2009a, 2009b, 2009c, and 2010a). These surveys included perimeter surveys, surveys associated with proposed pad sites, and two surveys of the interior of the I-8 Island, an area of about 1,214 ha (3,000 ac) located on the Mountains Springs Grade where the east and westbound lanes of I-8 are separated from each other by as much as 2.4 km (1.5 mi) (Supplemental Assessment; Service 2009a) (Figure 6).

Distribution

Peninsular bighorn sheep were observed occupying habitat within the SRPL Project area during all survey events. Occupied habitat included the I-8 Island, as well as adjacent habitat. Based on their presence within the I-8 Island during all survey events, this area is occupied during all months of the year. However, PBS use of various areas within the I-8 Island appears to shift seasonally. Rainfall patterns likely affect their use of habitat both temporally and spatially and the pattern of use is likely to shift between years. Based on the completion of two surveys of the interior of the I-8 Island and the observation of sign (i.e., scat, tracks), PBS use large areas of the island.

Behavior

During the collection of data in the project area over the past year, breeding behavior was observed in July and August, which is consistent with the published literature. However, two rams were observed closely following a ewe on December 21, 2009. In addition, another ram was observed closely following another ewe on January 17, 2009. Whether or not mating occurred during the winter months could not be determined. Breeding behavior was observed both within and adjacent to the I-8 Island.

Based on the location of ewes with lambs, several ewes may be lambing within the I-8 Island. The ewes with lambs were initially observed in January of 2009 and were located in the northern third of the I-8 Island. An additional ewe with a lamb was observed in this same area but on the south side of I-8.

During the past year, and consistent with the published literature, most of the animals were observed near a perennial spring during July and August. However, a ram and a ewe were

observed within the I-8 Island and approximately 8 km (5 mi) from the perennial water source in August. PBS observations at this more distant location may indicate the presence of an alternate water source. Their presence also suggests the continual use of the I-8 Island during the summer, albeit at an apparently reduced level.

Regarding the sensitivity of bighorn sheep to disturbance, the animals within and adjacent to the I-8 Island may receive higher rates of disturbance than most other groups of PBS. The source of this disturbance is the large number of migrants from Mexico that move through this area and the associated activities of the Immigration and Naturalization Service (INS). Although the number of migrants is unknown, clothing and water bottles, as well as their tracks were observed on a regular basis. In response to illegal migrants, INS dispatches teams of officers that enter habitat located both within and adjacent to the I-8 Island. In addition, helicopters are used on a regular basis in support of the teams on the ground.

In the Jacumba Mountains, PBS have been observed foraging within 20.0 m (65.6 ft) of I-8. Thus, it appears that these animals have become somewhat habituated to the continual presence of vehicles along this highway. However, those animals would likely move away from vehicle activity that deviated from the norm and was not restricted to the highway.

Population Size

Twenty individual PBS have been observed in this area over the past year. Determining the actual size of the PBS population in this area is difficult given the cryptic coloration and behavior of the animal. During the 47 days of perimeter surveys completed in 2009, PBS were observed on 26 of those days. Thus, at least one bighorn sheep was observed on approximately 55 percent of the survey days. The initial detection rate of these groups of bighorn sheep is actually lower, in that areas of previous observations were re-visited during these surveys. Additionally, the detection rate of smaller groups and lone individuals is likely significantly lower. The reason for the low detection rate is likely due to the cryptic coloration of the sheep as well as the complex structure of the habitat. Regarding the habitat, it is impossible to see the entire interior of the I-8 Island from its perimeter or interior roads. Thus, there are numerous areas where PBS could go unseen when present.

Based on the presence of distinguishing marks (e.g., scars, horn shape and length) and high-resolution digital photographs, the unique characteristics of individual PBS were recorded and the identification of individual sheep made possible. The identification of unique animals was simplified in December 2009, through the tagging and collaring of PBS in this area by CDFG. To date, eight uniquely collared/tagged PBS ewes have been observed.

Based on the observations of the same individual animals within and adjacent to the I-8 Island, all of the PBS observed appear to belong to one group of animals. However, based on the general locations of observations, there appears to be two, possibly three, subgroups of ewes. Given the size and quality of the habitat located south of the I-8 Island, an additional group or groups of bighorn sheep may occur in that area. Based on the observations of PBS during the

last year, most of the I-8 Island is used by the local population of this species. The use of adjacent habitat by this species is largely unknown.

Critical Habitat

Background information characterizing critical habitat in the I-8 Island and Coyote Mountains area from the 2009 biological and conference is hereby incorporated by reference. All of the designated critical habitat for PBS in the action area falls within critical habitat Unit 3. Unit 3 consists of 32,059 ha (79,220 ac) in the Carrizo Canyon area of San Diego and Imperial counties and functions to provide for sheltering, lambing, mating, movement among and between ewe groups and predator evasion (74 FR 17288). Final revised critical habitat in the action area includes 3,131.4 ha (7,737.8 ac), most of which is in the I-8 Island, but a fragment is encompassed within the Coyote Mountains portion of the greater action area (Figure 6).

Effects of the Action

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger 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, are later in time, and still reasonably certain to occur.

This biological and conference opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 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 SRPL Project on PBS critical habitat.

For the purposes of this biological and conference opinion, we addressed impacts to PBS occupied habitat, including designated critical habitat, in the action area. Occupied PBS habitat in the action area, including designated critical habitat, occurs primarily in the I-8 Island and Coyote Mountains area. Our analysis includes an assessment of the potential effects of the modified (i.e., impact-reduced) SRPL Project on PBS occupied and designated critical habitat during construction and as a result of long-term O&M activities.

Following issuance of the 2009 biological and conference opinion, we expected SDG&E to conduct additional protocol surveys and to make project modifications to reduce impacts, where feasible, and they have complied with conservation measures specific to these goals. In addition, revised final critical habitat has been designated. The modified project has reduced permanent and temporary construction impacts to PBS occupied habitat, which includes designated critical habitat. In addition, the impacts expected as a result of O&M activities have been better defined.

The modified SRPL Project will impact 12.4 (30.6 ac) of occupied PBS habitat, including 4.2 ha (10.4 ac) of permanent and 8.2 ha (20.2 ac) of temporary impacts. The project will impact 2.7 ha (6.8 ac) of designated PBS critical habitat, including 2.2 ha (5.4 ac) of permanent and 0.57 ha (1.40 ac) of temporary impacts. The impacts to designated critical habitat are all within the I-8 Island area and overlap with the impacts expected for occupied PBS habitat (Figure 6).

In addition, SDG&E will impact up to 6 ha (15 ac) of habitat annually for standard O&M activities within the Imperial County portion of the action area within PBS's range. Based on the amount of PBS habitat in areas potentially impacted by standard O&M activities within and outside the ROW, we anticipate up to 2.2 ha (5.5 ac) within PBS habitat for standard O&M activities. Fire prevention and management activities are not likely to require removal of habitat within open desert communities so these activities will occur only in San Diego County; thus, no loss of PBS habitat, including designated critical habitat, is anticipated for O&M activities related to fire prevention and management.

As discussed in the 2009 biological and conference opinion, the effects of the action not only depend upon the specific design elements of the project, but also the behavioral responses of PBS to the action. The behavioral response of PBS to the SRPL Project can be categorized by their response to construction phase of the project, followed by their response to the actual structures and their continued operation and maintenance. PBS are large wide-ranging mammals living in a harsh desert environment. Compared to some species, bighorns require large areas to find the resources required to maintain themselves. In addition, they have specialized habitat requirements for predator evasion and for coping with the extremes of their desert environment. Conservation of expansive areas of intact habitat and specific key resources are required for PBS to persist. The degree to which habitat and life history requirements of PBS may be adversely affected by human activities depends upon the direct and indirect effects of a proposed action.

General Conservation Measures **G-CM-16**, **G-CM-17**, **G-CM-20**, and **G-CM-22** and Species-Specific Conservation Measures **SS-CM-16** –**SS-CM-19** are particularly relevant to SDG&E's commitment to avoid, minimize, and offset adverse effects to PBS.

Species-Specific Conservation Measures **SS-CM-16** –**SS-CM-19** are repeated here for ease of reference.

SS-CM-16: Construction activities and O&M activities (including the use of helicopters) in suitable PBS habitat will be prohibited during the lambing season (January 1 through June 30). Construction activities may occur from July 1 through December 31 so long as the provisions and recommendations of the *Peninsular Bighorn Sheep Construction Monitoring Plan* are adhered to (Appendix 5). Suitable PBS habitat will be defined as the area delineated as essential in the PBS recovery plan (Service 2000). Exceptions to **SS-CM-16** may be approved by the Wildlife Agencies.

SS-CM-17: Temporary impacts to suitable bighorn sheep habitat will include 1:1 onsite restoration. Restoration involves re-contouring the land; replacing topsoil (where topsoil

collection is appropriate); hand seeding, where appropriate; and salvaging and scattering segments of cholla (*Cylindropuntia* spp.) across impact areas.

SS-CM-18: A Project Biologist(s) will be retained by SDG&E to collect data on PBS movements in the area during the construction phase, supervise and train assisting biologists, and work with representatives of SDG&E to lessen the impacts of project construction on PBS. The Project Biologist(s) and SDG&E will adhere to the provisions and recommendations of the PBS Monitoring Plan. In general, helicopters will follow regular flight corridors coinciding with the ROW to the maximum extent possible and avoid low-flying "short-cuts" or sight-seeing trips away from the project site. Helicopters will avoid flying within 0.6 mi (1.0 km) of PBS water sources. Helicopter landing areas, vehicle parking sites, and fly yards will be sited at least 0.6 mi (1.0 km) from PBS water sources and other key resource areas identified by Project Biologist. When PBS are detected within the I-8 Island, construction operations will cease until PBS leave the area and/or the Project Biologist determines work may proceed as outlined in the PBS Monitoring Plan.

SS-CM-19: To help reconnect desert bighorn sheep subpopulations and at least partially offset impacts to the overall population caused by the SRPL Project, SDG&E will:

- Complete the purchase of 2,331 ha (5,760 ac) of land identified as the Desert Cahuilla Property in the HAP. As explained in Table DC-1 of the HAP, this purchase will result in adding approximately 2,214 (5,471 ac) of suitable PBS habitat to the Anza-Borrego Desert State Park. The habitat purchased and added to Anza-Borrego Desert State Park will promote habitat connectivity and be managed consistent with the continued survival and recovery of PBS. As described in the HAP, SDG&E will provide approximately \$4.5 million for future management of the lands acquired by the Anza-Borrego Desert State Park in addition to the funds required for initial acquisition.
- Fund, design, construct, and provide for maintenance of a system of warning devices, signs, and fences to reduce the probability of PBS deaths due to vehicle collisions while crossing I-8. Fencing, signage, and warning devices will be designed in consultation with Caltrans and the Wildlife Agencies to facilitate PBS movement through/across the island using structures currently present, such as the bridges spanning Devil's Canyon and the culverts/low bridge along eastbound I-8. A feasibility study and proposed course of action will be completed before the transmission line is energized, and systems and structures will be operational within 5 years of the date the line is energized.
- Fund removal of tamarisk, fountain grass, other invasive species, and hazardous fences for the life of the SRPL Project in the action area and install and maintain water sources per direction and at locations specified by the Wildlife Agencies for the life of the SRPL Project.
- Fund a minimum 10-year-long program to monitor the effects of the SRPL Project on PBS behavior, movements, and dispersal in the area from Carrizo Gorge south to the international

boundary and also including lands acquired by Anza-Borrego Desert State Park as a result of the SRPL Project, as described above. Ten years is needed to measure the influence of the SRPL Project while factoring in rainfall cycles, vegetative productivity, and drought. This program will be designed and implemented by the Wildlife Agencies and will include time periods prior to, during, and following construction. Funding for the project will, total \$1.5 million dollars. SDG&E will provide funding to a third party designated by the Wildlife Agencies.

- SDG&E will provide sufficient funds to a third party designated by the Wildlife Agencies, to ensure five complete biennial aerial surveys from Carrizo Gorge to the international boundary, for the 10-year period beginning with the scheduled 2010 aerial survey conducted by CDFG.
- SDG&E will ensure water used for operation and maintenance purposes will not be obtained from water sources used by PBS.

Direct Effects of Construction and Operations and Maintenance Activities

1. Construction Activities

The modified SRPL Project will impact 12.4 ha (30.6 ac) of occupied PBS habitat, including 4.2 ha (10.4 ac) of permanent and 8.2 ha (20.2 ac) of temporary impacts. Permanent loss of habitat includes replacement of natural features by actual permanent structures, such as the tower foundations. However, the natural desert landscape between tower sites should not be substantially altered, and PBS are expected to eventually regain use of resources occurring between tower sites. Temporary habitat disturbances result from activities that are necessary for building the transmission line, but are not required beyond the construction phase. Temporarily impacted sites will be restored in accordance with the **SS-CM-17** and the Habitat Restoration Plan.

The PBS habitat permanently and temporarily impacted in the I-8 Island and Coyote Mountains area consists of scattered, relatively small pieces when considering the habitat requirements of the PBS. Therefore, the amount of resources lost to PBS from construction of the SRPL Project, permanent and temporary, are not expected to impair breeding or feeding behaviors of PBS.

Rather, it is the behavioral avoidance of habitat within the overall action area that is of greater concern, especially since PBS have regained use of the I-8 Island. The I-8 Island is important because it is part of the Devil's Canyon and In-Ko-Pah Gorge area thought to contain a self-sustaining and distinct subpopulation of bighorn sheep prior to construction of the I-8 (Cunningham 1982). Assuming 1996 (Torres et al. 1994, 1996) as the date of extirpation of PBS from the I-8 Island, it has taken over a decade for this re-emergence or re-colonization to occur, and PBS have apparently increased in numbers in the vicinity given the results of 2006 and 2008 aerial helicopter censuses (Service GIS database, CDFG 2006 and 2008 aerial censuses,

unpublished data) and recent ground and fixed-wing aerial monitoring efforts conducted by CDFG (R. Botta, CDFG, pers. comm. 2010) and Davenport (2010b).

Likewise for over a decade, I-8 seemed to function as an impassable barrier to bighorn sheep movement, which permanently cut-off bighorns in the U. S. from sheep living south of the interstate. However, bighorns appear to be crossing both east and west-bound lanes of I-8. Bighorn sheep largely acquire their movement patterns by following the traditions of previous generations, and this trait tends to make them slow to find and use vacant habitat (Geist 1971). Therefore, when sheep re-occupy available habitat and regain movement patterns, it represents a significant event in population recovery and persistence.

The construction phase of the SRPL Project may reverse the range expansion exhibited by PBS in the area. The intense period of human activity and frequent helicopter flights necessary for SRPL Project construction may cause bighorn sheep to avoid using the area during and for an unknown period following construction. As a consequence, the I-8 corridor may once again be perceived as a barrier to sheep movement or as an area underused by bighorn sheep.

Should such a scenario be realized, it could take many years for bighorn to regain use of the I-8 Island and re-establish movement across the I-8 corridor. Bighorn sheep have been observed to alter their spatial distribution and activity patterns when construction projects have occurred in or near their home ranges. For example, the number of point locations obtained from three radio-collared ewes in an area of the Little Harquahala Mountains in Arizona declined from 24 percent to 1 percent after a road leading to a gravel mine was constructed and truck traffic increased substantially (Krausman and Leopold 1986, Krausman et al. 1989, Etchberger and Krausman 1999). Ewes were slow to regain use of the area once truck traffic decreased. Bighorn sheep shifted their use of a water source near Parker, Arizona, following start of a construction project. Sheep visitation to the water source declined and bighorns altered the timing of visits to avoid working hours (Campbell and Remington 1981). Similarly, bighorn ewes in the River Mountains of Nevada shifted to alternative water sources, and in some cases altered their home range in response to construction of a water project (Leslie and Douglas 1980).

As indicated above, construction of the SRPL Project through the I-8 Island area will require the use of helicopters, and PBS may respond dramatically to helicopter flights by changing their spatial distribution (Bleich et al. 1990, 1994) or reducing foraging efficiency (Stockwell et al. 1991). Helicopter disturbance may cause animals to depart higher quality habitat, and if such displacements continue for an extended period of time, PBS may be adversely affected from a nutritional standpoint. In addition, lower quality habitat may lack adequate escape terrain, or the juxtaposition of resources may be less than optimal, thus increasing vulnerability to predation (Bleich et al. 1994). As mentioned previously, a number of other authors have documented behavioral responses, such as flight and elevated heart rates, when bighorn sheep have perceived humans, their pets, or machinery as threats. Therefore, it is reasonable to conclude that the construction phase of the SRPL Project may alter bighorn sheep use of the area. Bighorn sheep will likely avoid using the general area while multiple helicopter flights are occurring and workers are regularly present on the ground.

The reaction of bighorn sheep to human activities is variable, and some subpopulations are more tolerant than others of human activities. In some cases the tolerance reaches a level frequently termed "habituation". However, only a portion of the population may display this type of behavior (Papouchis et al. 2001). Generally, these situations are characterized by human activity that is predictable in location and action, and non-threatening. Often there is an attractant, such as a water source, mineral lick, or irrigated lawn that draws bighorn sheep to an area where they learn to tolerate humans at closer distances. The context of the "habituation" is important, and in a different context the same animals may react differently to people.

PBS have re-claimed use of the I-8 Island while the area was experiencing relatively high levels of human activity. Obviously, vehicular traffic on the interstate is virtually continuous, and Devil's Canyon has received both legal and illegal OHV use. Other recreationists use the I-8 Island for camping and hiking, and there is a relatively high number of migrants moving north from Mexico, who pass through the Island and surrounding area. As a consequence, the U.S. Border Patrol conducts frequent missions on foot and with vehicles and helicopters. Military aircraft also occasionally use the airspace over the SRPL Project area during training missions. Helicopters are used by CDFG to census and to capture PBS in the area for research and monitoring purposes, and such operations may leave the individuals that encountered helicopters sensitive to rotary aircraft (Bleich et al. 1990, 1994). However, PBS interactions with CDFG helicopters are brief and only occur for a few minutes each year.

The nature, as well as the number of interactions with humans, is an important factor determining the behavioral response of bighorns to human activity. Bighorns in Utah with a negative history of human contact fled more often and farther than a group that had not experienced the same history (King and Workman 1986). The construction phase of the SRPL Project will add to the already high levels of human activity in the project area. The interactions associated with construction will most likely differ from current interactions with humans by being longer in duration, and due to the expected high numbers of low-elevation helicopter flights, possibly more threatening. The apparent increasing use of the SRPL Project area by PBS suggests that encounters with humans are currently not particularly alarming to bighorns. Such encounters probably occur frequently, are brief, and usually conclude without threatening bighorn. PBS currently using the area do not appear to have a particularly negative or traumatic history with human beings. Consequently, a displacement of PBS from the SRPL Project area would probably be temporary.

Construction activities will be prohibited during the lambing season (**SS-CM-16**), which coincides with the time period when ewes are most sensitive to human activities occurring within their home range and the time period that ewes heavily use the I-8 Island. This conservation measure restricts the construction window for SDG&E and complicates work scheduling, but it effectively removes what could be considered the greatest construction-related adverse effect to sheep in the area.

The SRPL Project includes a relatively intense level of bio-monitoring (**G-CM-1** and **SS-CM-18**). The specific details of the PBS Monitoring Plan are integral to the SRPL Project. In brief,

the PBS Monitoring Plan requires a Project Biologist to survey at least 48 hours in advance of planned work activity. If PBS are detected in the planned work area, the Project Biologist will have the authority to alter planned work activities to prevent adverse impacts to PBS.

The PBS Monitoring Plan also provides mandatory guidance pertaining to the use of helicopters in sheep habitat. Helicopters will follow regular, predictable flight paths coinciding with the SRPL Project ROW to the maximum extent possible, maintain a minimum altitude of 457 m (1,500 ft) unless inserting or extracting crews and materials. Project Biologists will have the authority to alter flight paths and elevations and the location of landing sites to reduce impacts to PBS.

The large investment in bio-monitoring should greatly reduce the probability that PBS will be adversely affected by construction activities. Basically, when detected, efforts to protect PBS will take precedence over construction schedules. The level of bio-monitoring will enable expanding the annual construction period in bighorn sheep habitat to include July 1 through December 31. The work season was previously limited to October 1 through December 31, and the expanded work season will allow construction within bighorn sheep habitat to be completed in 1.5 years rather than 3 years.

The PBS Monitoring Plan also provides an optimum schedule for constructing individual towers within the I-8 Island, which is based upon observed seasonal changes in sheep distribution. PBS appear to use the interior of the Island more during the cooler, wetter months, and by scheduling construction of those towers for a time period when sheep center their activity elsewhere, the effects of the project can be substantially reduced. In addition, because not all the towers will be under construction simultaneously, PBS will be afforded refugia within the I-8 Island where they can avoid being in proximity to intense human activity.

Over time, sightings of bighorn sheep crossing the east bound lanes of I-8 have accumulated. Many of these sightings have occurred at specific crossing spots. SDG&E will fund, design, and construct a system of warning devices to alert motorists to PBS in proximity to the highway. Such devices should lower the number of PBS that are struck and injured by vehicles on I-8. Frequent vehicle-caused collisions may ultimately affect the population dynamics of large ungulates, and these devices should reduce the hazards associated with crossing the east-bound lanes of I-8, which appear to be more of a barrier to sheep movement compared to the west-bound lanes.

In summary, SDG&E is implementing significant measures to minimize the risk during construction that PBS will develop behavioral avoidance of the I-8 Island habitat. Nonetheless, if these measures are not successful, construction of the SRPL could, at least temporarily, change PBS distribution and use of the area. Specifically, PBS could avoid using the area or avoid crossing I-8 to use resources in the southern Jacumba Mountains. The loss of resources available to PBS as a result of this construction-related avoidance behavior is expected to be temporary and restricted to the one group of animals using the I-8 Island and not the additional group or groups of bighorn sheep south of the I-8 Island. Temporary loss of resources to this group of

PBS is not expected to result in injury or death of individual sheep. This temporary impact will affect a relatively small number (i.e., up to only about 20 individuals) of the desert bighorn sheep inhabiting the Peninsular Mountain Ranges of the U.S. and is not expected to appreciably reduce the overall numbers, reproduction, or distribution of this distinct population segment of desert bighorn sheep.

The Coyote Mountains represent one of the eastern-most limits of PBS habitat in the U. S., and bighorns seasonally migrate to Carrizo Gorge across S2 several miles north of the proposed ROW. Therefore, in the Coyote Mountains, the SRPL should not interfere with PBS movement patterns. However, a small area of habitat will be permanently converted to human uses, resulting in a minor loss of foraging opportunities. The loss of forage due to tower construction is minimal compared to the remaining available forage base in the Coyote Mountains, and this small habitat loss is not expected to impair breeding or feeding of PBS using the Coyote Mountains.

PBS that seasonally use the Coyote Mountains should not be as affected by the construction phase of the project compared to the I-8 Island group, if construction occurs during the hot season in this area. As mentioned above, a portion of this sub-group of sheep seasonally migrates to Carrizo Canyon, where there are dependable sources of water during the summer months. However, recent monitoring by CDFG has confirmed that some sheep are now spending the entire year in the Coyote Mountains (R. Botta, CDFG, pers. comm., 2010), even though there are no known sources of free-standing water in the area. During the cooler, wetter months of the year, which coincides with the lambing season, the group generally uses the higher elevations of the Coyote Mountains. During all seasons, bighorn sheep in the Coyote Mountains should find adequate areas distant from and higher than the project site, which runs along the lower elevations of the southeastern side of the Coyote Mountains (Figure 6). All construction activities in the Coyote Mountains will follow the PBS Construction Monitoring Plan, which requires careful monitoring and protection of bighorn sheep in the action area.

2. Operations and Maintenance

Once the SRPL Project is completed, PBS will encounter the new physical structure in their environment and its associated noises. The question remains as to whether sheep will avoid using the ROW or crossing under the line. Perhaps, the best predictor of the group's future behavior towards a completed SRPL is their present behavior towards the Southwest Powerlink, a 500kV transmission line currently existing in the I-8 Island. PBS continue to use the area, and they obviously must cross under it. Whether their use of the immediate area is reduced compared to earlier pre-construction periods is unknown. At several other locations in southwestern deserts, bighorn sheep cross under 500kV and 230kV transmission lines (Bleich et al. 1990, 1997; Epps et al. 2003; Jeager 1994); however, it is unknown if habitat use patterns have been altered as a direct result of transmission line construction in these areas.

The effects of constructing the Palo Verde to Devers 500 kV Transmission Line was studied in Arizona by closely monitoring the movement patterns of radio-collared bighorn ewes and rams

in Kofa National Wildlife Refuge (Smith et al. 1986). The authors spent considerable field time monitoring sheep before, during, and after construction of the line. Smith et al. (1986) did not detect differences in crossing rates between pre- and post-construction time periods for the Palo Verde – Devers transmission line. These findings also indicate that typical O&M activities do not necessarily prevent bighorn sheep from crossing beneath transmission lines. They focused their analysis on bighorns whose home ranges were originally in proximity to the transmission line ROW. There was no clear indication that construction or operation of the line caused bighorns to alter or abandon their home ranges.

Smith et al. (1986) documented many instances of bighorns crossing the ROW during and after construction. However, at more narrowly defined movement corridors, construction activities did appear to preclude ram crossings between the New Water and Kofa Mountains. This crossing area consisted of mainly open, rolling country, which is not considered escape terrain. Whereas at another crossing area in the Dome Rock Mountains, extensive escape terrain existed, and construction activities did not appear to inhibit ram crossings. The above example demonstrates the variable nature of bighorn sheep behavior and illustrates that individual animal and site-specific factors may interact to determine the ultimate responses to human activity.

The total amount of land within the ROW and impact areas outside the Row in the Imperial County portion of the action area within the PBS's ranges is 326 ha (806 ac). To assess potential impacts to PBS habitat from O&M activities, we determined that the ROW and impact sites outside the ROW include 120 ha (296.5 ac) of PBS habitat or 36.8 percent of the total amount of land within these areas.

Similar to construction, the small loss of annual resources (i.e., vegetation removal) associated with O&M activities is not expected to have a significant effect on the breeding, feeding, and sheltering needs of the PBS. Future use of helicopters for O&M activities has the potential to disturb bighorn sheep; however, helicopter use will occur outside the sheep lambing season unless approved by the Wildlife Agencies (**SS-CM-16**) to avoid impacts to PBS when they are most sensitive to disturbance.

Indirect Effects of Construction and Operations and Maintenance Activities

Indirect effects are caused by the proposed action, are later in time, and are reasonably certain to occur. Access roads constructed as part of the SRPL Project may facilitate entry to PBS habitat by unauthorized vehicles. Access road construction will occur in the Coyote Mountains area where OHV use is common. In the I-8 Island, construction and maintenance of the SRPL will use helicopters and no access roads will be constructed.

Effect on Critical Habitat

The route of the proposed Sunrise Powerlink crosses PBS critical habitat in the I-8 Island area (Figure 6). The construction of the Powerlink will require temporary and permanent losses of forage plants (PCE 2) within designated critical habitat (74 FR 17288). These temporary habitat

losses will result from construction of staging areas, pull sites, and fly yards (helicopter landing areas) that will not be needed for operation and maintenance once the SRPL Project is completed. It is expected that 0.6 ha (1.4 ac) of designated critical habitat will be temporarily disturbed. The foundations for the lattice towers (i.e., pads or structure sites), permanent access and spur roads, helicopter pads, and pull sites will result in the direct loss of 2.2 ha (5.4 ac) of foraging habitat for PBS within designated critical habitat.

PBS will lose foraging opportunities (PCE 2) and other resources that may exist on these areas, such as potential bedding sites (PCE's 1, 3, and 4). The permanent loss of 2.2 ha (5.4 ac), distributed across the area in small patches [typically a 30.5 by 30.5 m (100.0 by 100.0 ft) pad, adjoined by a 10.7 by 22.9 m (35.0 by 75.0 ft) pad and 6 by 6 m (20 by 20 ft)] helicopter pad for each lattice tower] should not substantially reduce foraging opportunities or the availability and quality of other resources for PBS, because the number of individual resources lost or degraded will be minimal compared to the amount remaining in the action area. Additionally, due to land ownership patterns, the threat of future permanent and significant losses to available PCEs in the surrounding area is small. Nearby, large areas of PBS are protected by State and Federal wilderness, the Anza-Borrego Desert State Park, and other Federal lands where the habitat requirements of PBS are considered in the land-use planning process.

To minimize impacts to PBS critical habitat, SDG&E will restore native desert plant communities on all sites that are temporarily disturbed. Restoration involves re-contouring the land, replacing topsoil (where collected), planting seed and/or container stock, and maintaining (i.e., weeding, replacement planting, supplemental watering, etc.) and monitoring the restored area for a period of 5 years. Consequently, PBS should eventually regain foraging opportunities (PCE 2) on temporarily disturbed areas. In addition, SDG&E will develop and implement a Weed Control Plan to limit impacts of non-native plant invasion associated with project construction and O&M activities (**G-CM-20**).

The proposed SRPL Project should not directly alter water sources (PCE 5) used by PBS. However, bighorn sheep may avoid using a water source in response to nearby construction activity, or they may change their timing of water use (Campbell and Remington 1981). The developed water source near Mountain Springs, the only confirmed year-round water source in the area, is located greater than 1.8 km (1.2 mi) from the nearest tower site, landing zone, or parking area. Additionally, the surrounding rugged topography should provide security to PBS and facilitate their use of the water source. Other more ephemeral water sources may become available to bighorn sheep following rain events. When surface water is present at ephemeral water sources, a 1.0 km (0.6 mi) no-fly buffer and 152 m (500 ft) ground-work buffer will be implemented in accordance with the PBS Monitoring Plan (Appendix 5). Furthermore, **SS-CM-19** stipulates that the project proponent will maintain water sources per direction and at locations specified by the Wildlife Agencies for the life of the SRPL Project. These measures should ensure that PBS have access to water (PCE 5) in the action area during and after the construction of the SRPL.

In summary, these impacts to PBS critical habitat will have only minor effects on the PCEs in critical habitat 3. Thus, we do not expect construction and O&M activities of the SRPL Project to affect the ecological function of Unit 3 or the overall designation to support the species' life history requirements.

Conservation Actions and Effect on Recovery

Favorable growing conditions are unpredictable and restoration efforts may be challenging in the harsh desert environment. Thus, in addition to the onsite restoration of temporary impacts at a 1:1 ratio as discussed above, SDG&E committed to offset temporary impacts to occupied and designated critical habitat for PBS through offsite acquisition of similar habitat at a 3:1 ratio. SDG&E also committed to offset permanent construction impacts through the offsite acquisition of occupied and designated critical habitat for PBS at a minimum 5:1 ratio. SDG&E committed to offset permanent impacts to habitat associated with O&M activities at similar ratios. The precise acreage of permanent impacts associated with O&M activities was not identified in the 2009 biological and conference opinion, but these impacts were expected to be minor. These commitments were memorialized in **SS-CM-23** and **G-CM-45** of the 2009 biological and conference opinion.

No O&M activities resulting in new permanent impacts to PBS habitat were identified, so no additional conservation would be expected to offset habitat losses associated with O&M activities. Based on these ratios and the reduced impacts of the modified SRPL Project, a minimum of 45.6 ha (112.6) of occupied and 12.6 ha (31.2 ac) of designated critical habitat would be expected to be acquired for conservation to offset construction impacts. However, it was assumed in the 2009 biological and conference opinion that the no less than 149.2 ha (368.8 ac) of occupied and designated critical habitat for PBS would be acquired for conservation (Table 5). Finally, to help reconnect PBS desert bighorn sheep subpopulations and at least partially offset impacts to the overall population as a result of the SRPL Project, SDG&E committed to fund the design and construction of an overpass or underpass for sheep or tunnel for vehicles to facilitate PBS movement across a highway at a location determined by Wildlife Agencies prior to connecting and energizing the SRPL Project.

As discussed above, the intense levels of human activity in the I-8 Island during construction of the SRPL Project may cause bighorn sheep to withdraw from the area for an unknown amount of time. Should such a behavioral reaction occur, PBS will lose habitat connectivity with portions of suitable habitat south of I-8.

To compensate for the potential loss of habitat connectivity and address other habitat acquisition commitments [i.e., acquisition of no less than 149.2 ha (368.8 ac) of occupied and designated critical habitat for PBS], SDG&E, with concurrence from the Wildlife Agencies, is no longer funding the design and construction of an overpass or underpass for sheep or a tunnel for vehicles as originally proposed to facilitate PBS movement. Rather, SDG&E will fund the purchase of approximately 2,331 ha (5,760 ac) to become permanently part of the Anza-Borrego Desert State Park. The details of this complex transaction are fully explained in HAP and

include management funding of \$4.5 million dollars. This significant contribution to the long-term protection and management of PBS occupied and critical habitat has immediate benefits to PBS and far outweighs the potential benefit of the former proposed conservation effort, which would require many years to locate, design, and construct with no guarantee of success. The Suckle property also includes 80 ha (199.2 ac) of designated critical habitat for PBS. This property will be conserved and managed for wildlife, including PBS.

The area planned for acquisition and management is a “checkerboarded” ownership and highly vulnerable to destruction from OHV. The northwest portion of the Desert Cahuilla area consists of a series of washes that flow down from the mountains towards the Salton Sea. During all seasons of the year, PBS have been observed to follow the washes down, frequently feeding on cat’s claw and other nutritious wash vegetation. This northwestern area is still relatively unspoiled, but threatened, and with SDG&E’s significant contribution it would become permanently protected habitat. By creating a continuous ownership under the management of the Anza-Borrego Desert State Park, habitat connectivity would be assured for future generations of PBS. The planned conservation includes 1,132 ha (2,796 ac) of PBS designated critical habitat.

These conservation and long-term management of the Desert Cahuilla area should result in benefits to the greater distinct population segment of PBS by helping to conserve large, intact blocks of habitat, thus promoting healthy, resilient future generations of bighorn sheep.

Conclusion

After reviewing the current status of PBS, the environmental baseline for the action area, the 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 the PPBS and is not likely to destroy or adversely modify its designated critical habitat. We based this conclusion on the following:

- PBS presently use the SRPL Project area, even with relatively high levels of human activity. Consequently, it is reasonable to assume this subpopulation of bighorn sheep has become accustomed to the presence of humans in their environment to a certain degree. Additionally, the SWPL, a transmission line similar to the SRPL, currently exists in the SRPL Project area, and sheep do not appear to avoid the line.
- PBS did not cross I-8 for many years, and the interstate acted as a barrier to sheep movement. Recently, bighorns have begun crossing I-8, and re-establishing former movement patterns. However, the intense and sustained presence of humans and machinery, especially low-flying helicopters, associated with the construction phase of the SRPL Project could cause bighorn sheep to avoid the action area during project construction and for an unknown time period post-construction due to the cumulative increase in human-related disturbance. If realized this avoidance reaction likely will resurrect I-8 as a barrier to animal movement until disturbance levels subside and sheep adjust behaviorally. Such displacement and avoidance may be short-lived or it may last much longer.

- PBS in the area were apparently extirpated by 1996, and it has taken over a decade for them to regularly use the SRPL Project area. At the same time, this range expansion demonstrates the ability of this subpopulation of bighorn to re-gain movement patterns and recolonize their historic range. This ability to re-occupy habitat following disturbance and the conservation measures integral to the SRPL Project should minimize the impacts of the project and enable bighorn sheep to recover from any adverse effects.
- The spatial extent of critical habitat that will be permanently lost is relatively small, and the primary function and value of the critical habitat in this area (foraging and dispersal/connectivity functions) will be maintained.
- The habitat acquisitions and management contribution to the Anza-Borrego Desert State Park and conservation of the Suckle property will offset the minor adverse effects to designated critical habitat for PBS and represent a significant contribution in support of the range-wide conservation (recovery) of the species.

Proposed Species

Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

Status of the Species

Listing Status

The FTHL is designated as a State Species of Special Concern by the CDFG and is listed as a threatened species in Mexico. The FTHL was initially proposed as a threatened species under the Act in 1993 (58 FR 62624). Since that time, it has been withdrawn from listing consideration three times (62 FR 37853, 68 FR 331, 71 FR 36745) and reinstated three times (66 FR 66384, 70 FR 72776, 75 FR 9377), the last of which occurred on March 2, 2010; thus the species is currently proposed for listing under the Act. A more detailed account of our previous Federal actions for FTHL can be found in the March 2, 2010, Federal Register notice (75 FR 9377).

In June of 1997, seven Federal and State agencies signed a Flat-Tailed Horned Lizard Conservation Agreement to implement a Flat-tailed Horned Lizard Rangeland Management Strategy (FTHL ICC 2003; RMS). The purpose of the RMS is to provide a framework for conserving and managing sufficient habitat to maintain several viable populations of the FTHL throughout the U.S. range of the species. The RMS was developed by the FTHL ICC working group over a 2-year period. As part of the Conservation Agreement, agencies delineated specific areas under their jurisdiction as Management Areas (MAs). The MAs comprise 196,273 ha (485,000 ac), including 15,216 ha (37,600 ac) of private inholdings, of FTHL habitat managed by signatories of the Conservation Agreement within five MAs. The five MAs are the Borrego Badlands, West Mesa, Yuha Desert, East Mesa, and the Yuma Desert. These managed areas

represent a habitat-based conservation strategy and are believed to represent approximately 40 percent of FTHL habitat remaining in the U.S.

The five MAs include large areas of public land where FTHLs have been found and include most FTHL habitat identified as key areas in previous studies (Turner et al. 1980, Turner and Medina 1982, Rorabaugh et al. 1987, Foreman 1997). MAs were proposed based on accepted principles of preserve design, using the best information available at the time (FTHL ICC 2003). Furthermore, the MAs were delineated to include areas as large as possible, while avoiding extensive, existing and predicted management conflicts [e.g., OHV open areas]. The MAs are meant to function as core areas for maintaining self-sustaining populations of FTHLs in the United States (FTHL ICC 2003). Lands within the MAs have a development cap of 1 percent relative disturbance. Ocotillo Wells State Vehicle Recreation Area (SVRA) was designated as a Research Area under the Conservation Agreement. Research on the FTHL is funded and encouraged in this area.

Species Description

The FTHL was first described by Hallowell in 1852 as *Anota mcallii* after U.S. Army Colonel George A. M'Call (Funk 1981). The FTHL is a small phrynosomatid lizard that reaches a maximum adult body length of 8.4 centimeters (cm) [3.3 inches (in)] (Muth and Fisher 1992). The FTHL has a dorso-ventrally flattened body; long, broad flattened tail; and dagger-like head spines common to horned lizards of the genus *Phrynosoma*. The species is cryptic in color, ranging from pale gray to light rust dorsally, and white or cream ventrally. Males have enlarged postanal scales; females do not. The FTHL can be distinguished from the only other horned lizard known to occur within its range, the desert horned lizard (*Phrynosoma platyrhinos*), by its dark vertebral stripe, two rows of fringed scales on each side of the body, lack of external ear openings, and white or cream (unspotted) ventral surface with a prominent umbilical scar in most individuals (Foreman 1997). Apparent hybrids between the two species, exhibiting a mix of morphological characteristics, have been observed in the vicinity of Ocotillo, California (Stebbins 1985), and southeast of Yuma, Arizona (K. Young, Utah State University, pers. comm. 2002). Genetic analysis has confirmed hybridization in Arizona (Mendelson et al. 2004, Mulcahy et al. 2006).

Because current FTHL populations are separated by significant barriers to movement (Colorado River, Salton Sea), genetic differences between populations may exist. To measure the genetic diversity of FTHL populations in relationship to current patterns of fragmentation, a genetic analysis of the FTHL and the desert horned lizard was conducted (Mendelson et al. 2004, Mulcahy et al. 2006). Populations were sampled in Coachella Valley, East Mesa, West Mesa, Ocotillo Wells SVRA, the Yuha Desert, the Yuma Desert, and Gran Desierto in Mexico. Sequences were also obtained from individual lizards from the southwest side of Laguna Salada valley in Mexico, north of Borrego Springs, and the southeast part of the range in Mexico. Mitochondrial DNA sequences were obtained of the ND4 gene from a total of 84 FTHLs.

Thirty unique haplotypes of FTHLs were recovered. Unique haplotypes were identified in Coachella Valley (three unique haplotypes), Yuha Desert (four unique haplotypes), Ocotillo Wells SVRA (six unique haplotypes), East Mesa (one unique haplotype), Gran Desierto Mexico (three unique haplotypes), and Yuma (seven unique haplotypes). One shared haplotype was recovered from every location where more than one sample was taken. Uncorrected pair-wise sequence divergence within FTHL ranged from 0 to 2.2 percent. Most individual sequences could be divided into two clades corresponding to each side of the Colorado River. The analysis indicates that the species expanded into its current range in past millennia and then developed unique haplotypes in each area it populated. The data are indicative of a relatively deep but incomplete divergence within an otherwise moderate-level range of variation among populations of FTHL. Low levels of population-endemic haplotypes exist.

Distribution

The FTHL has the most restricted range of any species of horned lizard in the United States (Stebbins 2003). The species is endemic to the Sonoran Desert in southern California, southwestern Arizona, and adjacent portions of Baja California and Sonora, Mexico (Turner and Medica 1982). Within California, the FTHL ranges from the Coachella Valley, the northernmost extent of its range, south along both sides of the Salton Sea and Imperial Valley. On the west side of the Salton Sea and Imperial Valley, the species ranges into the Borrego Valley, Ocotillo Wells area, West Mesa, and the Yuha Desert. On the east side of Imperial Valley, the species occurs in the vicinity of the Dos Palmas Area of Critical Environmental Concern, but it predominantly occurs in East Mesa and in areas adjoining the Algodones Dunes (a.k.a., Imperial Sand Dunes, Glamis Sand Dunes). In Arizona, the FTHL is found in the Yuma Desert south of the Gila River and west of the Gila and Butler Mountains (Rorabaugh et al. 1987). The FTHL is patchily distributed throughout its range and is more commonly found below 250 m (820 ft) in areas with flat-to-modest slopes (Turner et al. 1980).

The range of the FTHL extends into Mexico from the international border in the Yuha Desert in California, south to Laguna Salada in Baja California, and from the international border in the Yuma Desert in Arizona, south and east through the Pinacate Region to the sandy plains around Puerto Penasco and Bahia de San Jorge, Sonora (Johnson and Spicer 1985, Gonzales-Romero and Alvarez-Cardenas 1989).

The current distribution of the FTHL is not contiguous across its range, because of fragmentation by large-scale agricultural and urban development, primarily in the Imperial Valley and the Coachella Valley. In addition, the Salton Sea, Colorado River, East Highline Canal, New Coachella Canal, and All American Canal are barriers to movement of FTHLs. Due to this habitat fragmentation and existing geographic barriers, the distribution of FTHLs appears to be currently divided on a broad scale into at least four geographically discrete U.S. populations – three in California and one in Arizona. The three in California include; the Coachella Valley population, including those individuals northwest of the Salton Sea; the Western Population, including those individuals in the areas west of the Salton Sea and the Imperial Valley; and the

Eastern Population, including those individuals in the areas east of the Salton Sea and the Imperial Valley but west of the Colorado River.

Hodges (1997) estimated that the FTHL historically occupied up to 979,037 ha (2,419,200 ac) of habitat in Arizona and California prior to agricultural or urban development of either the Coachella or Imperial Valleys. Approximately 51 percent [503,173 ha (1,243,339 ac)] of this historical habitat remains in the United States, with about 56,770 ha (140,300 ac) in Arizona and 446,390 ha (1,103,040 ac) in California (Hodges 1997).

In 2003, the revised RMS (FTHL ICC 2003) attempted to refine estimates of the historical and current range of the species. Range delineations were based on habitat (rockier areas where it was generally known the species did not occur were excluded), known localities, and elevation limits (FTHLs have rarely been found above 229 m (750 ft) altitude). There were some differences from the Hodges (1997) estimate, such as excluding the area east of the Algodones Dunes that Hodges (1997) included. The Coachella Valley area was delineated by the 229-m (750-ft) altitude constraint, which may overestimate the amount of historical habitat in this area. In the revised RMS, the historical range of the FTHL within the United States is estimated at 1,054,800 ha (2,606,468 ac), approximately 75,785 ha (187,268 ac) more than the range estimated by Hodges (1997). In the revised RMS, the current range in the U.S. is estimated to be 485,357 ha (1,199,343 ac), thus approximately 46 percent of historical FTHL habitat remains in the U.S.

Approximately 60 percent of the species' range in Mexico is located within two areas provided with protection by the Mexican government: (1) the Upper Gulf of California and Colorado Delta Biosphere Reserve and (2) the Pinacate and Gran Desierto de Altar Biosphere Reserve (CEDO 2002). The National Park of Pinacate is an area administered by the Mexican government with use restrictions similar to those in a national park in the U.S. The Pinacate area is primarily a volcanic zone within which FTHL habitat is probably limited to the sandy perimeters of Volcan Pinacate. The Upper Gulf of California Biosphere Reserve includes FTHL habitat in the vicinity of the Colorado River Delta in Sonora, Mexico.

Status and Population Trends

Recent data indicate that relatively large FTHL populations persist in the East Mesa, Yuha Desert, and Yuma Desert MAs and the Ocotillo Wells SVRA. The West Mesa MA also supports a lesser population of approximately 10,000 lizards. Current population estimations for the Borrego Badlands MA do not exist. Based on recent capture-mark-recapture (CMR) surveys in these MAs, the species appears to be persisting in the MAs, which include 40 percent of the remaining range in the United States. However, no trend data for these areas is available. Data for populations outside of MAs are also lacking, but they may be declining due to continued habitat loss and effects of OHVs. Currently the lizard is afforded protection under a Conservation Agreement that entails implementation of the RMS. This strategy established the five MAs (West Mesa, East Mesa, Yuha Desert, Yuma Desert, and Borrego Badlands) with the goal of maintaining viable populations of FTHLs. If this voluntary management strategy

continues to be implemented over the long-term, it is likely that the FTHL will persist in designated FTHL MAs.

Based on track monitoring in the Coachella Valley from 2002 to 2005 (Center for Conservation Biology (CCB) 2005), which may not be reliable due to an uncorrected bias that exists (Service 2008), it appears that Coachella Valley FTHL numbers declined for several years but mostly recovered in 2006. The abundance index for FTHLs is the mean number of trackways (a set of tracks laid down by one lizard) per transect. This index has dropped each year from nearly 1 in 2002 to approximately 0.1 in 2005 (CCB 2005). In 2006, the index had returned to nearly 0.7. Such wide fluctuations make it difficult to determine the status of the species. The critical time period is at the low ebb of population size, when the population could fluctuate too low to recover. It is unknown how close the Coachella Valley population came to reaching this point in 2005.

Habitat Affinities

The FTHL is most commonly found in sandy flats and valleys in creosote (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) plant associations (Turner et al. 1980, Muth and Fisher 1992, Foreman 1997). Turner et al. (1980) stated the best habitats are generally low-relief areas with surface soils of fine packed sand or pavement, overlain with loose, fine sand. Flat-tailed horned lizards are also known to occur at the edges of vegetated sand dunes, on barren clay soils, and sparse saltbush communities, but Turner et al. (1980) suspected that these recorded occurrences were actually individuals that had dispersed from more suitable habitats. Within a creosote plant community in West Mesa, California, Muth and Fisher (1992) found that FTHLs preferred sandy substrates with white bursage and Emory's indigo bush (*Psoralea emoryi*), while they avoided creosote and fanleaf crinklemat (*Tiquilia plicata*). In Arizona, Rorabaugh et al. (1987) found FTHL abundance correlated with big galleta grass (*Hilaria rigida*) and sandy substrates but suggested that the presence of sandy substrates were more important than that of big galleta grass. Beauchamp et al. (1998) described FTHLs occupying mud hills and gravelly flats. Altman et al. (1980) also reported finding FTHLs in desert pavement areas.

Greater than 95 percent of the diet by prey item of FTHLs consists of ants of the genera *Messor*, *Pogonomyrmex*, *Conomyrma*, and *Myrmecocystus* (Turner and Medica 1982, Pianka and Parker 1975). *Messor pergandei* and *Pogonomyrmex* spp. are harvester ants that collect seeds of plants for food. Harvester ants are much larger than *Conomyrma* and *Myrmecocystus* and hence are probably more important prey sources. Grant (2005) found the percent cover of sand and the number of black harvester ant (*Messor pergandei*) nests to be positively correlated with FTHL abundance.

Life History

FTHLs are oviparous (egg-laying), early maturing, and may produce multiple clutches within a breeding season (Howard 1974). FTHLs produce relatively small egg clutches (Howard 1974), compared to most other horned lizards (Pianka and Parker 1975). The first cohort hatches in

July to August (Muth and Fisher 1992, Young and Young 2000) in years of adequate rainfall. Approximately 5.8 cm (2.0 in) of rainfall in the previous September to May is enough to cause the first cohort to appear in July or August (Grant 2005). Generally a second cohort then appears in the fall (Muth and Fisher 1992). In drier years, only one cohort is produced that emerges in the fall (e.g. Setser 2004, Muth and Fisher 1992). Hatchlings from the first cohort may reach sexual maturity after their first winter season, whereas hatchlings born later may require an additional growing season to mature (Howard 1974, Young and Young 2000). FTHLs can live up to at least 6 years in the wild (FTHL ICC 2003), and up to 9 years in captivity (Baur 1986). In the Yuma Desert, few lizards were found to live longer than 4 years (FTHL ICC 2003).

Based on studies of their daily movements, FTHLs are very active and have large home ranges compared to other sympatric lizard species of similar size (Miller 1999, Wone and Beauchamp 2003). Large variation in home range size was noted among individuals and between years (Miller 1999, Young and Young 2000); this variation may depend on gender and precipitation. However, FTHLs may not maintain distinct home ranges but instead shift their area of use through time, thereby increasing the home range estimate with each additional location (Miller 1999). Mean home range size for the FTHL has been estimated between 0.6 ha (1.4 ac) and 10.3 ha (25.5 ac) (Muth and Fisher 1992, Miller 1999, Young and Young 2000, Setser 2004).

Adult FTHLs are reported to be obligatory hibernators (Mayhew 1965), although individuals have been noted on the surface during January and February (Wone and Beauchamp 2003). Hibernation may begin as early as October and end as late as March (Muth and Fisher 1992). Individual lizards may hibernate for many months, as short as 1 week (Muth and Fisher 1992, Grant 2005), or not at all (Wone and Beauchamp 2003). The date at which FTHLs enter hibernation in the fall depends on the size and weight of the lizard. Larger, heavier lizards begin hibernation sooner (Grant 2005, Grant and Doherty 2006). Hibernation burrows are constructed by the lizards themselves rather than using burrows constructed by other animals and are within 10.0 cm (3.9 in) of the surface (Muth and Fisher 1992). Mayhew (1965) found that the majority of lizards hibernated within 5 cm (2 in) of the surface. The greatest depth recorded was 20.0 cm (7.9 in) below the surface. Grant (2005) found the median depth of hibernating lizards (N = 31) to be 5 cm (2 in) to the center of the dorsum. While most adults apparently hibernate during winter months, some juveniles may remain active (Muth and Fisher 1992, Grant 2005).

FTHLs generally lie close to the ground and remain motionless when approached (Wone 1995). Individuals may also bury themselves in loose sand if it is available (Norris 1949). More rarely they may flee. Their propensity to remain motionless and bury themselves in the sand, along with their cryptic coloration and flattened body, make them very difficult to find in the field (Foreman 1997) and increase their susceptibility to vehicle strikes. During the summer, FTHLs escape extreme surface temperatures by retreating to burrows (Rorabaugh 1994, Young and Young 2000, Wone and Beauchamp 2003).

Threats and Conservation Needs

Rangewide threats to the FTHL include: urban development (including renewable energy), OHV activity, military activities, introduction of non-native plants, pesticide use, and habitat degradation due to Border Patrol and illegal drive-through traffic along the United States–Mexico border.

Numerous renewable energy developments have recently been constructed or are proposed for construction within the California desert, primarily on BLM lands. Energy developments can result in surface disturbance that modifies FTHL habitat, making the area no longer suitable for FTHL. Several aspects of FTHL ecology and behavior contribute to the species' sensitivity to habitat loss and degradation. Among these are the following: 1) the FTHL is distributed over a relatively small area; 2) relatively low clutch size may limit the ability of FTHL populations to recover from declines; 3) FTHLs often freeze in response to danger, which makes them susceptible to mortality on roads and in other areas of activity; 4) FTHLs are found in valleys and flats where the majority of residential, agricultural, and energy development typically occurs; 5) FTHLs are susceptible to a variety of predators, many of which occur at elevated levels near agriculture or urban areas; and 6) FTHLs inhabit the most arid portions of the Sonoran Desert, in which drought is likely an important factor in population dynamics, which may be exacerbated by accelerated climate change.

Changes in weather patterns associated with global climate change, particularly the timing and amount of rainfall in the Sonoran Desert, are a potential threat to the FTHL. Assessments for the Sonoran Desert are few, but since the 1970s, the region appears to have experienced widespread warming trends in winter and spring, increased minimum winter temperatures, and more variable precipitation (Weiss and Overpeck 2005). Additionally, models developed to assess extinction risk to lizards due to climate change suggest that Phrynosomatid lizards are susceptible to increased risk of extinction because of intolerance to an increase in environmental temperatures (Sinervo et al. 2010). Therefore, the effects associated with global climate change may adversely affect the FTHL, but at this time, the level of uncertainty in climate predictions is high. While we recognize that climate change is an important issue with potential effects to listed species and their habitats, we lack adequate information to make accurate predictions regarding potential effects to the FTHL. Therefore, the magnitude of this threat is unknown at this time. OHV activity occurs at varying intensities throughout most remaining areas supporting FTHL habitat. Use guidelines within all of the FTHL MAs recognized in the RMS allow OHV use on existing or designated routes; however, legal use is restricted to such routes in these areas. Four areas open to unrestricted OHV use in California are within the range of the FTHL: Plaster City Open Area, Superstition Hills Open Area, Imperial Sand Dunes Recreation Area, and Ocotillo Wells SVRA. Together, the four Open Areas comprise approximately 99,998 ha (247,100 ac), which is 21 percent of the approximately 485,358 ha (1,199,345 ac) of habitat remaining in U.S. Illegal OHV recreation is difficult to quantify, but it occurs to some degree in many areas inside the MAs. Recreational use of OHV open areas has increased substantially since the 1980's and is expected to continue to increase in the future. Visitation at California SVRAs, of which Ocotillo Wells SVRA is the largest, increased by 52 percent between 1982 and 2000 (California

State Department of Parks and Recreation (CDPR) 2002). While some research has demonstrated FTHL fatalities associated with vehicle use (Muth and Fisher 1992), the degree of impact to FTHL populations is not known. Grant (2005) found that hibernating FTHLs suffer low levels of mortality due to OHVs, but quantification of direct effects of OHVs on active (non-hibernating) lizards has yet to be undertaken. OHVs likely also degrade habitat by destroying native plants that produce seeds that are the main food source for the harvester ants *Messor pergandei* and *Pogonomyrmex* spp, which are in turn a main prey item for FTHL.

The Department of the Navy administers land in FTHL habitat in Arizona and California. In California, the Navy has several bombing practice targets for Navy jets. The bombs used are generally dummy bombs with only a small charge that releases smoke to verify the strike. The impact of low-flying, very loud aircraft has not been studied. The operations and maintenance of these targets likely has some level of effect. However, the military lands are off-limits to the public.

Invasive plants pose a threat to FTHL habitat and adversely affect FTHLs. Invasive exotic plants, including grasses, such as *Schismus* spp., increase fire frequency (Brooks and Esque 2002), and Sonoran Desert vegetation is not fire-adapted. As an example, an area of East Mesa burned several years ago, and most of the creosote was killed. This area is now dominated by relatively thick exotic plants. In addition, FTHLs are typically found in areas with a high percentage of bare ground, and the dense vegetation composition associated with invasive plants limits FTHL movement because of their wide bodies (Newbold 2005), potentially increasing predation threats and limiting foraging success. Exotic plant seeds may not be the ideal food resource for the ants that FTHLs prey on. Saharan mustard (*Brassica tournefortii*) was estimated to cover 39.5 percent of sampled sand fields in the Coachella Valley Preserve in 2005 (Barrows 2005). The extent of invasive plant coverage in FTHL habitat throughout their range has not been measured, but it is likely increasing.

Pesticides used in agriculture are known to kill individual surface-foraging harvester ants, though colonies seem to recover quickly from a single treatment (FTHL ICC 2003). The chronic effects of pesticide drift are unknown and difficult to quantify. Foreman (1997) stated that the effects of applying broad-spectrum insecticide to desert scrub communities over many years are potentially many and complex. Pesticide/herbicide drift from croplands also has the potential to adversely affect plant communities adjacent to agricultural areas. Although some pesticide drift is likely leaving agricultural areas and entering adjacent desert lands, the magnitude and effects of this drift have not been measured.

In Imperial and Yuma County, Border Patrol is highly active in patrolling the international border to intercept illegal immigration. The Border Patrol has no restrictions on desert access and can drive off-road. The border area is enduring impacts from Border Patrol traffic as well as associated illegal immigrant patrols.

Some of these threats have been reduced since the development and implementation of the RMS, and we anticipate a further reduction of threats with continued implementation of the RMS. A

more detailed analysis of these threats can be found in the RMS (FTHL ICC 2003), which is hereby incorporated by reference.

Environmental Baseline

Within the action area, the FTHL is restricted to the first 37 km (23 mi) of the SRPL Project footprint. Project-specific surveys have not been conducted, so suitable habitat is considered occupied by FTHL for this analysis. Between MP-0 and MP-7.1, the project footprint is within occupied FTHL habitat in the Yuha Desert MA. Outside of this MA, the project footprint includes FTHL occupied habitat from MP-7.9 to MP-13.0, from MP-15.8 to MP-17.5 and from MP-18.2 to MP-23.3. Within these MP designations, the entire action area is occupied by FTHLs.

Effects of the Action

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger 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, are later in time, and still reasonably certain to occur.

For the purposes of this analysis, impacts within the FTHL MAs are separated from impacts outside of the MAs because corresponding conservation actions are treated differently. Our analysis includes an assessment of the potential effects of the modified (i.e., impact-reduced) SRPL Project on FTHL and its habitat during construction and as a result of long-term O&M activities.

Based on the analysis conducted for the FEIR/EIS, SDG&E determined that the SRPL Project would permanently impact up to 37.8 ha (93.4 ac) of FTHL habitat and temporarily impact up to 110.8 ha (273.9 ac) of similar habitat. Most of these impacts were attributable to proposed construction yards 61.4 ha (151.6 ac), temporary work pads 42.9 ha (105.9 ac) and roads 29.0 ha (71.7 ac).

Following issuance of the 2009 biological and conference opinion, we expected SDG&E to make project modifications to reduce impacts, where feasible, and they have complied with conservation measures specific to these goals. Under the modified SRPL Project, construction yard impacts in FTHL habitat will be reduced to 25.3 ha (62.4 ac), temporary work pad impacts will be eliminated, and road impacts will be reduced to 6.2 ha (15.4 ac). In addition, the impacts expected as a result of O&M activities have been better defined.

Within the Yuha MA, the modified SRPL Project will permanently impact 3.9 ha (9.5 ac) and temporarily impact 14.9 ha (36.9 ac) of FTHL habitat. Outside the MA, the modified SRPL

Project will permanently impact 10.7 ha (26.4 ac) and temporarily impact 38.4 ha (94.9 ac) of FTHL habitat. In total, SRPL Project construction will permanently impact 14.5 ha (35.9 ac) and temporarily impact 53.3 ha (131.8 ac) of FTHL habitat, which is cumulatively 67.8 ha (167.7 ac).

In addition, SDG&E will impact up to 6 ha (15 ac) of habitat annually for standard O&M activities within the Imperial County portion of the action area within the FTHL's range. Based on the amount of FTHL habitat in areas potentially impacted by O&M activities within and outside the ROW, we anticipate annual impacts up to 5 ha (13 ac) within FTHL habitat for standard O&M activities. Fire prevention and management activities are not likely to require removal of habitat within open desert communities so these activities will occur only in San Diego County; thus, no loss of FTHL habitat is anticipated for O&M activities related to fire prevention and management.

Conservation Measure **SS-CM-28** is particularly relevant to SDG&E's commitment to avoid, minimize, and offset impacts to the FTHL and is repeated here for ease of reference.

SS-CM-20 SDG&E will implement avoidance, mitigation and compensation measures consistent with the Flat-Tailed Horned Lizard Rangelwide Management Strategy (FTHL RMS) (FTHL ICC 2003). The FTHL RMS includes the following requirements:

- To the extent possible, surface-disturbing projects will be located outside the FTHL MA and will be timed to minimize mortality. If a project must be located within an MA, effort will be made to locate the project in a previously disturbed area or in an area where habitat quality is poor.
- Prior to SRPL Project initiation, an individual will be designated as a field contact representative. The field contact representative will have the authority to ensure compliance with protective measures for the FTHL and will be the primary agency contact dealing with these measures. The field contact representative will have the authority and responsibility to halt activities that are in violation of these terms and conditions.
- All project work areas will be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers will restrict their activities and vehicles to areas that have been flagged to eliminate adverse impacts to the FTHL and its habitat. All workers will be instructed that their activities are restricted to flagged and cleared areas. (**G-CM-6**).
- Within FTHL habitat, the area of disturbance of vegetation and soils will be the minimum required for the project. Clearing of vegetation and grading will be minimized. Wherever possible, rather than clearing vegetation and grading the ROW, equipment and vehicles will use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils will be stockpiled and replaced following construction to facilitate habitat restoration. To the

extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. **(G-CM-12)**.

- Existing roads will be used for travel and equipment storage whenever possible. **(G-CM-6, G-CM-8, G-CM-21)**.
- Where feasible and desirable, in the judgment of the lead agency, newly created access routes will be restricted by constructing barricades, erecting fences with locked gates at road intersections, and/or by posting signs. In these cases, the project proponent will maintain, including monitoring, all control structures and facilities for the life of the SRPL Project and until habitat restoration is completed. **(G-CM-26)**.
- A Project Biologist will be present in each area of active surface disturbance throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of FTHLs by a Project Biologist. The monitor(s) will perform the following functions:
 - a. Develop and implement a worker education program. Wallet-cards summarizing this information will be provided to all construction and maintenance personnel. The education program will include the following aspects at a minimum:
 - i. biology and status of the FTHL,
 - ii. protection measures designed to reduce potential impacts to the species,
 - iii. function of flagging designating authorized work areas,
 - iv. reporting procedures to be used if a FTHL is encountered in the field, and
 - v. importance of exercising care when commuting to and from the project area to reduce mortality of FTHLs on roads.
 - b. Ensure that all project-related activities comply with these measures. The Project Biologist will have the authority and responsibility to halt activities that are in violation of these terms and conditions.
 - c. Examine areas of active surface disturbance periodically (at least hourly when surface temperatures exceed 85°F) for the presence of FTHLs. In addition, all hazardous sites (e.g., open pipeline trenches, holes, or other deep excavations) will be inspected for the presence of FTHLs every morning prior to starting construction activities, mid-afternoon, and prior to leaving and/or prior to backfilling.
 - d. Work with the project supervisor to take steps, as necessary, to avoid disturbance to FTHLs and their habitat. If avoiding disturbance to a FTHL is not possible or if a FTHL is found trapped in an excavation, the affected lizard will be captured by hand and relocated. **(G-CM-1)**.

- Sites of permanent or long-term (greater than 1 year) projects in the MAs where continuing activities are planned and where FTHL mortality could occur, may be enclosed with FTHL barrier fencing to prevent lizards from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing should be in accordance with the standards outlined in Appendix 7 of the FTHL RMS. After clearing the area of the FTHLs, no onsite monitor is required.
- The project proponent will develop a SRPL Project-specific habitat restoration plan under approval by the lead agency. The plan will consider and include as appropriate the following methods: replacement of topsoil, seedbed preparation, fertilization, seeding of species native to the area, noxious weed control, and additional erosion control. Generally, the restoration objective will be to return the disturbed area to a condition that will perpetuate previous land use. The project proponent will conduct periodic inspection of the restored area. Restoration will include eliminating any hazards to FTHLs created by construction, such as holes and trenches in which lizards might become entrapped. Disturbance of existing perennial shrubs during restoration will be minimized, even if such shrubs have been crushed by construction activities (**G-CM-16**).

Direct Effects

1. Construction Activities

Construction activities, including construction yards and access roads, will result in the permanent loss of approximately 3.9 ha (9.5 ac) of FTHL habitat within the Yuha Desert MA and 10.7 ha (26.4 ac) of FTHL habitat outside of the MA, for a total permanent impact to FTHL habitat of 14.5 ha (35.9 ac). Construction activities will also result in temporary impacts to approximately 14.9 ha (36.9 ac) of FTHL habitat within the Yuha Desert MA and 38.4 ha (94.9 ac) outside of the MA, for a total temporary impact of 53.3 ha (131.8 ac).

A majority of the lizards occurring within construction areas at the time of construction will likely be killed during the course of construction. FTHLs freeze and bury in the sand in response to predators, and this behavior is likely to occur in response to construction activity (FTHL ICC 2003). Alternatively, FTHLs may be underground and inactive if construction occurs during cold weather conditions, which could lead to individual FTHLs being crushed or entombed in their burrows. Grant and Doherty (2007) estimated a FTHL population density of 0.41 FTHL per ha (0.17 FTHL per ac) within the Yuha Desert MA. Based on this density estimate and the total impact within FTHL habitat of 67.8 ha (167.7 ac), we expect up to 28 FTHLs to be killed during SRPL Project construction both inside and outside the Yuha Desert MA.

To minimize mortality of FTHLs, individuals found within construction sites will be removed when encountered prior to or during construction. Also, a worker education program will be implemented to inform personnel working on the proposed SRPL Project about FTHL ecology and measures to avoid and minimize impacts. Finally, a Project Biologist will be present during construction to ensure compliance with avoidance and minimization measures.

In addition, to direct mortality from construction activities, the loss of suitable habitat may impact FTHL in the action area through loss of foraging, dispersal and overwintering habitat. However, FTHL habitat subject to temporary impacts will be restored based on a habitat restoration plan approved by the BLM; thus, about 79 percent of the habitat impacted will be restored. Since the SRPL Project is within the approximately 24,362 ha (60,200 ac) Yuha Desert MA and surrounding occupied habitat is primarily under management of the BLM, there is a high likelihood that FTHL will re-occupy temporarily impacted areas following restoration efforts.

Overall, construction of the SRPL Project will affect a very small proportion of the habitat available to FTHL within and adjacent to the action area. Within the Yuha Desert MA alone, there likely more than 10,000 FTHL present during most years (Grant and Doherty 2007). Therefore, the loss of 28 FTHLs is not expected to appreciably reduce the numbers, reproduction, or distribution of FTHL in the action area or rangewide.

2. Operations and Maintenance

The total amount of land within the ROW and impact areas outside the ROW in the Imperial County portion of the action area within the FTHL's ranges is 326 ha (806 ac). To assess potential impacts to FTHL habitat from O&M activities, we determined that the ROW and impact sites outside of the ROW include 284 ha (703 ac) of FTHL habitat or 87 percent of the total amount of land within these areas.

SDG&E estimates overall habitat impacts of 6 ha (15 ac) for standard O&M activities within the Imperial County portion of the action area. Because suitable habitat for FTHL represent 87 percent of the total area potentially impacted by these activities, impacts to FTHL habitat from these activities are reasonably expected to be 87 percent of the overall annual impact or 5.2 ha (13.0 ac) annually. Because these impacts will occur primarily in previously disturbed areas, it is unlikely that densities of FTHL will be similar in these areas to the density reported for the Yuha Desert MA. Nonetheless, using the same density estimate of 0.41 FTHL per ha (0.17 FTHL per acre), standard O&M impacts in the Imperial County portion of the action area will potentially affect only 2 FTHL annually. Based on the amount of habitat available to FTHL, this small impact is not likely to result in an appreciable reduction in the numbers, reproduction, or distribution of the FTHL in the action area or rangewide.

Indirect Effects

Project construction may indirectly affect FTHL through increased predation and introduction of non-native plants. Predatory birds that perch on transmission towers and lines, such as loggerhead shrikes (*Lanius ludovicianus*), American kestrels (*Falco sparverius*), and common ravens (*Corvus corax*), may use project structures and increase FTHL predation rates (FTHL ICC 2003). SDG&E will implement the Raven Control Plan to minimize the impacts of increased bird predation on the FTHL.

Construction vehicles may introduce non-native plants and soil disturbance may promote establishment of these plants. Non-native plants may impact FTHL habitat quality by increasing vegetation density and impeding FTHL movement through these areas. An increase in non-native plants may also limit prey availability through reduced foraging opportunities for preferred prey (e.g., harvester ants). To minimize impacts of non-native plants, SDG&E will implement the Weed Control Plan.

Conservation Actions and Effect on Recovery

In addition to the onsite restoration of temporary impacts at a 1:1 ratio as discussed above, and in accordance with the RMS, SDG&E, with concurrence from the Wildlife Agencies, has provided compensation for the permanent and temporary loss of the habitat that will not be avoided through payment of the in lieu fee identified in MMCRP measure B-7b. A payment of \$348,450 was made to BLM based on the estimated permanent and temporary impacts that would have been caused by construction of the Final Environmentally Superior Southern Route (Appendix 8P of the Final EIR/EIS). In the Final EIR/EIS, SDG&E estimated a total of 31 ha (74 ac) of permanent impacts, including 9 ha (23 ac) in the MA, and 94 ha (233 ac) of temporary impacts, including 37 ha (91 ac) in the MA. Since the payment amount was determined, SDG&E has reduced the permanent impacts by 16 ha (40 ac), including 5 ha (13 ac) in the MA, and the temporary impacts by 41 ha (101 ac), including 22 ha (54 ac) in the MA. Therefore, the modified SRPL Project is consistent with the RMS and provides additional funding that will be used to implement FTHL recovery actions beyond the scope of the RMS.

As described in the RMS, the primary use of this payment will be to purchase property in inholdings or contiguous with the Yuha Desert MA, but funds may also be used for land acquisition in other MAs, minimization of OHV impacts through fences, signs and education, restoration of FTHL habitat, and others actions deemed necessary by the FTHL ICC.

Conclusion

After reviewing the current status of the FTHL, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our conference opinion that the proposed action is not likely to jeopardize the continued existence of the FTHL. We based this conclusion on the following:

- 1) The SRPL Project will impact only 18.8 ha (46.4 ac) of FTHL habitat within the 24,362-ha (60,200-ac) Yuha Desert MA, including 14.9 ha (36.9 ac) that are temporary and will be restored; an additional 49.1 ha (121.3 ac) of impacts will occur outside of this MA; these impacts represent only a small fraction (much less than 1 percent) of the overall habitat available for the FTHL in the United States;
- 2) A maximum of 28 FTHL out of over an estimated 10,000 FTHL in the surrounding area will be killed during SRPL Project construction;

- 3) O&M activities are expected to impact a maximum of only 5.2 ha (13.0 ac) of FTHL habitat and 2 FTHL annually;
- 4) The funds contributed by SDG&E to the BLM will provide additional land acquisition and/or management for FTHL through the FTHL RMS that will contribute to the long term recovery of the species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulations issued pursuant to section 4(d) of the Act, prohibit take of endangered and threatened species without a special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an action that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral 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 section 7(o)(2), such incidental taking is not considered to be a prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by the BLM, USFS, or SDG&E in order for the exemption in section 7(o)(2) to apply. The BLM and USFS have a continuing duty to regulate the activity that is covered by this incidental take statement. If the BLM or USFS (1) fail to assume and implement the terms and conditions, or (2) fail to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. The measures described below for gnatcatcher, Quino, and arroyo toad are non-discretionary and must be undertaken by the BLM or USFS 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 prohibitions against taking FTHL found in section 9 of the Act do not apply until the species is listed. However, the Service advises the BLM and USFS to consider implementing the reasonable and prudent measure below for FTHL. If the FTHL is listed and this conference opinion is adopted as a biological opinion, the measures described below for the FTHL, with their implementing terms and conditions, will be non-discretionary.

To monitor the impact of incidental take, the BLM, USFS, and/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 [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

No take of vireo or PBS is anticipated by construction of the SRPL Project or during O&M activities over the life of the SRPL Project, and none is authorized.

Coastal California Gnatcatcher

The take threshold for gnatcatchers is based on the number of gnatcatcher pairs and the amount of suitable habitat impacted. If the take threshold is exceeded, it will trigger reinitiation of consultation. Take of gnatcatcher is authorized as follows:

Permanent removal of gnatcatcher habitat for construction of the SRPL Project is not expected to result in any significant effect to existing gnatcatcher territories or pairs within the action area. Temporary removal of habitat during construction is expected to increase the risk of mortality or interfere with gnatcatcher breeding activity. Take of gnatcatcher during construction of the SRPL Project is authorized as the follows:

- Take in the form of harm of up to 5 gnatcatcher pairs is authorized due to the temporary removal of up to 0.9 ha (2.2 ac) of suitable gnatcatcher habitat at or near MP-107 and removal of up to 0.28 ha (0.70 ac) of suitable gnatcatcher habitat at or near MP-112. The take threshold will be met if more than the specified amount of habitat at or near each site is removed or more than four gnatcatcher pairs are observed by the Project Biologist(s) while conducting compliance monitoring at or near MP-107 or more than one gnatcatcher pair is observed by the Project Biologist(s) while conducting compliance monitoring at or near MP-112.

Annual removal of habitat during standard O&M activities of the SRPL Project is not expected to result in any significant effect to gnatcatcher territories or pairs within the action area over the life of the SRPL Project. Permanent removal of habitat for fire prevention and management is expected to increase the risk of mortality or interfere with gnatcatcher breeding activity. Take of gnatcatchers for fire prevention and management over the life of the SRPL Project is authorized as follows:

- Take in the form of harm of up to eight gnatcatcher pairs is authorized due to the permanent removal of up to 22 ha (55 ac) of suitable gnatcatcher habitat within the action area of the SRPL Project over the life of the SRPL Project. The take threshold will be met if more than 8.1 ha (20.0 ac) of suitable gnatcatcher habitat in a concentrated area along the linear ROW or within SRPL impact areas outside the ROW are impacted without prior approval of the Service.

Quino Checkerspot Butterfly

Quantifying the precise number of individual Quino that may be incidentally taken is not possible because 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 SRPL Project. Because we cannot provide the precise number of individual Quino that are likely to be taken over the life of the SRPL Project, we have established take thresholds that, if exceeded, will trigger reinitiation of consultation. Take of Quino is authorized as follows:

- Death or injury of eggs, larvae, and pupae from crushing, trampling, or burial during habitat clearing activities of up to 13.3 ha (32.7ac) of Quino habitat during construction of the SRPL Project. If the SRPL Project impacts more than 13.3 ha (32.7 ac) of Quino habitat during construction, the take threshold will be met.
- Death or injury of adults from vehicular collision along roads during construction activities. Because there is a low likelihood that any Quino killed from vehicular collision will be observed or found, the take threshold will be met if more than five adult Quino per year are observed killed or injured as a result of vehicular collision during compliance monitoring by the Project Biologist(s) of construction sites near the four Quino occurrence complexes within the action area (i.e., Quino occurrence complexes at MP-35 to MP-38, MP-70 to MP-84, MP-103 to MP-109, and MP-112 to MP-119) (Figure 4).
- Death or injury of eggs, larvae, and pupae from crushing, trampling, or burial during habitat clearing activities of up to 1.9 ha (4.7 ac) of Quino habitat annually for O&M activities. If the SRPL Project impacts more than 1.9 ha (4.7 ac) of Quino habitat in any one year for O&M activities, the take threshold will be met.
- Death or injury of eggs, larvae, and pupae from crushing, trampling, or burial during habitat clearing activities of up to 21 ha (52 ac) of Quino habitat over the life of the SRPL Project for fire prevention and management. If the SRPL Project impacts more than 4 ha (10 ac) of Quino habitat within any one Quino occurrence complex without prior approval from the Service, the take threshold will be met.

Arroyo Toad

The exact distribution and population size of arroyo toads is difficult to determine due to the dynamic conditions associated with their habitat and biology and because detection of arroyo toads outside of the breeding season is very difficult. However, as described in our effects analysis for the arroyo toad, we estimate that up to 92 arroyo toads could be impacted by habitat removal during construction and O&M activities within upland habitats within the action area (i.e., up to 11 during permanent habitat removal, up to 61 during temporary habitat removal, and 20 for fire prevent and management) and an additional 2 arroyo toad killed or injured during capture and relocation efforts. We anticipate that all 94 arroyo toads will be subject to some form of take during construction & O&M activities, including through the capture and relocation efforts. We estimate that during natural rainfall events or supplemental watering at sites larger

than 2 ha (5 ac) in size, only 50 to 75 percent of the arroyo toads present will be captured and released to adjacent habitat. Because we will not be able to effectively monitor the remaining number of aestivating arroyo toads that are killed or injured, we have established take thresholds that, if exceeded, will trigger reinitiation of consultation.

- Capture and release of arroyo toad is authorized as follows:
 - a) Up to three arroyo toads (75 percent of the estimated arroyo toads) at the stringing site near MP-71; the take threshold will be met if more than three arroyo toads are captured or observed within the boundaries of the exclusionary fencing.
 - b) Up to 17 arroyo toads (75 percent of the estimated arroyo toads) at the Kreutzkamp Construction Yard near MP-74; the take threshold will be met if more than 17 arroyo toads are captured or observed within the boundaries of the exclusionary fencing.
 - c) Up to 10 arroyo toads (75 percent of the estimated arroyo toads) at Hartung Construction Yard near along the San Diego River between MP-102 and MP-103; the take threshold will be met if more than 10 arroyo toads are captured or observed within the boundaries of the exclusionary fencing.
 - d) Up to 12 arroyo toads (75 percent of the estimated arroyo toads) at the Helix Construction Yard near MP-105; the take threshold will be met if more than 12 arroyo toads are captured or observed within the boundaries of the exclusionary fencing.
- Accidental death or injury of up to two arroyo toads as a direct result of exclusionary fencing, capture, and release efforts; the take threshold will be met if more than two arroyo toads are killed or injured as a direct result of any of these activities.
- Take in the form of harm is authorized as follows:
 - a) The permanent removal of up to 6 ha (15 ac) of suitable arroyo toad habitat during construction. The take threshold will be met if more than this amount of arroyo toad habitat is removed during construction or if death or injury of more than one arroyo toad is observed or otherwise documented during compliance monitoring by the SRPL Project Biologist of sites permanently impacted. Only a fraction, if any, of the arroyo toads killed or injured by habitat removal are likely to be observed or found. Since capture and translocation will not occur at sites permanently impacted, this take threshold is established at 10 percent of the estimated number of toads impacted by habitat removal.
 - b) The permanent removal of up to 11.1 ha (27.5 ac) of suitable arroyo toad habitat for fire prevention and management. The take threshold will be met if more than this amount of arroyo toad habitat is removed over the life of the SRPL Project or if death or injury of more than two arroyo toads is observed or otherwise documented during compliance

monitoring by the Project Biologist of sites permanently impacted. Only a fraction, if any, of the arroyo toads killed or injured by habitat removal are likely to be observed or found. Since capture and translocation will not occur at sites permanently impacted, this take threshold is established at 10 percent of the estimated number of toads impacted by habitat removal.

- c) The temporary removal of up to 34 ha (84 ac) of suitable arroyo toad habitat during construction. The take threshold will be met if more than this amount of arroyo toad habitat is removed during construction or if death or injury of more than one arroyo toad is observed or otherwise documented during compliance monitoring by the Project Biologist of sites temporarily impacted, outside of the sites where capture and translocation efforts are conducted. Only a fraction, if any, of the arroyo toads killed or injured by habitat removal are likely to be observed or found. Since capture and translocation will not occur at all sites temporarily impacted, this take threshold is established at 10 percent of the estimated number of toads impacted by habitat removal at sites with no capture and translocation efforts.

Flat-tailed Horned Lizard

The FTHL is a rare, difficult-to-detect species, with a limited distribution. Detection of FTHLs in the field is difficult because of their propensity to remain motionless and/or bury themselves in the sand when threatened and their cryptic coloration and flattened body (Foreman 1997). More appropriate detection probabilities for FTHL were first investigated and incorporated into abundance estimates by Grant (2005). We do not have survey data to derive a detection probability estimate for the action area, but data from 2006-2009 FTHL occupancy monitoring surveys within FTHL MAs estimated an average detection probability of 18 percent.

Given that the level of survey effort (i.e., amount of area searched per period of time) to find FTHLs on the proposed SRPL Project site will incorporate a level of effort similar to occupancy monitoring, we assume detection probabilities will also be similar. Therefore, we will assume a detection probability of 18 percent within the action area at sites supporting FTHL. Take of FTHL is authorized as follows:

- Death or injury of 28 FTHL during the permanent removal of up to 18.8 ha (46.4 ac) of FTHL habitat during construction. Project Biologist(s) are authorized to capture, collect, and move FTHLs out of harm's way. Since there is a low probability of detection, the take threshold will be met if the Project Biologist(s) observe, capture or collect (dead or alive) more than five FTHLs.
- Death or injury of two FTHL during the permanent removal of up to 5.2 ha (13.0 ac) of FTHL habitat during O&M activities annually. Project Biologist(s) are authorized to capture, collect, and move FTHLs out of harm's way. Since there is a low probability of detection, the take threshold will be met if the Project Biologist(s) observe, capture or collect (dead or alive) more than two FTHLs annually.

EFFECT OF TAKE

In the accompanying biological opinion, we determined that the level of incidental take of gnatcatchers, Quino, arroyo toads, and FTHL is not likely to result in jeopardy to these species.

REASONABLE AND PRUDENT MEASURES

SDG&E is implementing significant General and Species-Specific Conservation Measures as part of the proposed action to minimize the incidental take of gnatcatchers, Quino, arroyo toads, and FTHL. In addition to these conservation measures, the Service believes the following reasonable and prudent measures are necessary and appropriate to monitor the impacts of this incidental take of gnatcatcher, Quino, arroyo toad, and FTHL. These measures assume full implementation of the General and Species-Specific conservation measures identified in the project description.

1. SDG&E shall monitor and report the level of incidental take of gnatcatchers from construction activities to the CFWO and report on the effectiveness of the SRPL Project's minimization measures to reduce incidental take of gnatcatcher.
2. SDG&E shall monitor and report the level of incidental take of Quino from construction activities to the CFWO and report on the effectiveness of the SRPL Project's minimization measures to reduce incidental take of Quino.
3. SDG&E shall monitor and report the level of incidental take of arroyo toads from construction activities to the CFWO and report on the effectiveness of the SRPL Project's minimization measures to reduce incidental take of arroyo toads.
4. SDG&E shall monitor and report the level of incidental take of FTHLs during construction activities to the CFWO and report on the effectiveness of the SRPL Project's minimization measures to reduce incidental take of FTHL.
5. SDG&E shall monitor and report the level of incidental take of gnatcatchers, Quino, arroyo toads, and FTHL during O&M activities to the CFWO annually.
6. SDG&E shall cooperate with the Wildlife Agencies in coordinating inspection and compliance monitoring of the General and Species-Specific Conservation Measures being implemented to avoid and minimize take of the species covered by this incidental take statement.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, BLM, USFS, and/or SDG&E must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above, and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1.1 Prior to initiating habitat removal in areas that may impact a substantial portion of at least one gnatcatcher territory (i.e., gnatcatcher habitat removal at or near MP-107 and at or near MP-112), the Project Biologist(s) shall conduct a single-pass survey of each project site to verify the number of gnatcatchers in the general area affected by construction activities. Surveys shall be conducted within suitable gnatcatcher habitat, and the survey for any given site conducted within 10 or less days prior to initiation of habitat removal activities at the site. The results of the survey shall be provided to the CFWO prior to initiating habitat removal at the site only if the number of gnatcatchers observed within the general area of the project sites is higher specified in the incidental take statement. Following habitat removal, at each of the sites, SDG&E shall provide the CFWO a map within 60 days showing the distribution of gnatcatchers, if any, relative to the project footprint and the Project Biologist(s) estimate of the number of gnatcatchers territories impacted by any habitat removal at the site.

1.2 SDG&E shall provide the CFWO with an annual report that includes: (a) the acreage of gnatcatcher habitat removed (i.e., cleared graded) due to project activities that year, (b) the cumulative acreage of gnatcatcher habitat removed since the beginning of project construction, and (c) any observations of gnatcatcher behavior affected by construction activities.

2.1 SDG&E shall provide the CFWO with an annual report that includes: (a) the acreage of Quino habitat removed (i.e., cleared graded) due to project activities that year, (b) the cumulative acreage of Quino habitat removed since the beginning of project construction, and (c) any observations of Quino in areas affected by construction activities, including any Quino observed killed or injured by vehicle collision.

3.1 Prior to initiating habitat removal at the stringing site near MP-71, the Kreuzkamp Construction Yard near MP-74, the Hartung Construction Yard along the San Diego River between MP-102 and MP-103, and the Helix Construction Yard near MP-105, SDG&E shall provide the results of the pre-construction arroyo toad surveys and capture/relocation efforts to the CFWO. This notification shall include the number of arroyo toads captured and translocated in association with the individual project and the cumulative arroyo toads captured and translocated as a result of the SRPL Project. If the take threshold for capture and translocation of arroyo toads at any of the four sites is reached or if death or injury of any arroyo toads is observed in association with capture and translocation or construction activities, the Project Biologist(s) will be notify the CFWO within 1 business day so that the activities resulting in take can be reviewed to determine if additional protective measures are required, and within 2 business days, submit a written report describing the incident.

3.2 For each of the project sites identified in 3.1 above, SDG&E shall notify the CFWO within 30 days of completing removal of arroyo toad habitat. This notification shall be provided each time a project is completed and include the impacts to arroyo toad habitat resulting from the individual project, the cumulative impacts to arroyo toad habitat from completed projects, and any incidental observations of arroyo toads and/or their behavior in relation to the habitat removal.

3.3 SDG&E shall provide the CFWO with an annual report that includes: (a) the acreage of arroyo toad habitat removed (i.e., cleared graded) due to project construction activities that year, (b) the cumulative acreage of arroyo toad habitat removed since the beginning of project construction, and (c) any observations of arroyo toads in areas affected by construction activities, including any arroyo toads observed killed or injured by construction activities.

4.1 SDG&E shall provide the CFWO with an annual report that includes: (a) the acreage of FTHL habitat removed (i.e., cleared graded) due to project activities that year, (b) the cumulative acreage of FTHL habitat removed since the beginning of project construction, and (c) any observations of FTHL in areas affected by construction activities, including any FTHL observed killed or injured by construction activities.

5.1 SDG&E shall provide the CFWO with an annual report describing any O&M activities that resulted in removal of habitat in gnatcatcher, Quino, arroyo toad, and FTHL habitat. The report shall include the amount of habitat impacted for each species, a description of any minimization measures implemented, and information on observations of the species in the action area, including incidental take of the species.

5.2 SDG&E will contact CFWO immediately if they are given direction by a Fire Marshall and/or Fire District to clear habitat along the SRPL to address fire prevention and management concerns. The Wildlife Agencies will be allowed to coordinate and be integral to any discussions concerning the need and/or the locations of the habitat removal and to provide additional recommendations to minimize take of the listed species covered by this incidental take statement.

6.1 The Wildlife Agencies shall be allowed access to construction and O&M sites within the action area for inspection and compliance purposes, subject to 24-hour advance notice to SDG&E.

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 beyond the General and Species-Specific Conservation Measures that will be implemented as an integral part of the SRPL Project.

REINITIATION NOTICE

This concludes formal consultation on the proposed action. 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 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.

This conference opinion for FTHL and proposed arroyo toad critical habitat may, upon written request from the BLM and USFS, be adopted as a biological opinion if the FTHL is listed or proposed critical habitat becomes designated, provided that no significant new information is developed for the FTHL or proposed critical habitat, and no significant changes are made to the Federal action.

If you have any questions or comments concerning this biological or conference opinion, please feel free to contact Karen Goebel or Eric Porter of my staff at (760) 431-9440.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim A. Bartel". The signature is fluid and cursive, with a large initial "J" and "A".

Jim A. Bartel
Field Supervisor

cc:
Sean Skaggs, SDG&E
Don Haines, SDG&E
Ed Pert, CDFG, Region 5, San Diego
Erin Wilson, CDFG, Region 6, Alamos

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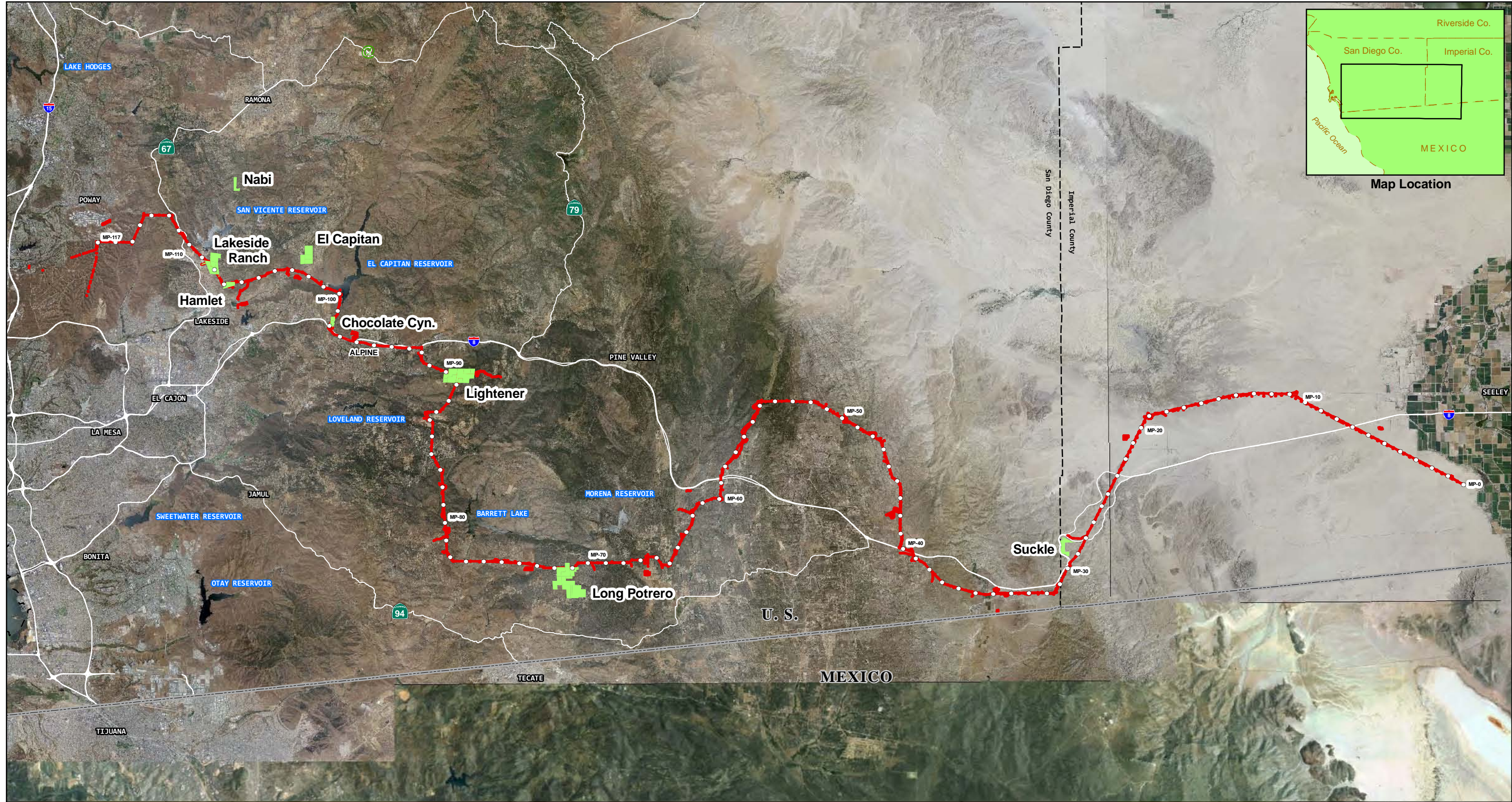
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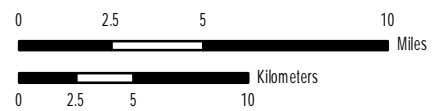


FIGURE 1.
Sunrise Powerlink project action area



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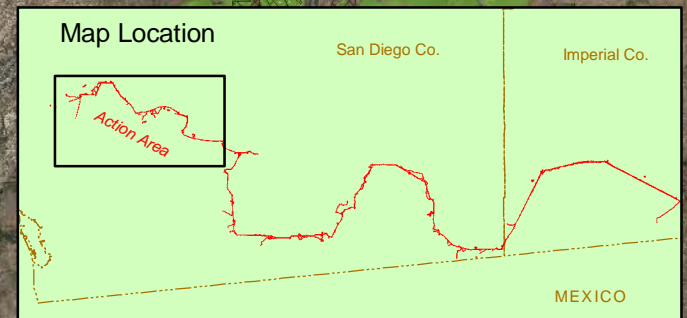
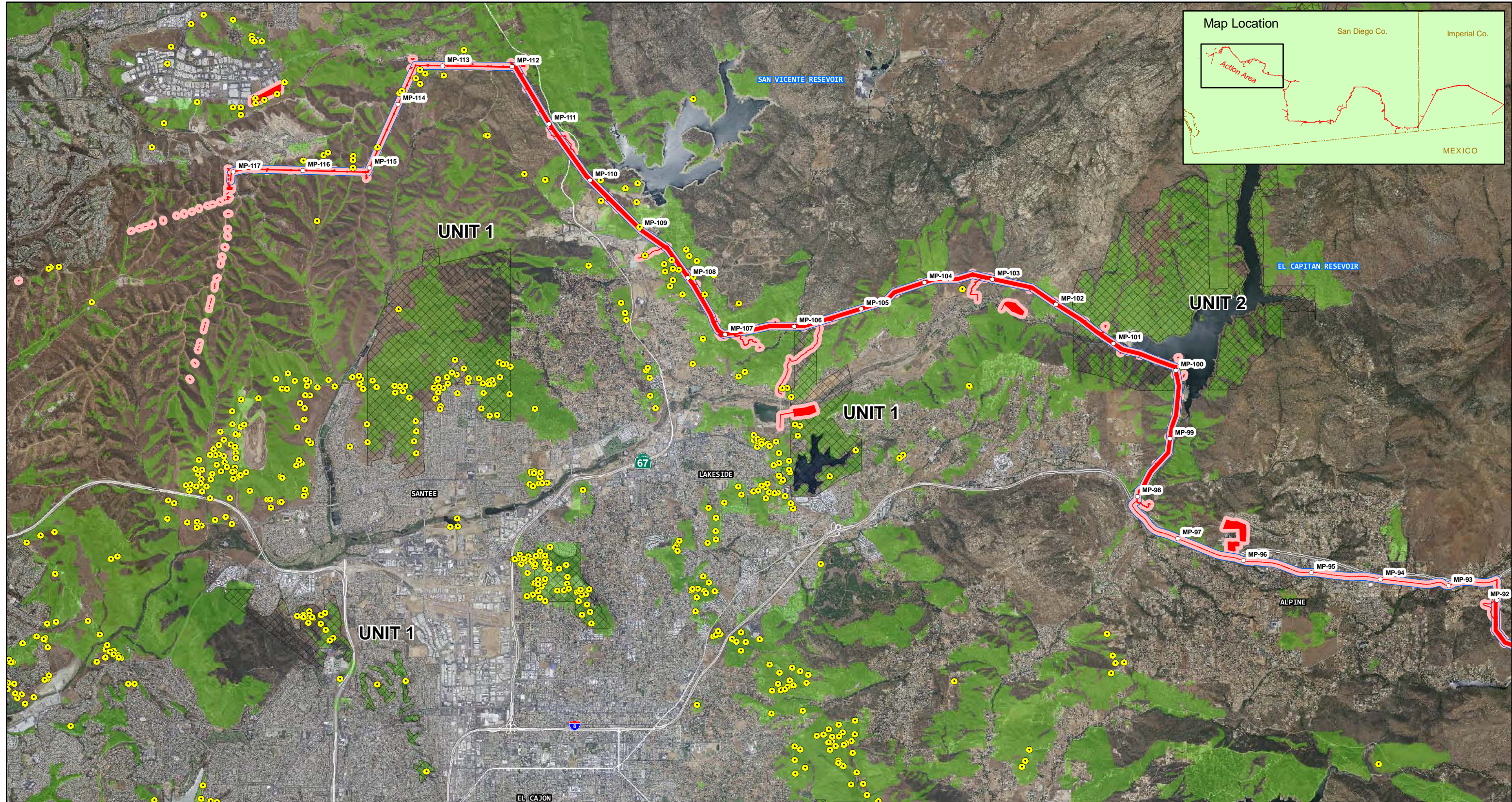
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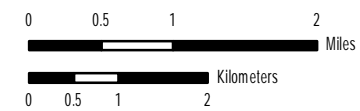
- Action Area
- HAP Parcels
- Milepost
- County Line
- International Border



FIGURE 2.
 Action area and distribution of coastal California gnatcatcher



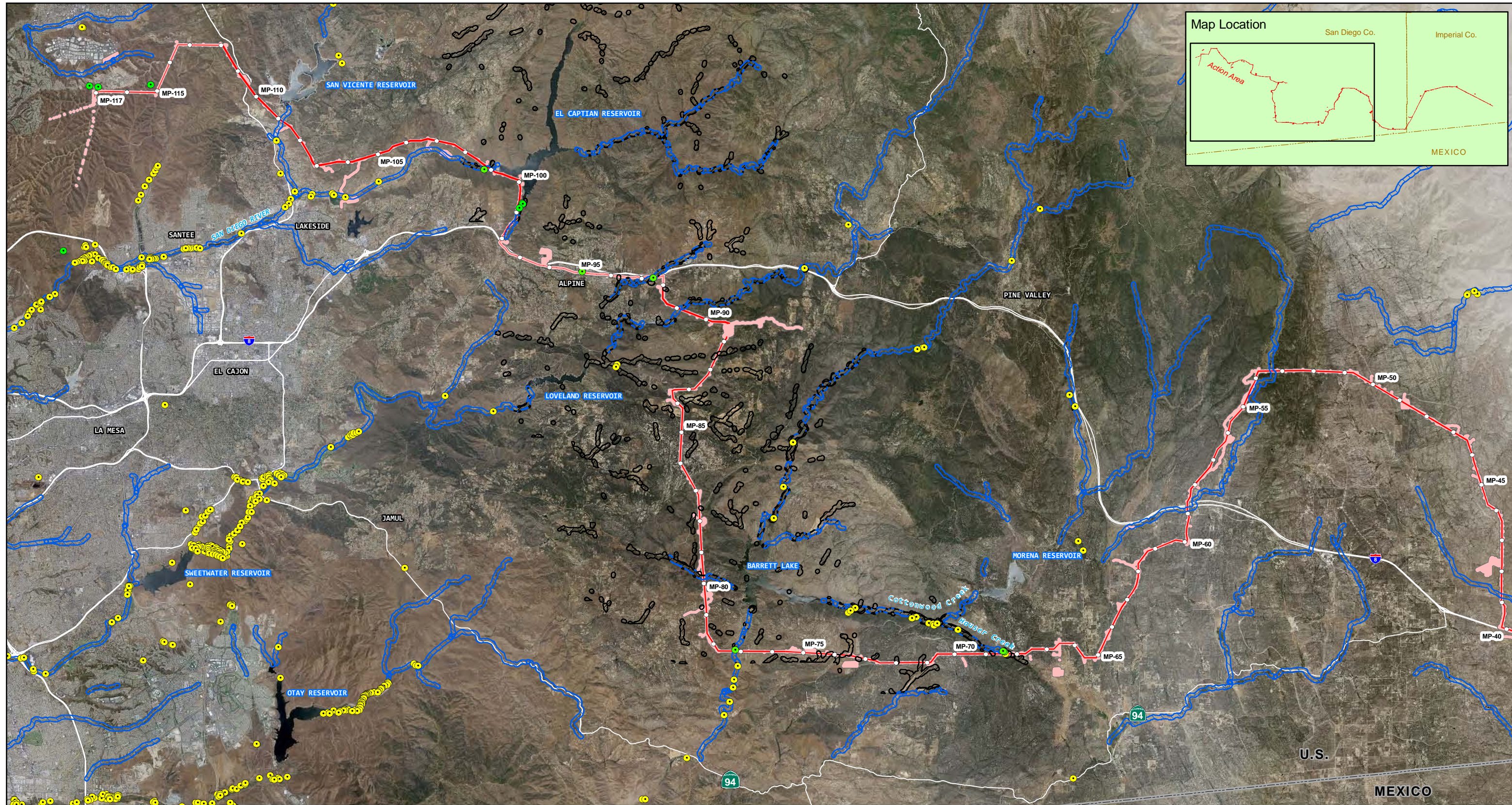
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- Coastal California Gnatcatcher Occurrence Data
- Milepost
- impacts_ground_project_mod
- Project Alignment (ROW, temp. & perm. impacts)
- Action Area
- ▨ California Gnatcatcher Critical Habitat
- California Gnatcatcher Suitable Habitat



FIGURE 3.
 Action area and distribution of least Bell's vireo



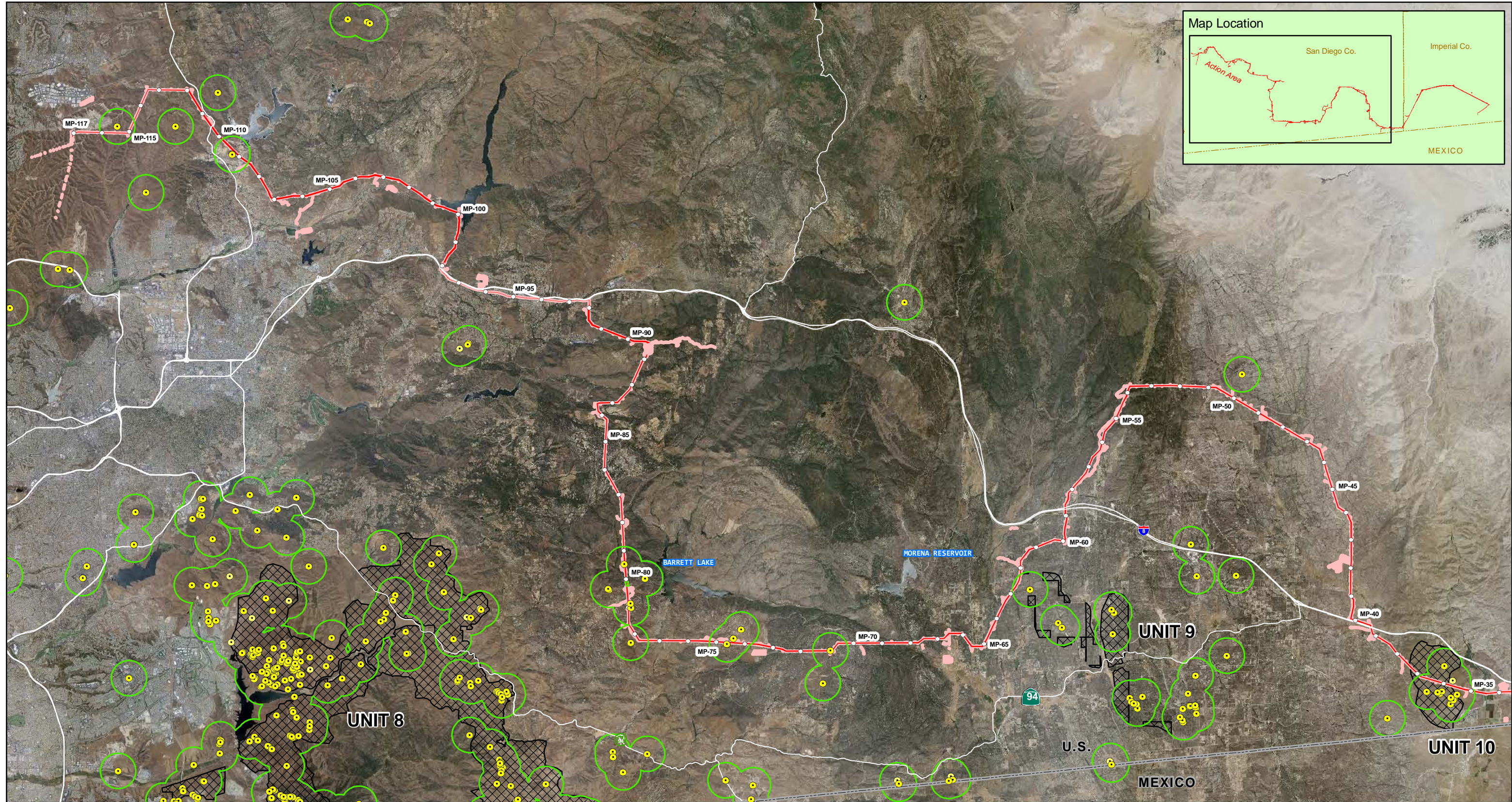
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- Project Alignment (ROW, temp. & perm. impacts)
- Action Area
- USFS LBV Model
- USFWS LBV Model
- LBV Occurrence Data (Agency)
- LBV Occurrence Data (2009-2010 Surveys)
- Milepost



FIGURE 4.
 Action area and distribution of Quino checkerspot butterfly



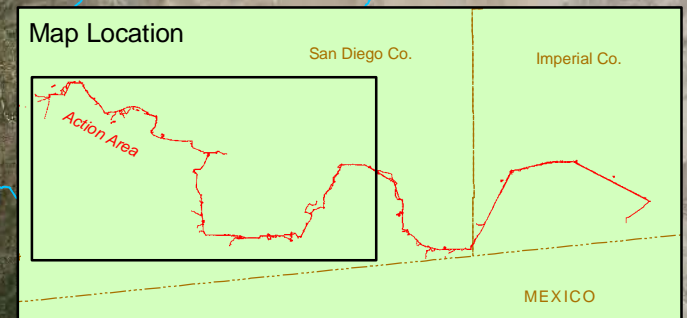
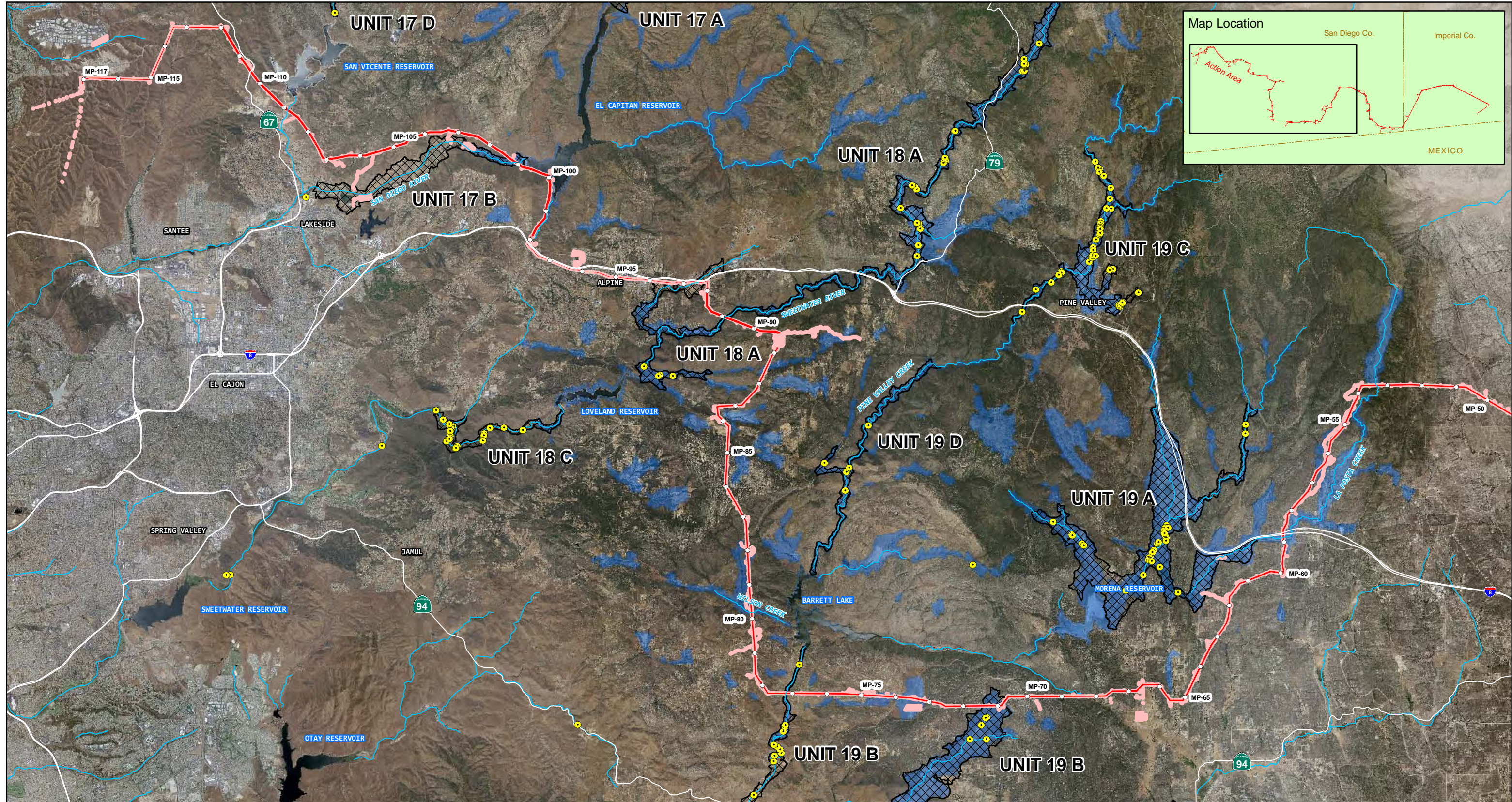
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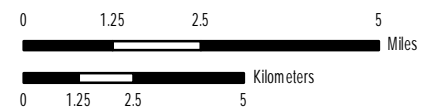
- Quino Occurrence Data
- Milepost
- International Border
- ◻ Quino Occupied Habitat
- Project Alignment (ROW, temp. & perm. impacts)
- Action Area
- ▨ Quino Critical Habitat



FIGURE 5.
 Action area and distribution of arroyo toad



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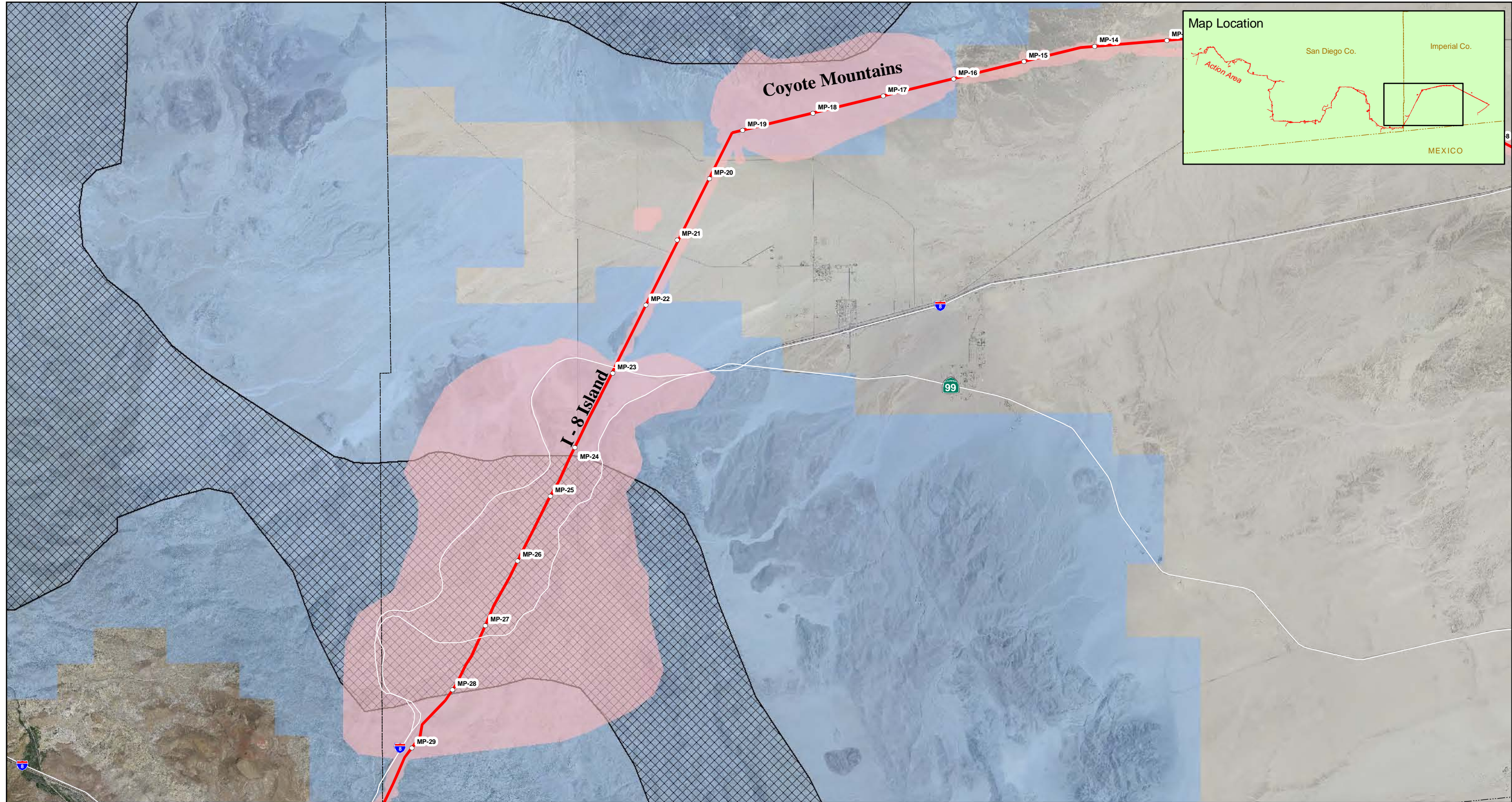


- Project Alignment (ROW, temp. & perm. impacts)
- Action Area
- Arroyo Toad Proposed Critical Habitat
- US Forest Service Habitat Model
- Arroyo Toad Occurrence Data
- Milepost

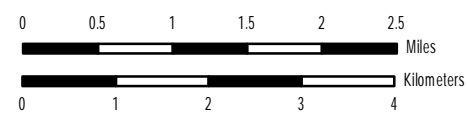


FIGURE 6.

Action area and peninsular bighorn sheep critical habitat



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 DATA SOURCE: FWS, CASIL, SDG&E
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- Project Alignment (ROW, temp. & perm. impacts)
- Action Area
- Peninsular Bighorn Sheep Critical Habitat
- Peninsular Bighorn Sheep Occupied Habitat
- County Line
- Milepost