FINAL

MANAGEMENT INDICATOR SPECIES ASSESSMENT FOR THE SUNRISE POWERLINK PROJECT IN THE CLEVELAND NATIONAL FOREST

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SECTION 1.0 – INTRODUCTION

The purpose of this assessment is to evaluate the potential effects of the Sunrise Powerlink Project (SRPL; Project) on Cleveland National Forest (CNF) Management Indicator Species (MIS) identified in the Land Management Plan (LMP) for the southern California forests (U.S. Department of Agriculture [USDA] Forest Service 2005). A Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) (Aspen 2008) for the Project was prepared and issued in October 2008 by the California Public Utilities Commission (CPUC) and the U.S. Bureau of Land Management (BLM), which acted as lead agencies in the review of the Project with the U.S. Forest Service (Forest Service) participating as a cooperating agency. Following issuance of the FEIR/EIS, the CPUC and BLM approved selection of a southern route for the Project, identified in the FEIR/EIS as the Final Environmentally Superior Southern Route (ESSR). This report assesses the ESSR of the Project as identified in the FEIR/EIS and since modified to avoid and minimize project impacts through implementation of mitigation measures and Forest Service comments and requests. Monitoring and evaluation of appropriate indicators are necessary for the Forest Service to ensure appropriate adaptive management of the forest. On a forest level, evaluation requires that current habitat conditions be compared against baseline conditions in existence at the time the LMP was adopted. Making such comparisons on the scale of an entire National Forest is prohibitively difficult, given the large diversity of vegetation communities, habitats, and species within the forest. It is possible to instead monitor individual species (in this case, MIS), their populations, and their habitat trends which accurately reflect the effects of resource management activities. This analysis concludes that the proposed Project will not threaten MIS viability on the CNF.

SECTION 2.0 – PROJECT DESCRIPTION

The ESSR for the Project would extend approximately 120 miles between the existing Imperial Valley Substation in El Centro and the Sycamore Canyon Substation in the City of San Diego. The Project would also include a new Modified Route D Substation (MRD or Suncrest Substation) and other system modifications. The ESSR would cross the CNF as depicted in Appendix A. A full description of the route is provided in the Executive Summary of the FEIR/EIS (Aspen 2008).

The proposed 500 kilovolt (kV) ESSR would enter the CNF at approximately milepost (MP) 53 and extend approximately eight miles within the CNF to MP 61. At MP 61, the transmission line right-of-way (ROW) leaves the CNF to cross private and BLM-managed lands for approximately 17 miles to MP 78, where it re-enters the CNF. From MP 78, the ROW extends through a mix of USFS and private lands to enter the new Suncrest Substation at MP 89 on private land. The 200-foot wide, 500 kV ROW occupies a total of approximately 17 linear miles within USFS land from the eastern end of the CNF to the proposed Suncrest Substation.

Leaving the Suncrest Substation, the proposed double circuit 230 kV line would be contained within a 300-foot-wide easement, except at underground portions where the ROW would be 60-feet wide or in Franchise. This portion of the transmission line traverses BLM, CNF, and private lands in a northwesterly direction for approximately 28 miles from the Suncrest Substation to the Sycamore Canyon Substation (MP 89 to MP 117). From the Suncrest Substation west to the Sycamore Canyon Substation, the proposed ROW is within USFS lands for no more than two of the 28 miles. In total, the ESSR would cross a total of approximately 19 miles of USFS lands within the CNF.

2.1. PROJECT CONSTRUCTION AND O&M METHODS AND EQUIPMENT

The modified Project ROW, including placement of other project features (e.g., roads, work areas, etc.) has been designed and engineered in close coordination with the USFS, including implementation of specific mitigation measures (such as routing modifications) during the project design phase to reduce or eliminate biological impacts within the CNF. A total of 77 transmission towers will be constructed within the CNF, including approximately 17 designated conventionally constructed towers and 52 towers that will be constructed and serviced with helicopters. In addition, eight towers are located along existing roads in the CNF that could provide potential access for conventional construction, but these towers may instead be constructed using helicopter construction. Approximately 2.1 miles of new access roads will be created to facilitate construction and O&M activities at conventional and helicopter-serviced structures on USFS lands.

A brief summary of the project construction and O&M activities for both conventional and helicopter towers is included below.

2.1.1 Conventional Construction

Conventional construction methods will be utilized on USFS lands for approximately 17 towers, as well as for establishing spur roads to conventional towers, completing planned existing access road improvements within USFS lands, and preparing two construction yards and 15 stringing sites for project use. Equipment used for conventional construction is anticipated to include grading equipment (e.g., graders, dump trucks, backhoes, end loaders, bulldozers), as well as tractor trailers for delivering equipment and steel to tower sites, boom cranes for tower erection, cement trucks for tower foundation pours, and crew trucks and utility trailers for transporting personnel and hand tools.

Access to tower sites that will be conventionally constructed will include use of permanent existing access roads within the CNF, and short spur roads will be established to the tower pads from the nearest existing road. A 200' by 200' temporary work area will be established at each tower site which will include a 100' by 100' structure pad area and a 35' by 75' permanent construction and maintenance area. The permanent tower footings will occupy a 40' by 40' area at the center of the structure pad. Grading or crushing of existing vegetation with the temporary work area will be used to establish the temporary pad depending on site conditions. The structure pad area and maintenance area will be graded, surfaced with dirt and maintained for the duration of the construction (and O&M) period. Heavy construction equipment including bulldozers, graders, end loaders, and dump trucks are anticipated to be utilized to establish the temporary and permanent tower pads.

Conventional towers will begin with foundation forming within the structure pad area. Cement trucks will then pour the foundations, a boom crane will be positioned on the maintenance area, and tower steel will be delivered to the site by tractor trailers. The towers will be assembled in sections within the temporary work area, hoisted by the boom crane onto the foundation, and assembled. Tower assembly from the finished foundation will be started and completed in a one day period, with an estimated five to eight structures being fully assembled each day. The entire construction process is estimated to require up to approximately three weeks per tower structure.

2.1.2 Conventional Equipment O&M Activities

Following completion of project construction, O&M activities will be performed at all conventional tower sites on USFS lands as follows:

1) Annual ground maintenance inspections of all project towers. These will be completed with a crew truck and/or utility service truck.
2) Annual ground safety inspections of a minimum of 10% of the Sunrise Powerlink project towers will be completed (approximately 43 towers per year based on May 2010 project designs). The requirements of this mitigation measure will likely be met by coordinating these safety inspections with the annual maintenance inspections.
3) Emergency inspections or repairs when any problems within the Project ROW are suspected or reported. These inspections and repairs will be completed with a crew truck and/or utility service truck, and may require heavy equipment use depending upon the emergency.

2.1.3 Helicopter Construction

Helicopters will be used during the construction on USFS lands for approximately 52 towers. An additional eight structures may be constructed with helicopters if conventional construction is deemed infeasible using existing roads. A flight plan will be prepared and submitted to the FAA and the USFS prior to initiating work on the project. For safety, helicopters will not fly for the project construction or O&M activities during periods of inclement weather including sustained winds exceeding 23 miles per hour, precipitation (rain, snow, and sleet), or periods of reduced visibility due to fog or dust storms. During project construction, heavy-, medium-, and light-duty helicopters will all be utilized: heavy-duty helicopters will be used to lift tower segments and materials from construction yards to the tower locations, but will not land at tower sites; medium- and light-duty helicopters will be used to transport construction crews, monitors, equipment, and materials from the construction yards to the tower sites and will land at designated TSAPs. These helicopters will also be used for tower inspections during and

after installation, and wire stringing after installation. Inspections and wire stringing will not require landing at the individual tower sites.

At tower sites where helicopter construction methods will be used, a 100' diameter area will be cleared for the tower staging area pad (TSAP). The vegetation will be cleared to ground level using hand-held equipment. Ground pads with 40' diameter area in the center of the 100' diameter area referenced above will be leveled in areas with less than 15% slope to allow safe landing zone for helicopters. Ground pads are utilized for the majority of landing sites. Where topography is greater than 15% slope raised platforms will be constructed on steel/concrete legs using conventional or micropile foundations. The platform will consist of a metal deck with steps providing worker access to and from the platform. Helicopter platforms will be classified as Temporary Helicopter Landing Sites, and should not be subject to the heliport marking requirements described within the California Code of Regulations, Title 21 Sections 3525 through 3560, Airport and Heliports. This platform design/construction method will accommodate the varying terrain of the project area and will minimize the amount of ground disturbance required to construct the platform. These platforms will be permanent and will be used for on-going maintenance activities.

A typical helicopter-serviced structure construction period in the USFS would begin with crews at each structure location for several weeks completing micropile drilling, grouting, micropile tension testing, and foundation cap forming and pouring. Each work day of this period would require several trips by a light- or medium duty helicopter to deliver crews and equipment to the tower sites and return crews at the end of the day to the construction yard(s). Once the foundation work is complete, heavy-duty helicopters will then require multiple trips to tower sites to complete tower construction in stages; the lower legs will be delivered to the site, attached to the foundation and secured by temporary guy wires. Then tower segments will be delivered in sections weighing less than 15,000 lbs., and attached by ground crews. Tower assembly from the finished foundation will be started and completed in a one day period, with an estimated five to eight structures being fully assembled each day.

2.1.4 Helicopter O&M Activities

Following completion of project construction, O&M activities will be performed at all tower sites as follows:

1) Annual ground maintenance inspections of all project towers. These will be completed with a light- or medium-duty helicopter, and will require transporting crew and equipment to the tower sites and landing at designated TSAPs.
2) Annual ground safety inspections of a minimum of 10% of the Sunrise Powerlink project towers will be completed (approximately 43 towers per year based on May 2010 project designs). The requirements of this mitigation measure will likely be met by coordinating these safety inspections with the annual maintenance inspections, including helicopter-serviced structures.
3) Annual infrared inspections of the transmission wires. These will be conducted by a light-duty helicopter and will not require landing at individual TSAPs.
4) Emergency inspections or repairs when any problems within the Project ROW are suspected or reported. These will be completed with a light- or medium-duty helicopter, and will require transporting crew and equipment to the tower sites and landing at designated TSAPs.

2.2. PROJECT IMPACT SUMMARY

Table 1 below summarizes the Project impacts to vegetation communities, and Table 2 summarizes the total ground disturbance resulting from project construction, including permanent and temporary impacts on USFS-administered lands. The Project transmission line corridor within USFS lands contains approximately 17.15 linear miles of 200-foot-wide ROW and 1.86 miles of 300-foot-wide ROW for a total of 19.01 miles, or 437.07 acres of Project ROW. When including associated ancillary facilities located on CNF owned/managed lands, the total area encompassed by the Project ROW is 541.80 acres. Additionally, the Project would also traverse approximately 312.93 acres of other public and private lands within the CNF Congressional Boundary,

There are 1.15 miles (2.73 acres) of new access roads within the ROW and 0.95 miles (1.17 acres) outside the ROW for a total of 2.10 miles (3.90 acres) of new access roads located within the CNF Congressional boundary. The standard width of these roads is typically 14 feet wide in straight sections of the road and up to 20 feet wide on curves to allow large turning-radius vehicles. For purposes of calculating impacts, it is assumed that the Project ROW will be 14 feet wide with an additional six feet for curves and manufactured slopes. There are 19.24 acres of construction yards and 18.36 acres of stringing sites. Temporary construction areas would be re-vegetated once the Project is constructed. Construction of the Project is expected to be completed within two years of ground breaking. The term of the Project ROW easement is expected to be 50 years commencing upon energizing of the line. The mitigation measures will continue to be carried out during the 50-year operation and maintenance (O&M) period covered under the easement grant.

As noted above, the Project ROW, including associated project features, in the CNF portion (CNF owned/managed lands) total 541.80 acres. The Project will result in approximately 43.96 acres of permanently impacted area and 48.28 acres of temporarily impacted area. Therefore, the majority (449.56 acres, approximately 83%) of the Project ROW within USFS-managed lands in the CNF will not be directly impacted by the Project. Note that some of the permanent and temporary impacts will be to developed or previously disturbed lands. Nevertheless, some of the area impacted by the Project may be occupied by MIS. These impacts are analyzed for each species below.

Table 1. Impacts to Vegetation Communities on USFS Lands in the CNF

Vegetation Communities	Permanent Impacts (acres)	Temporary Impacts (acres)	TOTAL IMPACTS (acres)
Non-Native Vegetation, Developed Areas, and Disturbed Habitat			
Developed	11.44	0.21	11.65
Disturbed habitat	0.10	0.00	0.10
Subtotal	**11.54**	**0.21**	**11.75**
Coastal and Montane Scrub Habitats			
Diegan coastal sage scrub	0.61	0.0	0.61
Diegan coastal sage scrub – inland form - disturbed	2.04	0.85	2.89
Subtotal	**2.65**	**0.85**	**3.50**
Grasslands and Meadows			
Non-native grassland	0.25	1.20	1.45
Subtotal	**0.25**	**1.20**	**1.45**
Chaparrals			
Chamise chaparral	7.08	7.05	14.12
Chamise chaparral – burned	1.96	3.30	5.25
Northern mixed chaparral	12.43	32.08	44.51
Northern mixed chaparral - disturbed	0.18	0.0	0.18
Scrub oak chaparral	0.41	0.00	0.41
Southern mixed chaparral	6.94	2.50	9.44
Subtotal	**28.99**	**44.93**	**73.92**
Woodlands and Forests			
Coast live oak woodland	0.44	1.09	1.54
Subtotal	**0.44**	**1.09**	**1.54**
Herbaceous Wetlands, Freshwater, and Streams			
Non-vegetated Channel	0.06	0.00	0.06
Subtotal	**0.06**	**0.00**	**0.06**
Riparian Forests and Woodlands			
Southern coast live oak riparian forest	0.03	0.00	0.03
Subtotal	**0.03**	**0.00**	**0.03**
TOTAL	**43.96**	**48.28**	**92.24**

Table 2. Acreage Summary of Ground Disturbance on USFS Lands in the CNF

Disturbance Type	Permanent Impact (acres)	Temporary Impact (acres)	Total Acres Impacted
Access Road	3.54	0.35	3.89
Access Road Existing- Major	10.71	0.00	10.71
Access Road Existing- minor	1.52	0.00	1.52
Construction Yard	0.00	19.28	19.28
Footings	0.14	0.00	0.14
Grading	1.40	0.00	1.40
Guard Areas	0.00	0.08	0.08
TSAP	8.70	0.00	8.70
Pad 100x100	16.42	0.00	16.42
Pad 35x75	1.53	0.00	1.53
Pad Temp	0.00	10.21	10.21
Stringing site	0.00	18.36	18.36
Total	**43.96**	**48.28**	**92.24**

2.3. METHODS FOR VEGETATION MAPPING AND IMPACT ANALYSIS

2.3.1 GIS Vegetation Analysis

A Geographic Information System (GIS) was developed with the San Diego Geographic Information Source (SANGIS) vegetation layers. These broad-scale vegetation maps of the CNF were field verified with surveys performed by Arcadis and Helix biologists and high-resolution aerial photography interpretation, and were further augmented in September 2009 by SDG&E biologists based on mapping completed in Project ROW areas where field studies had been performed. This vegetation map was used to assess the potential habitats for the selected MIS species within the CNF and the Project ROW area based on vegetation community information.

A vegetation community impact analysis utilizing the current field-reviewed engineering data for the Project was conducted. The boundaries of all permanent and temporary project features within and outside of the Project ROW within the Congressional CNF boundary were overlaid on the Project GIS vegetation mapping layers. Impacts to vegetation communities located on USFS lands were calculated and are presented in this MIS Assessment. Appendix A contains a mapbook displaying the GIS spatial information for selected plant and wildlife species analyzed in this MIS. All plant and wildlife species source data was projected in State Plane, North American Datum 1983 (NAD 83), California Zone 6, in U.S. feet. Overlapping features within and between the permanent and temporary impacts were removed so that each impact type was categorized as either a permanent or temporary impact.

Construction of the Project would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features, such as towers or permanent access roads) impacts to vegetation communities. All ground impacts for the Project engineering components were grouped together using the following hierarchy:

Permanent Impacts

- Structure Footings
- Helicopter TSAPs with a 100' diameter from the center.
- Existing Roads – Center lines of roads were buffered:
    - Minor improvements to existing roads buffered at: 5'
    - Major improvements to existing roads buffered at: 10'
- Access Roads (to be constructed)
- Permanent Maintenance Areas (typically 35'x75')
- Grading
- Structural Pad Areas (100'x100' pads at each structure);

Temporary Impacts

- Guard Structure Areas
- Temporary Work Areas (200' x 200')
- Wire Stringing Sites
- Construction Yards
- Temporary Access Roads (to be constructed)
- Temporary Improvements to Existing Roads
    - Temporary minor improvements to existing roads buffered at: 5'.

2.3.2 Regional and Statewide Sensitive Species Data Analysis

In addition to a GIS spatial analysis of the Project disturbance footprint and resulting vegetation community impacts, regional and state-wide sensitive plant and wildlife species occurrence data were assembled in a GIS database, and overlaid with the Project ROW information. A variety of data sources from county-wide conservation planning data to CNF-specific species occurrence data were available for this assessment. Available information utilized included: 1) broad-scale vegetation mapping data for San Diego County; 2) federal proposed and designated-critical habitat areas; 3) sensitive plant and wildlife species distribution data assembled for the Project DEIR/EIS and FEIR/EIS; 4) plant and avian species distribution data from recently completed, comprehensive San Diego County "atlas" projects; 5) USFS sensitive plant and wildlife species occurrence data and modeled habitat data; and 6) USFS vegetation community mapping for the CNF. Specific data sources that were used for this MIS analysis include:

- California Natural Diversity Database (CNDDB) (California Department of Fish & Game, accessed November 2009)
- Critical Habitat Designations, U.S. Fish & Wildlife Service (current to January 2010)
- CNF Sensitive Species Data, U.S. Fish & Wildlife Service (acquired March 2009)
- CNF Modeled Suitable Habitat Data (acquired March 2009)
- DEIR/EIS Sensitive Species (Aspen 2008)
- FEIR/EIS Sensitive Species (Aspen 2008)
- San Diego Natural History Museum Plant Atlas, 2008
- San Diego Natural History Museum Bird Atlas, 2010
- Remote Sensing Lab Vegetation Data, USFS (acquired March 2009)

2.3.3 Project Specific Survey Data Analysis

A GIS spatial analysis of the Project vegetation community and regional biological occurrence data was overlaid with data from focused listed plant and wildlife species surveys that have been conducted for the Project within the CNF over a period of four years, beginning in 2006 and continuing through 2009. The data provide Project-level vegetation mapping, jurisdictional wetlands and waters mapping, and location data for state- and federally-listed plant and wildlife species, rare plants (CNPS Lists 1 through 4), RFS plant and wildlife species analyzed for the Project biological evaluation (BE), and incidental sighting data of plants and wildlife species. The data extend outside of the CNF and include western San Diego and eastern Imperial Counties. This tool can be supplemented with additional information from surveys prior to Project construction that may be required under mitigation measures. The Project-level data included in the MIS analysis include:

- 2006 Rare Plant Survey Report (Jones & Stokes, Arcadis)
- 2007 Arroyo Toad Focused Survey Report (Jones & Stokes, Arcadis)
- 2007 Rare Plant Survey Report (Jones & Stokes, Arcadis)
- 2008 Rare Plant Survey Report (Jones & Stokes, Arcadis)
- 2009 Jurisdictional Delineation Survey Data (WRA, ICF Jones & Stokes)
- 2009 Rare Plant Survey Report (RECON)
- 2009 Arroyo Toad Protocol Survey Report (RECON)
- 2009 Riparian Birds Survey Report (RECON)
- 2009 Cleveland National Forest Sensitive Species Survey Data (Chambers Group)
- 2009/2010 Biological Monitoring Incidental Observations Data (Chambers Group)

SECTION 3.0 – METHOD OF EFFECTS ANALYSIS

Project effects on MIS are generally analyzed through the environmental review process under the National Environmental Policy Act (NEPA). This process includes assessing the direct, indirect, and cumulative impacts of a project on habitats and species. An MIS analysis was conducted for the Sunrise Final EIR/EIS, and this analysis incorporates that MIS analysis as well as provides updated data based on modifications to the Project since release of the Final EIR/EIS.

3.1. ANALYSIS AREA

The CNF boundary includes portions of Orange, Riverside, and San Diego Counties and is composed of three Ranger Districts (Descanso, Palomar, Trabuco), which together contain more than 460,000 acres in Southern California and extend from the north end of the Santa Ana Mountains to the southern tip of the Peninsular Mountains on the U.S./Mexico international border. The Project will take place within the Descanso District of the CNF, which is the most southerly of the three ranger districts and occurs entirely within San Diego County. The Descanso District contains approximately 214,300 acres of lands under management by the USFS (or approximately half of the CNF lands). Included in the Descanso District is the 13,480 acre Pine Valley Wilderness, the 7,457 acre Hauser Creek Wilderness, watersheds for Lake Morena, Barrett Lake, Loveland, and El Capitan Reservoirs. MIS are monitored and the existing data for MIS and their associated habitats are evaluated by the USFS at the forest-wide scale.

Direct effects to MIS would result from habitat destruction, habitat alteration, and/or direct injury or mortality of individuals during project construction or O&M activities. Direct effects of the Project on MIS have been determined by an analysis of the Project impact areas relative to the known distribution areas of the MIS within and outside of the CNF Congressional boundary. The permanent or temporary loss of potentially suitable habitat areas for MIS (e.g., associated vegetation communities) within the Project ROW, including associated facilities, and construction or O&M activities that may have wider ranging effects outside of direct impact areas (e.g., heavy equipment traveling on access roads within and outside of the Project ROW, helicopters flying within and adjacent to the Project ROW, etc.) have been included in this analysis.

Indirect impacts to MIS have been determined through a review of Project construction and O&M activities likely to occur on USFS-managed lands, and an analysis of the potential indirect effects to occur within and adjacent to the Project's direct impact areas. An indirect analysis area was generally defined as the area encompassing approximately 660 feet on both sides of the outer edge of the Project ROW within and adjacent to the CNF Congressional boundary (approximately from MP 53 to MP 102), as well as around wire stringing sites, staging yards, and access roads located outside of the transmission line alignment. The average width of the area analyzed for indirect effects within and adjacent to the CNF Congressional boundary extends about 1,600 feet (approximately 1/3 mile) centered on the transmission line (i.e., 200' to 300' ROW and 660' from both sides of the Project ROW). The indirect impact analysis area as described above contains approximately 7,559.29 acres within the CNF Congressional boundary, of which 4,672.98 acres are USFS-managed lands. Additionally, when considering other public and private lands within 660' (outside of the ROW adjacent to the Congressional boundary, approximately 5,677.83 acres), the indirect impact analysis area increases to a total of approximately 13,237.12 acres. While only 541.80 acres of land administered by the USFS occurs within the Project ROW, this larger area was evaluated to ensure a conservative analysis of effects.

To assess the potential cumulative effects of the Project, this analysis updates that conducted in the FEIR/EIS and considers the Project's direct and indirect effects when added with the effects resulting from present and reasonably foreseeable projects selected from the following sources that are currently available:

1. List of cumulative projects identified in the 2008 SRPL FEIR/EIS;
2. USFS Schedule of Proposed Action (SOPA) projects for April 2010 to June 2010.
3. BLM list of cumulative projects that are adjacent to USFS land.

Any projects whose applications have been withdrawn or which have been idle for one year or more have been removed from the analysis as they are no longer considered reasonably foreseeable. Projects that are partially or wholly complete (i.e., ground disturbing activities completed) were considered as part of baseline conditions for the cumulative analysis. Also, only projects reasonably foreseeable to occur within the next 10 years remained on the list. The remaining list contained in Appendix C identifies projects that are presently being planned or constructed, as well as those where the initial scoping process has not yet been completed that were determined to have potential impacts to MIS species.

To accurately determine a project's status as defined above, SDG&E reviewed the current USFS SOPA for the Descanso District, the U.S. Department of the Interior Bureau of Land Management (BLM) website, the County of San Diego Land Use and Environment Group KivaNet System, the State of California Office of Planning and Research CEQAnet database, and local planning commission meeting minutes for small communities in the analysis area (i.e., Alpine, Descanso, Pine Valley, Boulevard, Jacumba, etc.). Each of the projects identified from these sources were critically evaluated to determine whether and to what extend it could cumulatively impact each MIS species.

The cumulative analysis area, and the reasonably foreseeable projects considered within that area, thus varies for each of the MIS discussed below based on each species' likely home range and/or dispersal distance. The cumulative projects included in the analysis for each species are identified in the individual discussions, and Appendix C provides a matrix demonstrating which projects were used in the cumulative analysis for each species based upon the project's potential to impact each species. Cumulative projects were marked with a checkmark if the project was located within the specific species cumulative project effects analysis area identified, are in the vicinity of potentially suitable habitat, and are likely to have some effect on the species considered. If cumulative projects provided limited project information beyond project location, general project location information was used in the cumulative analysis.

3.2. MIS ASSESSMENT METHODS

The Forest Plan requires forest-scale monitoring of habitat status and trends for MIS, as discussed in Part 3, Appendix C of the LMP (USDA Forest Service 2005). Monitoring of MIS is recommended every five years to determine MIS habitat quantity (status) and whether that quantity is stable, increasing, or decreasing (trend). Habitat includes both the vegetation community in which a species occurs, and other biotic (e.g., food sources, predators) and abiotic (physical structure of the area, slope/aspect, water availability, etc.) factors. MIS habitat trends are analyzed by comparing current ecological and vegetation data with historical data collected for the forest.

Population status is a measure of the current population size of a species, whereas population trend refers to the change in population size over time. Population data for MIS are collected by private

entities as well as state and federal agencies, including the Forest Service, US Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and the US Geological Survey (USGS). Population data may be assessed by direct species counts, by observation of tracks or scat, monitoring of hunting data, and other means.

Within the CNF, the impacts of a project on habitats, plants, and animals are typically assessed by monitoring the effects on MIS using habitat status and trend criteria, and population status and trend criteria. Both types of data were utilized for the Project MIS assessment, as summarized below.

3.2.1 Habitat Status and Trend

The Forest Plan requires forest-scale monitoring of habitat statuses and trends for MIS. Habitat status is the current amount of habitat on the CNF. Habitat trend is the direction of change in the amount of habitat between the time the Forest Plan was approved and the present. Habitats are the vegetation types (e.g., mixed conifer forest) and/or ecosystem components (e.g., cliffs or lakes) and any special habitat elements (e.g., snags) required by an MIS for breeding, cover, and/or feeding. Habitat relationships for plant MIS are identified individually. MIS habitat trends are monitored using ecological and vegetation data. These data include spatial, ecological, and vegetation layers created from remote sensing imagery obtained at various points in time, which are verified using photo-imagery, on-the-ground measurements, and tracking of vegetation-changing actions or events. The Project MIS assessment utilizes habitat status and trend data that were available from USDA Forest Service for the CNF (2007), including the Descanso District and the Project ROW, and Project-level habitat status data from higher resolution vegetation community mapping completed for the Project.

3.2.2 Population Status and Trend

Population monitoring requirements for the MIS of the CNF are identified in the Monitoring Plan of the LMP (USDA Forest Service 2005). This document requires monitoring of population statuses and trends for select MIS. There are many types of population data, and the LMP also identifies the type of population monitoring data required for each MIS. All population monitoring data are collected and/or compiled at the project scale. Population status is the current condition of the MIS related to the type of population monitoring data (population measure) required in the LMP for that MIS. Population trend is the direction of change in that population measure over time. Population data includes presence data, which is collected using a number of direct and indirect methods. These methods include population surveys, bird point counts, tracking number of hunter kills, and counts of species sign such as deer pellets. The Project MIS assessment utilizes population status and trend data that were available from USDA Forest Service for the CNF (2007), including the Descanso District and the Project ROW, as well as public and private population status and trend data that include Project areas outside of the CNF in San Diego and Imperial Counties. The USDA Forest Service data also were supplemented with Project-level population status data from focused species survey results, as summarized below.

3.2.3 Focused Species Surveys

In addition to the habitat and population status and trend data utilized for this MIS assessment, focused plant and wildlife species surveys also were conducted along the Project ROW (which includes the transmission line alignment, access roads, staging areas, etc.) within USFS lands in the CNF. USFWS protocol surveys were conducted for the California spotted owl (*Strix occidentalis occidentalis*) and arroyo southwestern toad (*Bufo californicus*) on USFS lands on the CNF in 2009, Engelmann oak (*Quercus engelmannii*) trees were mapped within and adjacent to the Project ROW, and incidental

sightings of song sparrow (*Melospiza melodia*) were made during the focused riparian bird surveys conducted in and adjacent to the Project ROW area in 2009. In addition to the surveys summarized below, incidental observations of mule deer (*Odocoileus hemionus*) and mountain lion (*Puma concolor*) were made in the CNF during project monitoring activities and surveys completed from 2006 to 2009.

California Spotted Owl Surveys

A habitat assessment and three protocol surveys were conducted in summer 2009 for California spotted owl (spotted owl) on the Project ROW within the CNF. All historic USFS, San Diego County Bird Atlas, and CNDDB data, and other sources (Unitt 1984) were analyzed for occurrences of this species within San Diego County. In order to evaluate habitat in and around the Project ROW for spotted owl, two areas were selected on USFS lands near the Project ROW along Fred Canyon Road as reference sites for this species. These locations were chosen due to their proximity to the Project ROW, and due to three observations at the first reference site in 1996 (CNDDB 2009, USDA Forest Service 2009b), and five observations at the second reference site in 1995 (CNDDB 2009, USDA Forest Service 2009b). These are the closest historic occurrences of this species along the Project ROW, and other CNF occurrences are generally located farther north and/or at higher elevations within the CNF. The characteristics of the reference sites (e.g., old growth coast live oak woodlands, very large, mature trees, plentiful dead snags and interconnected canopies, relatively wide swath of oak woodland habitat, the presence of a larger stream) were used to detail which areas of the Project ROW contained habitat suitable for spotted owls. No detections of the owl were made during the surveys.

Arroyo Toad Surveys

Habitat assessments for arroyo southwestern toad were conducted at 26 locations within and immediately adjacent to the USFS lands in the CNF in 2009. The assessments spanned the ROW and adjacent areas from San Vicente and the San Diego River east to La Posta Creek and its associated wetlands. Assessments were conducted in and adjacent to all ROW areas where potentially suitable habitat for southwestern arroyo toad was identified, including historical and recent distribution data for the arroyo toad and USFS modeled suitable and occupied habitats along the ROW area in the CNF. The habitat assessments determined that two of the 26 areas did not contain potentially suitable breeding or foraging habitat. Of the remaining 24 sites in or adjacent to the CNF, 11 did not contain surface water and surveys were not conducted in 2009 and 13 contained surface water or adjacent observations of toads and protocol surveys were completed. Arroyo southwestern toads were not detected in any of the survey areas in 2009, all of which were in or adjacent to Project permanent or temporary impact areas.

Riparian Bird Surveys

Habitat assessments and focused protocol surveys for least Bell's vireo (*Vireo bellii pusilus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) were conducted in 12 locations along the Project ROW in 2009, 11 of which occur within or adjacent to the CNF. Song sparrow observations were made during these focused surveys within seven of the survey areas, and two song sparrow observations co-occurred with riparian bird sightings. Riparian bird surveys were conducted in high elevation portions of Diabold and Antone Creeks, as well as La Posta, Cottonwood, Hauser, Wilson, and Viejas Creeks and the San Diego River.

Tree Surveys/Rare Plant Surveys

The locations of trees within the Project ROW area that may be impacted directly by ground disturbance activities associated with Project construction activities or vegetation management requirements associated with Project O&M activities were mapped in 2009/2010 and included in a GIS database. In

addition, the locations of individual Engelmann oak trees and/or the boundaries of Engelmann oak woodland within or adjacent to Project impact areas have been mapped, including occurrences on USFS lands in the CNF. Engelmann oak is a CNPS sensitive plant species and location data was collected for this species within and outside of the CNF along all proposed Project ROW alternatives in surveys beginning in 2006 and extending through 2009.

SECTION 4.0 – MIS SELECTED FOR THE PROJECT

MIS are selected because their population trends are considered indicative of the effects of management activities and as a focus for monitoring. Projects within southern California forests typically assess effects on 12 MIS (USDA Forest Service 2007), since changes in these species populations or habitats can be effectively monitored and reflect the effects of national forest management activities. These species include white fir (*Abies concolor*), Coulter pine (*Pinus coulteri*), bigcone Douglas-fir (*Pseudotsuga macrocarpa*), blue oak (*Quercus douglasii*), Engelmann oak, California black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), arroyo toad, song sparrow, mountain lion, mule deer, and California spotted owl. As shown in Table 3, six of these species occur in portions of the CNF that may be affected by the Project.

Table 3. Management Indicator Species

Species	Indicator of Management	Potential to be Affected by Sunrise Powerlink Project
White fir (*Abies concolor*)	Montane coniferous forest	Range includes portions of CNF, but the Project would not impact coniferous forest
Coulter pine (*Pinus coulteri*)	Coulter pine forest	Range includes portions of CNF, but the Project would not impact coniferous forest
Bigcone Douglas-fir (*Pseudotsuga macrocarpa*)	Bigcone Douglas-fir forest	Range includes portions of the CNF, but this species does not occur within the Project area
Blue oak (*Quercus douglasii*)	Oak regeneration	Does not occur in Project area
Engelmann oak (*Quercus engelmannii*)	Oak regeneration	Occurs in Project area
California black oak (*Quercus kelloggii*)	Oak regeneration	Range includes portions of the CNF, but this species does not occur within the Project area
Valley oak (*Quercus lobata*)	Oak regeneration	Does not occur in Project area
Arroyo toad (*Bufo californicus*)	Aquatic habitat	Occurs in Project area
Song sparrow (*Melospiza melodia*)	Riparian habitat	Occurs in Project area
California spotted owl (*Strix occidentalis occidentalis*)	Conifer/oak woodland or oak woodland	Occurs in Project area
Mountain lion (*Puma concolor*)	Fragmentation	Occurs in Project area
Mule deer (*Odocoileus hemionus*)	Healthy, diverse habitats	Occurs in Project area

Of the 12 MIS in Table 3, two species do not occur in the CNF (valley oak and blue oak) and four species do not occur in habitats that would be affected by the Project (white fir, Coulter pine, bigcone Douglas-fir, and California black oak). The remaining six MIS (Engelmann oak, arroyo toad, song sparrow, California spotted owl, mountain lion, and mule deer) have the potential to be affected by the Project.

As explained previously, forest-scale monitoring of MIS within the CNF is required every five years to determine if habitat conditions "are in a stable or upward trend." The CNF MIS report (USDA Forest Service 2007) describes how MIS monitoring requirements will be met. Monitoring strategies for MIS, as discussed in the FEIR/EIS (Aspen 2008a) for the Forest Plan (USDA Forest Service 2005), are shown in Table 4.

The CNF MIS report (USDA Forest Service 2007) also provides species accounts for each of the MIS analyzed in this assessment, including baseline data on populations and habitat within CNF as well as available data on population and habitat trends; as such, the CNF MIS report is hereby incorporated by reference in full. Additionally, the Project FEIR/EIS contains analysis of potential impacts to CNF resources, including habitats used by the MIS analyzed in this assessment, as well as an initial MIS assessment, prior to on-the-ground design changes and routine adjustments that have taken place since the issuance of the FEIR/EIS; as such, the FEIR/EIS hereby also is incorporated by reference in full.

Table 4. MIS Monitoring Strategies

Management Indicator Species	Monitoring Method	Measure
Engelmann oak	Forest Inventory Analysis data	Trends in sapling abundance
Arroyo toad	Habitat condition in selected locations	Trends in abundance, distribution, and/or habitat conditions
Song sparrow	Riparian bird species point counts, and/or habitat conditions	Trends in abundance and/or habitat conditions
California spotted owl	Region 5 survey protocol CDFG protocol	Occupied territories and/or habitat condition
Mountain lion	Studies in cooperation with CDFG, USGS	Trend in distribution movement, and/or habitat conditions
Mule deer	Herd composition in cooperation with CDFG habitat condition	Trends in abundance and/or habitat condition

SECTION 5.0 – PROJECT IMPACTS TO SELECTED MIS

5.1. ENGELMANN OAK

Many oak species exhibit very low reproductive rates, and Holland and Keil (1996) noted that the majority of oaks in oak woodlands appear to have ceased reproduction around 1900. As a result, the primary management concern for Engelmann oak woodlands is maintaining sufficient regeneration to sustain long-term viability of the species. Engelmann oaks are used by the Forest Service as a proxy for oak regeneration and as a determinant of oak woodland habitat quality within the CNF (USDA Forest Service 2007). Monitoring of this species, in particular saplings, will measure the success of the forest management strategies (USDA Forest Service 2007).

5.1.1 Natural History

The Engelmann oak is a deciduous tree species that has a small natural range and is the only species of subtropical white oak in California (USDA Forest Service 2007). This species most commonly occurs in savannas with a grassland understory on valley floors, foothill slopes, and raised stream terraces within riparian corridors. It has the smallest natural range of any oak species in California, occurring from the foothills of the San Gabriel Mountains in Los Angeles County through the Santa Ana Mountains in Orange County to the Peninsular Ranges of Riverside and San Diego Counties (USDA Forest Service 2007, Sawyer and Keeler-Wolf 1995).

5.1.2 Status and Trends

The rapid expansion of the urban landscape through much of the Engelmann oak's small natural range is one of the primary threats to this species. As stated above, it has been suggested that oak reproduction throughout California has ceased or is declining. This may be a result of an increase in the numbers of seed-eating species (enabled by the elimination of many natural predators), introduction and rapid expansion of exotic annual grasses which dominate the understory of many oak woodlands, grazing of naturally occurring understory species, and in some areas, root rot. Although the threats to Engelmann oaks are not as serious as those to some other oak species (Holland and Keil 1996), it is still at risk due to its limited distribution, low reproductive rate, and other threats.

5.1.3 Project-level Effects Analysis based on Habitat Data

Key Habitat Factor(s) for the Analysis
Engelmann oak was selected as a MIS to track oak regeneration.

Analysis Area for Project-level Effects Analysis
Engelmann oak is found in limited areas throughout the CNF, including the western foothills of the Palomar, Descanso, and Trabuco Districts. As identified in Section 3.1, the analysis area for the direct and indirect impacts of the Project focuses on the Project ROW and a buffer of approximately 660 feet outside the ROW. The cumulative effects analysis for Engelmann Oak considers past, present, and reasonably foreseeable projects within a 5 mile buffer of the Project ROW, beginning at MP 48 in upper McCain Valley on BLM lands and extending west to MP 107, just west of Wildcat Canyon Road in Lakeside. All public and private lands within this cumulative effects analysis area (CEA), both within and outside the CNF Descanso District, are considered for this analysis. The distribution area for Engelmann Oak extends west of the Descanso District boundary only; Engelmann Oak is not known to occur east of the Descanso District boundary (MP 48 to 53 of CEA).

Current Condition of the Key Habitat Factor(s) in the Analysis Area

Regeneration of Engelmann oak is considered a problem in some areas of the CNF. Grazing of the understory by deer and cattle as well as the introduction of aggressive, non-native grass species pose the greatest risk to this species in the CNF. Grazing by mule deer is assumed to occur throughout the Descanso District in areas accessible to the species. In addition, within the analysis area cattle grazing and/or horse pasturing occurs on an annual basis on many private and public (BLM) lands within the distribution area of Engelmann oak, including portions of the ROW on private lands within and adjacent to the Congressional Boundary (e.g., Tulloch, Berglund, Bartlett, Kretuzkamp, Slaughter, Wilson, Chocolate Mountain Ranch, Hartung). These grazing/pasture areas often co-occur with small stands of coast live oak and occasional individuals of Engelmann oak. In general, seedling or sapling Engelmann oak trees are not present, suggesting that grazing may be affecting the regeneration of Engelmann oak. On private lands within the analysis area where grazing no longer occurs (e.g., Jenson, Long Potrero, Lightner), significant new establishment of Engelmann oak (and coast live oak, scrub oak) is evident.

Project Direct Effects to Habitat

This impact analysis is based on Engelmann oak locations recorded during vegetation mapping and rare plant surveys conducted for the Project in 2006, 2007, 2008 and 2009 (Jones & Stokes/Arcadis 2006, 2007, 2008, RECON 2009). This species would be directly and indirectly impacted by implementation of the Project (Figure 2, Appendix A) on both private lands as well as USFS lands.

Within the Project ROW, Engelmann oak occur primarily as individual trees within small areas of coast live oak woodland or southern coast live oak riparian forest (SCLORF), and in small stands of Engelmann oak woodland. The Project identified direct impacts to Engelmann oaks on the basis of individual trees, as well as Engelmann oak woodland. In total, approximately 2,530 acres of Engelmann oak woodlands occur on public lands in southern California, and approximately 1,749 acres of Engelmann oak woodland are found on the CNF (USDA Forest Service 2007). Within the Project ROW, the species occurs as individuals in stands of coast live oak woodlands near Thing Valley and La Posta Truck Trail, and throughout the Buckman Springs and Potrero Canyon areas. However, the densest woodlands dominated or co-dominated by Engelmann oaks within the Project ROW are located along Bell Bluff Truck Trail and the proposed Suncrest Substation (Figure 2, Appendix A), within the Congressional Boundary of the Descanso District on private lands near Japatul Valley. All Engelmann oak trees mapped in this area that may potentially be impacted occur on privately owned land. Individual trees were not mapped within areas of Engelmann oak woodland; therefore, these areas are treated in this analysis as exclusively consisting of Engelmann oaks. Other habitats where Engelmann oaks were mapped include coastal sage scrub, chaparral, and non-native grassland. Permanent impacts would occur from construction of the Suncrest Substation, towers and access roads, as well as from tree removal related to vegetation management along the entire Project ROW. Temporary impacts would occur from clearing required for staging areas and stringing sites, as well as necessary clearing around the tower footings. Temporary impact areas would be re-vegetated following construction. As noted in Mitigation Measure B-1a, direct impacts to Engelmann oak woodland will be mitigated at a 3:1 ratio (Appendix B).

The FEIR/EIS estimated that less than 1.0 acre of Engelmann oak woodland would be impacted on the CNF (FEIR/EIS at Ap.8M). Based on the modified Project ROW, the Project construction activities would not impact Engelmann oak trees on USFS lands in the CNF. A total of 1.27 acres of Engelmann oak woodland would be impacted on private lands within the Congressional boundary of CNF to construct the Suncrest substation and associated access road improvements. Vegetation management conducted during Project O&M activities may require some additional individual Engelmann oaks to be trimmed and/or removed on both private lands as well as USFS lands.

Project Indirect Effects to Habitat

Potential indirect impacts involving construction activities, such as grading, tower footing excavation, driving of heavy equipment on unpaved roadways and helicopter construction would result in increased levels of blowing dust that may settle on Engelmann oaks adjacent to the Project ROW. Increased levels of dust on plants can significantly impact photosynthetic capabilities and degrade the overall quality of the Engelmann oak woodlands. To offset these indirect impacts during construction, all cleared areas would be regularly watered and a 15 mile-per-hour speed limit shall be observed on dirt access roads to reduce fugitive dust (BIO-APM-3, Appendix B).

Although rare, high voltage power lines have been associated with wildfires, which cause direct loss of vegetation communities, wildlife habitat, and wildlife species. Although periodic fires are part of the natural ecosystem, fires burning too frequently can have significant long-term ecological effects, such as degradation of habitat and loss of species. While habitats in southern California are adapted to wildfires, an increased fire frequency can dramatically change the plant composition in a habitat, which is called "type conversion" (Keeley *et al*. 2005). When burned too frequently, vegetation communities are often taken over by highly flammable, weedy, non-native plant species that burn even more often and provide minimal habitat value for native plant and animal species, especially those of special status. Often, type conversion occurs with replacement of native scrub habitats with non-native grassland. Although considered unlikely, 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 Project, SDG&E shall re-seed all natural areas, both public and private, that are burned as a result of the Project-caused fire. Mitigation Measure B-1k (Appendix B) addresses type conversion and re-seeding after a transmission line caused fire.

Cumulative Effects to Habitat

Cumulative effects to habitat supporting Engelmann oak are considered over a reasonably foreseeable timeframe of ten years. Engelmann oak has a limited distribution within southern California, but occurs in the Descanso District of the CNF (and adjacent lands), with the densest woodlands in the San Diego County foothills between Cuyamaca Peak and Palomar Mountain (Stephenson 1999). A smaller oak population occurs west of the CNF Boundary in the vicinity of the foothills of Lakeside. The majority of Engelmann oaks (57 percent) are held in private lands, with the next largest portion (24 percent) controlled by the Cleveland National Forest (Scott 1991). Over 1,749 acres of Engelmann oak woodland occur on the CNF (USDA Forest Service 2005), the majority of which occur north of and outside the 5 mile CEA.

The primary threats on public lands to Engelmann oak are maintaining sufficient regeneration, which may be suppressed by unnatural rates of disturbance within its habitats, often caused by livestock grazing within the understory of existing woodlands and/or by non-native grass introduction within these same areas (Stephenson 1999). The primary threat on private lands to Engelmann oak is direct impact from residential and commercial development. Cumulatively, only the Kemerko residential project within the CNF has identified an impact to Engelmann Oak. This project on Mountain View Road in Descanso would result in direct impacts to approximately 94 acres of coastal sage scrub and southern mixed chaparral, and an undisclosed number of Engelmann oaks would be directly impacted in these areas.

As noted above, the Project will result in both direct and indirect effects to approximately 1.27 acres Engelmann oak and will therefore contribute to the cumulative effects on this species. The effects will be adverse, but will be limited in the overall area of effect (i.e., construction impacts of approximately

1.27 acres on private land within and adjacent to the Congressional Boundary compared to over 1,749 acres of Englemann oak woodland found on the CNF) and will be mitigated through purchase, restoration, and preservation of the Engelmann oak trees and woodland habitat surrounding the impact area. In sum, when considered with the impacts of other past, present, and reasonably foreseeable projects in the analysis area, the overall effects of the Project are not expected to cause a decline in the population of this species or reduce the overall quality or quantity of habitat for this species.

Summary of Habitat and Population Status and Trend at the Forest Scale

The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the Project must be informed by habitat and population monitoring data. The discussion below summarizes the habitat status and trend data, and population trend data for the Engelmann oak. This information is drawn from the detailed information on habitat and population trends in the CNF MIS Report (USDA Forest Service 2007), which hereby is incorporated by reference.

Habitat Status and Trend

Approximately 2,530 acres of Engelmann oak woodlands occur on public lands in southern California, and approximately 1,749 acres of Engelmann oak woodland are found on the CNF (USDA Forest Service 2007). The USDA Forest Service estimates that Engelmann oak woodland is the dominant vegetation type on 17,054 to 21,083 acres in San Diego County. In general, the habitat for Engelmann oak is in good condition and the amount of habitat is stable. Estimates of the extent of Engelmann oak woodlands, however, vary depending on mapping criteria (USDA Forest Service 2007).

Population Status and Trend

The Engelmann oak population on the CNF is generally healthy, although poor recruitment is a problem in some areas. The California Native Plant Society considers the species to be endangered in a portion of its range, but widely enough distributed that it is not in danger of extinction at this time (USDA Forest Service 2007).

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the Species

The Project would not alter the current habitat or population trend for Engelmann oak woodland within the CNF because project-level impacts have been minimized and will not occur to Engelmann oak woodland on USFS lands in the CNF from construction. Project impacts would occur to 1.27 acres of an estimated 17,000 plus acres of Engelmann oak woodland in San Diego County, but would not contribute to the decline of an estimated 1,749 acres of Engelmann oak woodland on the CNF. Project impacts to Engelmann oak woodland on private property would be mitigated at a 3:1 ratio consistent with Mitigation Measure B-1a, consisting of enhancement and/or preservation of existing Engelmann oak woodland within the USFS CNF Congressional boundary (Appendix B). Viability of Engelmann oaks and oak woodland within CNF will be maintained by the Project avoidance and minimization measures.

5.2. ARROYO TOAD

The arroyo toad was selected as an MIS for low-elevation riparian and aquatic habitats (USDA Forest Service 2007). Management goals include maintaining and improving habitat functions, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, movement corridors, and habitat linkages. Trends in abundance, distribution, and habitat conditions will be assessed to determine management effectiveness for the arroyo toad and other aquatic and riparian fish and game species (USDA Forest Service 2007).

5.2.1 Natural History

The arroyo toad is a federally listed endangered species that is endemic to riparian environments in the foothill canyons and inter-mountain valleys of central and southern California and northwestern Baja California. It is found from near sea level to approximately 8,000 feet in elevation (USDA Forest Service 2005). During the breeding season, this species is typically found in the middle reaches of slow-moving, third-order streams with shallow pools and sandy or gravelly soils and sandy terraces. Breeding pools must be open and shallow with minimal current, and with a sand or pea gravel substrate overlain with sand or flocculent silt (USFWS 1999b). Adjacent terraces must provide open, sandy or gravely terraces with very little herbaceous cover for adult and juvenile foraging areas within a moderate riparian canopy of cottonwood, willow, or oak. This species tends to be found along rivers and streams with open vegetation canopies. Heavily shaded pools are unsuitable for larvae and juvenile toads due to lower water and soil temperatures and poor algal mat development. During the non-breeding season, arroyo toads are found in burrows within the upland habitats located up to one kilometer from breeding streams (USFWS 1999b).

The arroyo toad has been extirpated from 75 percent of its former range, and the remaining occupied habitat is threatened by continued dam construction, river diversion, conversion of riparian wetland habitat by agriculture and urbanization, road construction, off-highway vehicle use, campground development, grazing, and mining activities (USFWS 1994). Arroyo toads are diurnal for the first four to five weeks as juveniles and stay close to breeding pools. They become nocturnal when they reach 17 to 23 millimeters in length and spend the day in burrows. Nocturnal activity is normal for both adults and large juveniles, but they may occasionally be active and observed during the day (USFWS 1999a).

5.2.2 Status and Trends

Regionally, arroyo toads are threatened by removal of riparian habitats and damming or diverting of streams. Dams alter stream flows, reducing the frequency of flooding, increasing water temperature, increasing scour upstream of the dam, and reducing the sediment supply downstream. Without this sediment, appropriate physical characteristics and plant species associated with arroyo toad habitats cannot form or be maintained. Additionally, spread of exotic species through the watersheds reduces the habitat value as it generally results in replacement of native species with non-native species. The CNF has taken measures to improve habitat values for arroyo toad, including improving stream crossings to prevent impacts to arroyo toads, removing unauthorized roads, excluding grazing from certain areas, and acquiring potential habitat areas. Notwithstanding these measures, most arroyo toad sub-populations in the CNF are small. Most arroyo toad populations within the CNF are near the edge of the forest, and most prime breeding habitat occurs just outside the CNF boundary (USDA Forest Service 2007).

It has been estimated that arroyo toad populations on federal lands have increased since federal listing in 1994, and approximately half of the remaining populations are considered to be relatively secure (USDA Forest Service 2007). Within the CNF, it appears that the habitat and populations of the arroyo toad are stable.

5.2.3 Project-level Effects Analysis based on Habitat and Population Data

Key Habitat Factor(s) for the Analysis
Arroyo toad was selected as a MIS as an indicator of the condition of aquatic habitats.

Analysis Area for Project-level Effects Analysis

Arroyo toads occur in most of the major stream systems in the CNF, and occupied habitat covers approximately 8,000 acres on Forest Service owned lands (USDA Forest Service 2007). The Forest Service has designed a digital model to identify potential habitat for the arroyo toad, including within the Descanso District, where the Project will be located. As identified in Section 3.1, the analysis area for the Project's direct and indirect effects to arroyo toad focuses on the Project ROW and a buffer of approximately 660 feet outside the ROW. Additionally, the Project's potential cumulative effects to the species in its known distribution area, up to 5 miles from the Project ROW, also are considered.

Current Condition of the Key Habitat Factor(s) in the Analysis Area

Stream segments within the CNF below a two-percent gradient are considered suitable habitat for arroyo toad. Current management practices within the CNF to protect and improve habitat for the arroyo toad have shown to be effective, and the current status of arroyo toad habitat within the CNF is considered to be good. Habitat exists as a series of short, separate stream segments on the CNF where suitable habitat is present.

Project Direct Effects to Habitat

This impact analysis is based on historical and current data for arroyo toad locations, habitat requirements, former and currently proposed Critical Habitat (USFWS 2005, USFWS 2009), Forest Service GIS information showing suitable (modeled) and occupied habitat, aerial photographs, habitat assessments conducted during the vegetation mapping surveys in Spring 2007 (Jones & Stokes/Helix 2007), and habitat assessments and focused protocol surveys conducted on the Project ROW in 2009 (RECON 2009), as required by the Project Biological Opinion issued by the USFWS. The effects to arroyo toad also were analyzed for the entire Project ROW in the 2008 FEIR/EIS and Biological Assessment (BA); potential impacts to the arroyo toad along with required mitigation measures are addressed in the Project Biological Opinion (BO) issued by the USFWS.

Helix Environmental conducted arroyo toad habitat assessments in Spring 2007 (Helix 2007), identifying drainages potentially affected by the Project within the CNF; these areas are shown on Figure 2 of the FEIR/EIS (Aspen 2008a). Focused surveys conducted in 2007 (Jones & Stokes 2007) followed USFWS protocol, where possible. USFWS protocol (USFWS 1999) focused surveys were conducted in 2009.

Furthermore, Forest Service GIS data showing both suitable and occupied habitat were used to determine the worst-case permanent and temporary impacts to arroyo toad habitat on CNF lands. Table 5 shows the total acreage of potential impacts to arroyo toad within USFS lands. The Project direct impacts to arroyo toad habitat on USFS lands would be limited to 3.50 acres in the upper watershed of La Posta Creek, which is known to contain toads in small numbers throughout this drainage (USDA Forest Service 2005). Direct impacts listed below would occur in several places within the Project ROW (e.g., tower pads, TSAPs, access roads) in areas that are modeled as suitable habitat or are known to be occupied by arroyo toad. Additionally, potential impacts may occur on private lands within and adjacent to the CNF, including approximately 4.29 acres of direct impacts to occupied habitat on other public and private lands within and adjacent to the Congressional Boundary, for a total of approximately 7.79 acres of impacts. These potential impacts to suitable habitat on non-USFS administered lands could occur in Potrero Creek, Cottonwood Creek, Taylor Creek, San Diego River, and Viejas Creek based on the results of the 2009 surveys (RECON 2009) and USFWS proposed critical habitat in the Project ROW.

Table 5. Direct Effects on Arroyo Toads on USFS Lands

Habitat	Permanent (acres)	Temporary (acres)
USFS Breeding Habitat	0.0	0.0
USFS Modeled Suitable Habitat	2.83	0.01
USFS Occupied Habitat	0.66	0.00
Total	**3.49**	**0.01**

Project impacts would occur in the upper portion of the La Posta Creek drainage at: 1) the TSAP and work pad at structure EP142-1 are located within suitable arroyo toad habitat on USFS lands; 2) the TSAP at structure EP137 and the TSAP and work pad at structure EP130-1 are located within suitable arroyo toad habitat on USFS lands; 3) portions of La Posta Truck Trail between MP 54 and MP 58 that will require grading are located within suitable and occupied arroyo toad habitat on USFS lands; and 4) structures EP117-2 and EP118-2, including structure pads, TSAPs, existing access roads requiring minor improvements, and grading around structure pads, located within suitable arroyo toad habitat on both USFS lands and adjacent private lands (Shrock). In total, the Project's direct impact to 3.5 acres of USFS-administered lands is less than 0.07 percent of the occupied habitat located on USFS lands in the CNF.

The Project also will affect occupied habitat along Potrero Creek at structure EP67, including the structure pad, permanent maintenance pad, work area, pull sites, and a new access road, which occur on private lands within the CNF Congressional boundary, and private and BLM lands adjacent to the CNF Congressional boundary. The Project will affect occupied habitat along the San Diego River near MP 101, including an existing access road requiring minor improvements, and a guard area, which occurs on City of San Diego lands within the CNF Congressional boundary.

In locations where the proposed ROW area would cross through occupied habitat, arroyo toad habitat could be permanently impacted by construction of towers and access roads. Because the towers are generally placed on ridgelines and hilltops rather than in canyon bottoms and streambeds, impacts caused by tower installation would avoid arroyo toad breeding habitat, but has potential to impact upland, non-breeding habitat. However, where access roads would cross creeks or drainages, arroyo toad breeding habitat could be permanently impacted. Temporary impacts would occur from clearing required for construction yards, stringing sites, and TSAPs as well as necessary clearing around the tower footings. All temporary impact areas would be re-vegetated following construction (see Mitigation Measure B-7j in Appendix B for a detailed description of mitigation requirements for impacts to arroyo toad habitat).

Mitigation measures for impacts to occupied arroyo toad habitat include exclusionary fencing, pre-construction surveys, and habitat restoration and preservation. Exclusionary fencing would be installed around the construction zone to prevent toad access and to reduce potential Project effects. Pre-construction surveys (including one no more than 24 hours prior to construction) would be conducted for arroyo toads in accordance with the BO. During construction within occupied habitat, surveys would be conducted every morning prior to work commencing. Any toads found would be relocated to appropriate habitat outside the Project impact footprint.

Mitigation of permanent impacts to occupied arroyo toad breeding habitat will include off-site acquisition and preservation of occupied arroyo toad breeding habitat at a ratio of 3:1. Mitigation of permanent impacts to occupied, upland burrowing habitat will include off-site acquisition and preservation of occupied, upland burrowing habitat at a ratio of 2:1. Mitigation of temporary impacts to occupied breeding habitat will include on-site restoration at a 1:1 ratio, and off-site acquisition and preservation of occupied breeding habitat at a 2:1 ratio. Mitigation of temporary impacts to occupied, upland burrowing habitat will include on-site restoration at a 1:1 ratio, and off-site acquisition and preservation of occupied, upland burrowing habitat at a 1:1 ratio (Mitigation Measure B-7j, Appendix B).

Project Indirect Effects to Habitat

Potential indirect effects include risk of increased fire frequency, invasive species introduction, and dust. The Project would not realign or divert any drainages, so downstream loss of habitat is not expected to occur as a result of implementation of the Project.

The construction and operation of new transmission lines in areas with high fire risk could cause wildfires and reduce the effectiveness of fire fighting efforts, which may result in large-acreage wildland fires. Wildfire can be a threat because it can cause the direct loss of habitat and species, and also can lead to type conversion. This fire risk is especially high during the dry period of summer and fall, when arroyo toads are typically aestivating in upland areas. While toads aestivate in burrows underground and may survive the initial burn, the loss of habitat from such a burn could reduce survivorship and reproductive success. Although periodic fires are part of the natural ecosystem, frequent fires may have significant long-term ecological effects, such as type conversion. Often, type conversion occurs with replacement of native scrub habitats with non-native grassland, although riparian habitats may be less susceptible to type conversion than shrub habitats. Although considered unlikely, 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 Project, SDG&E shall re-seed all natural areas, both public and private, that are burned as a result of the Project-caused fire. Mitigation Measure B-1k (Appendix B) addresses type conversion and re-seeding after a transmission line caused fire.

Installation of towers and access roads would create openings in existing habitat and increase edge effects, which could provide avenues for invasive plant species to colonize. Such invasive plants could supplant native species and alter the habitat, reducing its quality for arroyo toads. A Weed Control Plan would be implemented to reduce the effects of invasive plants (Mitigation Measure B-3a, Appendix B).

Construction activities, such as grading, tower footing excavation, driving of heavy equipment on unpaved roadways, and helicopter construction could increase dust that may settle on surrounding vegetation. Such dust would be considered an indirect impact that would degrade the overall quality of arroyo toad habitat. To offset these indirect impacts during construction, all cleared areas would be regularly watered (with water from agency approved sources outside of the CNF), and a 15 mile-per-hour speed limit shall be observed on dirt access roads to reduce fugitive dust (BIO-APM-3, Appendix B).

Cumulative Effects to Habitat

Cumulative effects to habitat supporting arroyo toad are considered over a reasonably foreseeable timeframe of ten years. As noted, the projects included in the cumulative analysis occur within 5 miles of the Project ROW, given the potential dispersal and home range of the arroyo toad, which has a common dispersal distance of less than 1 mile, but has been known to travel more than 2 miles on

occasion. A full list of cumulative projects identified with potential to impact the arroyo toad is included as Appendix C.

Arroyo toad populations are found along the forest boundary, in surrounding creeks and rivers in the area. Within the CNF in general, recent droughts, fires, and floods have likely adversely affected arroyo toads. Some known occupied habitat has gone for several years with no surface water for breeding during the breeding season. In addition to the droughts, fires, and floods, the affected areas likely had emergency repairs conducted on roads, railroads, and utilities. Conversely, arroyo toad habitat within the CNF has been protected during the breeding season through the temporary and permanent closure of specific campgrounds. The USFS considers threats to arroyo toad habitat to include releases from reservoirs, drawdown of surface water from wells, the introduction of predatory non-native species and invasive non-native plants as a result of campgrounds, OHV activity, livestock grazing, suction-dredge mining, and siltation (USDA Forest Service 2005). Habitat outside national forest land also has been degraded by increased development and flood control.

As stated earlier, occupied arroyo toad habitat covers approximately 8,000 acres on USFS lands in the entire CNF (USDA Forest Service 2007). For the cumulative analysis area (within 5 miles of the Project ROW), there are approximately 4,495 acres of occupied habitat on USFS-administered lands within the CNF Congressional Boundary, approximately 4,375 acres of occupied habitat on other public and private lands within the CNF Congressional Boundary, and an additional 2,955 acres of occupied habitat on public and private lands outside of the CNF Congressional Boundary, for a total of approximately 11,825 acres. Projects within 5 miles of the Project on CNF lands that may impact arroyo toad include approximately 464 acres of residential subdivisions, the Japatul Watershed Improvement Project, and the West-Wide Energy Corridor Project. Cumulative projects outside of the CNF (within 5 miles of the Project ROW and within 5 miles of the nearest identified arroyo toad habitat) include two residential subdivisions, a military project, and a commercial development. However, no suitable arroyo toad habitat has been identified within the construction footprint for these projects, none of these projects are located within known arroyo toad habitat, and major highways or roadways occur between each of these individual projects and occupied arroyo toad habitat. Therefore, these cumulative projects outside of the CNF were considered unlikely to impact arroyo toad. All of the cumulative projects within the CNF may have some potential to impact arroyo toad and/or lessen the quantity and quality of arroyo toad habitat available, and would be expected to contribute to cumulative impacts if impacts cannot be avoided by the projects.

During the Project design phase, contribution to cumulative impacts on arroyo toad was minimized by designing the Project to avoid habitat and limiting the area and duration of effect during the Project construction phase within and adjacent to the creeks and rivers designated as habitat. The Project avoids direct and indirect impacts to arroyo toad habitat to the greatest extent feasible. As discussed above, temporary adverse effects of Project construction would be minimized or avoided altogether. However, approximately 7.79 acres total of occupied habitat will be directly affected by the Project on public and private lands within and adjacent to the Project ROW (3.5 acres of which is on the CNF). Of the total 7.79 acres affected, 5.22 acres will be temporarily affected.

The Project impact to 3.5 acres on CNF is less than 0.07 percent of the occupied habitat on USFS lands in the CNF. The Project impact to 7.79 acres total is also less than 0.07 percent of the occupied habitat on public and private lands within and adjacent to CNF lands. Additionally, these impacts would not be concentrated in one area containing a large population of arroyo toad within the Descanso District. Indirect impacts would potentially occur within multiple drainages in the Descanso District, but would be

limited to existing road crossings within these areas. In sum, given these factors and with the proposed mitigation measures, the proposed Project in combination with past, present, and reasonably foreseeable future actions, would likely not contribute a substantial incremental effect on arroyo toad, and the overall effects are not expected to cause a decline in the population of this species.

Summary of Habitat and Population Status and Trend at the Forest Scale

The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the Project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population status and trend data for arroyo toads. This information is drawn from the detailed information on habitat and population trends in the CNF MIS Report (USDA Forest Service 2007).

Habitat Status and Trend

Arroyo toad habitat within the CNF is generally in good condition, and the trend has been toward improvement in riparian habitat. Conservation of riparian areas has been a top priority for the CNF since at least the 1980s. The CNF has implemented measures to enhance and protect these areas, including reducing or excluding livestock grazing, re-routing roads and trails away from streams, and replanting streamside areas with willows. Because of the emphasis on protecting and enhancing riparian habitat, riparian habitat forest-wide, including the Descanso District, is generally in stable or improving condition (USDA Forest Service 2007).

Population Status and Trend

The population of arroyo toads within the CNF is small, and the ability to detect populations and their reproductive success in any given year is highly dependent on the timing and amount of rainfall. The population trend for arroyo toad appears to be stable.

Relationship of Project-Level Effects to Forest-Scale Habitat Trends

The CNF MIS report (USDA Forest Service 2007) indicates a stable and improving trend in arroyo toad habitat on the CNF. Habitat improvement is the result of closure of two miles of unauthorized roads, exclusion of grazing from over 12,000 acres (centered on riparian areas), and acquisition of arroyo toad habitat.

Implementation of the Project would result in minor impacts to CNF-identified suitable and occupied arroyo toad habitat, as illustrated above in Table 5. No impacts to breeding habitat are identified on USFS lands. There may be minimal impacts to a small area on private land along La Posta Creek that is assumed to be occupied by arroyo toad, and potential minor impacts to suitable habitat could occur in Potrero Creek, Cottonwood Creek, Taylor Creek, and Viejas Creek based on the results of the 2009 surveys (RECON 2009) and USFWS proposed critical habitat in the Project ROW. Project design avoidance and minimization measures limit impacts to arroyo toad habitat on the CNF, and implementation of the Project, including applicable pre-construction, construction, and O&M mitigation measures for arroyo toad would not alter the current habitat status or trend.

Relationship of Project-Level Effects to Forest-Scale Population Trends

The CNF MIS report (USDA Forest Service 2007) indicates a stable population trend for arroyo toad on the CNF, with no new populations being detected in recent years. Construction of the Project would not impact arroyo toad habitat in Wilson Creek or Sweetwater River. Potential minor impacts could occur in suitable or occupied arroyo toad upland habitat (Figure 3, Appendix A) within the CNF along Potrero Creek, Cottonwood Creek, Taylor Creek, and Viejas Creek based on the results of the 2009 surveys

(RECON 2009) and USFWS proposed critical habitat in the Project ROW. Impacts to assumed occupied arroyo toad breeding habitat would not occur within or adjacent to the CNF. The Project would directly impact up to 3.5 acres of approximately 8,000 acres of occupied arroyo toad habitat on USFS lands within the CNF and an additional 4.29 acres of occupied habitat on private lands, and potentially may result in short-term indirect impacts associated with Project construction activities. Project activities will be limited in scale (less than 100 acres total of USFS lands permanently and temporarily impacted in the CNF by the Project) and duration (construction activities lasting approximately 3 to 6 weeks total within most tower sites). The Project is not expected to alter the current arroyo toad population status or trend on the CNF because of the limited area and duration of potential effect, and because potential direct Project impacts would be limited to small numbers of arroyo toad located in a single drainage. Viability of arroyo toad within the CNF will be maintained by the Project, particularly with avoidance and minimization measures, including Mitigation Measure B-7j and the Species Specific Conservation Measures (SS-CM-8 through SS-CM-15) in the BO (Appendix B).

5.3. SONG SPARROW

The song sparrow was selected as a MIS for riparian areas because its abundance is indicative of management and reflects the overall health of riparian communities (USDA Forest Service 2007). Since the vast majority of song sparrow observations are made in riparian habitats, its population trend is considered indicative of changes in riparian habitat. Breeding survey data collected between 1966 and 2004 suggest that song sparrow numbers are decreasing (Sauer *et al*. 2005). Threats to song sparrows include habitat loss, water extraction, brood parasitism by brown-headed cowbirds (*Molothrus ater*), and predation by native and introduced wildlife.

5.3.1 Natural History

The song sparrow is the most common bird within the riparian woodlands of San Diego County (Unitt 1984). It often is found in riparian habitat with a dense understory, although it has adapted somewhat to urbanization and has been found in upland scrub habitats or landscaped areas, provided permanent water is present.

5.3.2 Status and Trends

Because song sparrows occur almost exclusively in riparian areas, all riparian habitat within the CNF is considered occupied for the purpose of this assessment. On the whole, riparian habitats within the CNF are of moderate to good quality, although large areas burned in the 2007 Witch Creek and Harris Fires as well as the 2003 Cedar Fire.

Sampling data for song sparrow populations suggest that there appears to be a nationwide decline in song sparrow populations, and regionally, song sparrow populations may be declining at a slow, steady rate. While this decline, measured between 1966 and 2004, did not indicate a statistically significant population trend, a Forest Service study detected similar negative population trend within the southern California forests (Sauer et al. 2005).

5.3.3 Project-level Effects Analysis based on Habitat and Population Data

Key Habitat Factor(s) for the Analysis
Song sparrow was selected as a MIS to track condition of riparian habitat.

Analysis Area for Project-level Effects Analysis

As identified in Section 3.1, the analysis area for the Project's direct and indirect effects to song sparrow focuses on the Project ROW and a buffer of approximately 660 feet outside the ROW. Additionally, the analysis of the Project's potential cumulative effects considers past, present, and reasonably foreseeable projects located within 3 miles of the Project ROW. This distance takes into consideration that while song sparrows can be highly territorial and typically have dispersal distances of less than 1 mile, some individuals may migrate beyond that distance.

Current Condition of the Key Habitat Factor(s) in the Analysis Area

Riparian habitat within the CNF is considered to be in stable or improving condition as a result of measures implemented by the Forest Service to enhance and protect these areas, including restrictions on livestock grazing, re-routing roads and trails away from streams, and replanting streamside areas (USDA Forest Service 2007).

Project Direct Effects to Habitat

Project construction and O&M activities would require utilizing existing access roads to move materials and equipment to conventional construction tower sites. Roads in the Project ROW cross drainages supporting riparian habitat, and Project activities could therefore affect song sparrows. However, direct impacts to song sparrow habitat have been minimized during the Project design process by avoiding streams, riparian habitat, wetlands, etc. This was accomplished by siting towers on ridgelines and hillsides and designing them for helicopter construction whenever possible, thereby avoiding sensitive canyon bottoms and streambeds. The modified Project ROW will however permanently impact a total of 0.03 acre riparian forest and 0.06 acre of associated non-vegetated channel (ephemeral streams) on USFS lands in the CNF, while temporary impacts to riparian habitat have been avoided. Based on USFS vegetation type mapping for the CNF (USDA Forest Service 2009a), approximately 3,490 acres of riparian habitat occur forest-wide (this total does not include any riparian habitat that may be present in CNF wilderness areas). Project impacts would thus permanently affect less than 0.003 percent of the potentially suitable riparian habitat for the song sparrow on USFS-administered lands within the CNF. Additionally, the Project would permanently impact a total of approximately 0.19 acre riparian forest and 0.25 acre of associated non-vegetated channel (ephemeral streams), and temporarily impact approximately 0.07 acre of riparian forest and approximately 0.03 non-vegetated ephemeral channel on other public and private lands within and adjacent to the CNF Congressional Boundary.

Permanent impacts would be mitigated through off-site acquisition and preservation of riparian habitat (Mitigation Measure B-2a, Appendix B). Temporary impacts to riparian habitat would be avoided and permanent impacts would be mitigated within the CNF through preservation of riparian habitat. The Project also would not result in a reduction of riparian habitat quality in or adjacent to the Project ROW because of the minimization of permanent impacts and avoidance of temporary impacts to riparian habitat, implementation of a Weed Control Plan (Mitigation Measure B-3a) during and after Project construction, implementation of a USFS approved Stormwater Pollution Prevention Plan (SWPPP) and Sediment Control Plan (Mitigation Measure H-1l), and avoidance of conventional construction activities during the bird breeding season (Mitigation Measure B-8a).

Additionally, potential direct effects to song sparrows could include electrocution and collision risk. Song sparrows are unlikely to be at risk of electrocution because the birds are too small to simultaneously contact two energized phase conductors or an energized conductor and grounded hardware. However the species is at risk of collision with towers and transmission lines. Most collisions occur with migratory birds during spring migration when strong winds and storms are more likely to

force the birds to fly at relatively low altitudes. The collision risk for song sparrows is expected to be relatively low because populations are largely sedentary.

Project Indirect Effects to Habitat

Potential indirect effects to riparian habitat include increased fire frequency, edge effects, invasive species introduction, fugitive dust, and noise.

The construction and operation of new transmission lines in areas with high fire risk could cause wildfires and reduce the effectiveness of fire fighting efforts. Fires cause direct loss of vegetation communities, wildlife habitat, and wildlife species. Although periodic fires are part of the natural ecosystem, fires burning too frequently can have significant long-term ecological effects, such as degradation of habitat and loss of species. While habitats in southern California are adapted to wildfires, an increased fire frequency with growth in the human population can cause type conversion. When burned too frequently, vegetation communities may often be taken over by weedy, non-native plant species that may be more flammable and provide minimal habitat value. It should be noted that the riparian habitats, in which song sparrows occur, are probably less susceptible to type conversion than upland shrub habitats. While direct impacts to song sparrows caused by fire would be negligible, any impacts from type conversion would be treated as a temporary impact and would be mitigated with restoration. Although considered unlikely, 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 Project, SDG&E shall re-seed all natural areas, both public and private, that are burned as a result of the Project-caused fire. Mitigation Measure B-1k (Appendix B) addresses type conversion and re-seeding after a transmission line caused fire.

Installation of towers and access roads would create openings in existing habitat and increase edge effects, which could provide avenues for invasive plant species to colonize. A Weed Control Plan would be implemented to reduce the effects of invasive plants (Mitigation Measure B-3a, Appendix B).

Construction activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways could increase dust that may settle on surrounding vegetation. Such dust would be considered an indirect impact that would degrade the quality of song sparrow habitat. To offset these indirect impacts during construction, all cleared areas would be regularly watered (with water from agency approved sources outside the CNF), and a 15 mile-per-hour speed limit shall be observed on dirt access roads to reduce fugitive dust (BIO-APM-3, Appendix B). Construction noise could cause a temporary, indirect impact to song sparrows, some of which may be displaced from the vicinity of the construction areas. Birds would be expected to return to the area following construction.

Cumulative Effects to Habitat

Cumulative effects to habitat supporting song sparrows are considered over a reasonably foreseeable timeframe of ten years. As noted above, the cumulative effects analysis considered projects up to 3 miles from CNF lands, given that while song sparrows can be highly territorial and typically have dispersal distance of less than 1 mile, some individuals may migrate beyond this distance. A full list of cumulative projects with potential to impact the song sparrow is included as Appendix C.

Song sparrows are well represented in the CNF, almost exclusively in riparian areas. Song sparrow populations also are found outside of the forest boundary, as the song sparrow is the most common bird within the riparian woodlands of San Diego County. The Project will result in minimal permanent

impacts to potentially suitable and assumed occupied habitat for song sparrows, as well as potential direct effects to song sparrows from electrocution and collision risk.

In general, recent and planned vegetation treatments throughout the CNF have and will have the potential to affect song sparrows. However, each of those projects also includes measures to protect riparian habitat, riparian-dependent threatened and endangered species, and water quality, thus effectively reducing the degree and duration of potential effects to song sparrows within those project areas. Similar vegetation projects on private lands, however, do not generally carry the same levels of riparian protection as those on the CNF and likely have resulted in disturbance to song sparrows in short-term and, potentially, long-term alterations of habitat. Riparian habitats on and near the CNF on federal and non-federal lands have been affected by water diversions and extractions that reduce the amount and quality of this habitat type. As such, effects on song sparrow populations likely have occurred due to reduction in habitat quality and quantity.

Low productivity and brood parasitism rates, both likely the result of habitat degradation, particularly the destruction of riparian understory, probably have the greatest influences on song sparrow numbers. The species is not overly sensitive to human-induced disturbance (Humple et. al. 2004). Cumulative projects identified in or near both the CNF and Project boundaries include residential (approximately 464 acres) and local improvement projects. Other projects include road improvements at Old Highway 80 and Pine Creek Road and the gold spotted oak borer study. Proposed and planned housing developments will result in increased recreational uses in the Project ROW, particularly in some of the more accessible areas along National Forest System roads. The increasing human population in southern California is putting more pressure on the few perennial streams for recreation. This can affect song sparrows and other riparian dependent birds when overuse may negatively impact nesting success.

As discussed above, the Project may result in some direct or indirect effects to song sparrow habitat and, as a result, may contribute cumulative effects. While those effects may be adverse, they would not be considered substantial due to the limited area of effect to song sparrow habitat. The Project will permanently impact 0.03 acre of riparian forest and 0.06 acre of non-vegetated channel on USFS lands in the CNF, and avoid temporary impacts to these vegetation communities and jurisdictional habitats. The Project also will permanently impact approximately 0.44 acre, and temporarily impact approximately 0.1 acre, of riparian forest and non-vegetated channel on non-USFS lands within and adjacent to the CNF Congressional boundary. The permanent impacts on USFS lands within the CNF, which are less than 0.003 percent of potentially suitable habitat for the song sparrow within the CNF based on USDA Forest Service (2009a) vegetation mapping, would be mitigated through preservation of 0.21 acre riparian woodland/ephemeral stream habitat within the CNF. Any indirect effects to song sparrow habitat on USFS lands within the CNF resulting from the Project would likely be limited as well. Additionally, implementation of proposed mitigation measures will avoid or minimize any direct or indirect effects. As a result, the total permanent loss of 0.09 acre of potential habitat for the sparrow on USFS lands in the CNF (or the additional limited impacts on private lands within and adjacent to the Congressional Boundary) would not contribute to a substantial incremental effect on song sparrows, and the overall effects are not expected to cause a decline in the population of this species within the CNF. Optimal habitat (riparian forest) for the song sparrow has been avoided to the maximum extent practicable during the Project design process, and the Project, in combination with past, present, and reasonably foreseeable future actions in the area, would not reduce the quality and quantity of song sparrow habitat.

Summary of Habitat and Population Status and Trend at the Forest Scale

The Forest Plan requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the Project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population status and trend data for the song sparrow. This information is drawn from the detailed information on habitat and population trends in the CNF MIS Report (USDA Forest Service 2007).

Habitat Status and Trend

Song sparrow riparian habitat condition is stable or improving. Conservation of riparian areas has been a top priority for the CNF since at least the 1980s, and the Forest has implemented measures to enhance and protect these areas, including reducing or excluding livestock grazing, re-routing roads and trails away from streams, and replanting streamside areas with willows. Because of the emphasis on protecting and enhancing riparian habitat on the Forest, in general riparian habitat is in stable or improving condition (USDA Forest Service 2007).

Population Status and Trend

There appears to be a nationwide decline in the abundance of song sparrows, and a negative trend in song sparrow abundance was determined from monitoring on southern California National Forests. Although not statistically significant, other surveys have shown that California populations declined 0.3 percent per year between 1966 and 2004, with the decline becoming more evident in the 1980-2004 sampling period (Sauer *et al*. 2005). Within the Project ROW in the CNF, song sparrows were present in 63% of the focused riparian bird survey sites (RECON 2009) and were observed breeding in 18% of the sites during the surveys.

Relationship of Project-Level Effects to Forest-Scale Habitat Trends

The CNF MIS report (USDA Forest Service 2007) states that the riparian habitat status on 86 percent of the 88 watersheds on the Southern California National Forests were rated as being in either good or moderate condition. The current habitat trend on the CNF is a stable and improving condition.

The Project would not alter the current habitat status or trend because the towers would be generally constructed on ridgelines and hillsides rather than in canyons and streambeds. Minimal permanent impacts are expected to riparian habitat as a result of the creation and maintenance of access roads, but these impacts will be mitigated, consistent with the Project MMCRP (Appendix B).

Relationship of Project-Level Effects to Forest-Scale Population Trends

The CNF MIS report (USDA Forest Service 2007) states that song sparrows are common and abundant, but are experiencing a negative population trend. Song sparrows are expected to disperse from construction areas, and construction would be timed to avoid the bird breeding season in accordance with Mitigation Measure B-8a (Appendix B). Impacts to riparian habitat from each Project feature are generally small in size, are separated in space by at least several hundred feet, and would be mitigated for, including on-site restoration for temporary impacts. Access roads would be constructed at right angles to drainages to reduce impacts to riparian areas.

The Project will not contribute to the current declining trend of song sparrow populations within the Project ROW. All habitat impacts associated with the Project will be minimized to the maximum extent practicable through design of the Project, avoidance of riparian habitat where possible, habitat restoration, and pre-construction nesting bird surveys, if activities are to take place during the general avian breeding season (Jan 15 – Aug 15), or the raptor breeding season (Jan 1 – Sept 15) (Mitigation

Measure B-8a, Appendix B), effectively reducing the degree and duration of potential effects. Unavoidable impacts will be mitigated according to the Project Mitigation Measures (Appendix B).

5.4. CALIFORNIA SPOTTED OWL

The California spotted owl was chosen as a MIS for mature, large diameter, high canopy closure conditions of riparian/hardwood forest, live oak/bigcone Douglas-fir forest, montane conifer forest, and mixed conifer forest. The management goals for this species include maintaining and improving habitat conditions to sustain healthy populations, and to prevent federal listing (USDA Forest Service 2005). To meet these goals, it is necessary to preserve primary feeding areas, winter ranges, breeding areas, nesting areas, rearing areas, migration corridors, and landscape linkages. Trends in the number of occupied territories and/or habitat condition will be measured to assess management success. The Forest Service does not have sufficient data to quantify impacts and trends in habitat types utilized by spotted owls in southern California.

5.4.1 Natural History

California spotted owls occur in all the major mountain ranges in southern California from below 1,000 feet along the Monterey coast to approximately 8,500 feet in the San Bernardino Mountains (USDA Forest Service 2007). In southern California, spotted owls occur within three general but distinct forest types: riparian/hardwood forest, live oak/bigcone Douglas-fir forest, and mixed conifer forest (USDA Forest Service 2005).

In San Diego County and the CNF, it occurs year-round in woodlands characterized by a mix of coast live oaks and conifers, particularly in areas with a closed canopy, permanent water, ample tree cavities, and abandoned raptor nests or debris platforms (Unitt 1984). Within the CNF, the California spotted owl is known from numerous observations in the Laguna Mountains, from Forest Service records near Long and Antone Canyons, and from a nest sighting near Espinosa Creek and Corte Madera Mountain.

5.4.2 Status and Trends

The California spotted owl is a territorial species requiring large areas of appropriate habitat. Where appropriate habitat occurs, the species usually occurs in clusters with large areas of unsuitable habitat surrounding these clusters (Stephenson and Calcarone 1999). A range-wide study of California spotted owl populations reports that there is insufficient data for the establishment of trends for the entire population (Franklin *et al*. 2003).

5.4.3 Project-level Effects Analysis based on Habitat and Population Data

Key Habitat Factor(s) for the Analysis
California spotted owl was selected as a MIS to track the condition of riparian/hardwood forest, live oak/bigcone Douglas-fir forest, montane conifer forest, and mixed conifer forests.

Analysis Area for Project-level Effects Analysis
The California spotted owl occupies distinct territories within CNF and is a year round resident. As identified in Section 3.1, the analysis area for the Project's direct and indirect effects to California spotted owl focuses on the Project ROW and a buffer of approximately 660 feet outside the ROW. Additionally, the Project's potential cumulative effects considers past, present, and reasonably foreseeable projects located within approximately 8 miles of the Project ROW within and outside of the

CNF, to encompass the known dispersal distance of the species in San Diego County (USDA Forest Service 2005).

Current Condition of the Key Habitat Factor(s) in the Analysis Area

Recent drought conditions coupled with negative effects from air pollution, disease, and insect infestations, including the gold-spotted oak borer and the bark beetle, have increased tree mortality in all forest types found within all four southern California National Forests. The resulting tree mortality in the CNF was the most severe in recorded history. These die-offs affected the trees of highest value to spotted owls. Although the wildfires of 2003 and 2007 greatly affected spotted owl habitat in the other southern California National Forests, the effects within the CNF were relatively minor because much of the historically occupied habitat did not burn.

Project Direct Effects to Habitat

This impact analysis is based on historical and current data for the California spotted owl in and adjacent to the CNF, GIS vegetation mapping of the Project ROW, and the results of focused protocol surveys for spotted owl conducted in 2009 within potentially suitable habitat on the CNF within and adjacent to the Project ROW. Currently, there are 35 known territories on or adjacent to all three districts of the CNF (USDA Forest Service 2009b). The San Diego County Bird Atlas reports five observations within 10 miles of the proposed Project ROW, but no observations occur within the Project ROW (SDNHM Bird Atlas 2010). The Bird Atlas also includes 11 additional California spotted owl occurrences elsewhere in the County beyond 10 miles from the ROW (Appendix C). The closest recorded USFS observation occurs approximately one mile to the west northwest of MP 55 of the Project route (USDA Forest Service 2009b).

The Project ROW crosses or is adjacent to (within 1,000 feet) suitable habitat for the California spotted owl in several areas, including just east of proposed structures EP31-1 through EP26-1, directly adjacent to structure EP24-1, and east of structure EP23-2 (Chambers Group Inc., 2009). In addition, proposed structure EP138-2 is the closest Project structure to a recorded California spotted owl location (Figure 4, Appendix A), approximately 1.16 miles to the west of the ROW. These areas are considered potential habitat for California spotted owl. Forest Service records show presence of spotted owl in Long and Antone Canyons, both of which occur within two miles of the Project ROW (CNDDB 2009).

Construction of the Project would result in 0.03 acre of permanent impacts to southern coast live oak riparian forest (SCLORF) within USFS lands (Table 1). The Project also would result in permanent impacts to 0.44 acre and temporary impacts to 1.09 acres of coast live oak woodland (CLOW) on USFS-administered lands. The Project would also result in permanent impacts to 0.23 acre and temporary impacts to 0.07 acre of SCLORF, and permanent impacts to 1.16 acre and temporary impacts to 0.90 acre CLOW on public and private lands within and adjacent to the Congressional Boundary. In addition, vegetation management associated with Project O&M activities along this portion of the Project ROW may result in a loss of some individual trees within these riparian areas. Mitigation for any loss of trees resulting from the Project follows that described in Mitigation Measure B-1a of Appendix B.

The California spotted owl is an MIS for mature, large diameter, high canopy closure conditions of montane conifer forest. They are generally permanent residents within their range, with territory size ranging from 100 to 600 acres (Zeiner et al. 1990). However, the USDA Forest Service (2005) notes that spotted owl territories in the CNF historically occur more frequently in live-oak/big-cone Douglas fir habitat than in riparian or coniferous forest and, where appropriate habitat is present, the species usually occurs in clusters with large areas of unsuitable habitat surrounding these clusters (Stephenson

and Calcarone 1999). Spotted owls are habitat specialists and have very specific stand requirements for nesting and foraging sites; based on a review of existing studies referenced in the USDA Forest Service MIS for the CNF (2007). Nesting and roosting sites typically have in excess of 70 percent canopy cover, foraging areas in excess of 50 percent canopy cover, and both areas have high total snag and downed woody debris densities per acre. Based on USFS vegetation type mapping for the CNF (USDA Forest Service 2009a), approximately 3,490 acres of riparian habitat, 14,752 acres of conifer forest, and 18,997 acres of broadleaf woodland (woodland dominated by trees that do not have needle-like leaves) occur forest-wide (not including any riparian or conifer forest habitat), all of which could contain potential spotted owl habitat. Given the species specific habitat requirements discussed above and the negative impacts of drought and wildlife on the owls' habitats from 2003 to 2008 in southern California, some percentage of the total 37,239 acres likely represents the actual potentially suitable spotted owl nesting and foraging habitat in the CNF.

The smallest spotted owl territories referenced in the available literature occur in lower elevation woodlands in the CNF where an abundance of wood rats exist (USDA Forest Service 2007). The USDA notes that a total of 35 territories occurr in the CNF; to be conservative, using the available data for the smallest home range size (98 to 243 acres) for spotted owls in the CNF, the suitable habitat utilized for the 35 spotted owl territories in the CNF would therefore range in total acreage from approximately 3,430 acres to 8,505 acres. This would be approximately 9 to 23 percent of the potentially suitable habitat mapped in the CNF outside of wilderness areas. These figures are presented to characterize the Project impacts to the spotted owl in the CNF and the Descanso District only, and not to suggest that all spotted owls in the CNF have home ranges that are between 98 and 243 acres in size. Based on this estimated range of potential spotted owl territory acreage in the CNF, the Project permanent and temporary impacts to riparian woodland and coast live oak woodland totaling 1.56 acres would permanently affect less than 0.02 percent to less than 0.05 percent of the potentially suitable habitat for the spotted owl within the CNF, not including any habitat for spotted owls that may occur in wilderness areas. Using a larger home range estimate for spotted owl habitat, as is typical in higher elevation, coniferous-dominated forests would render the potential Project impacts to spotted owl habitat even smaller.

Additionally, potential direct effects to California spotted owls include electrocution and collision risk. California spotted owl are unlikely to be at risk of electrocution because the birds are too small to simultaneously contact two energized phase conductors or an energized conductor and grounded hardware. However, the species is at risk of collision with towers and transmission lines. As previously mentioned, most collisions occur with migratory birds during spring migration when strong winds and storms are more likely to force the birds to fly at relatively low altitudes. However, collisions would be unlikely given the lack of observations of California spotted owl within the CNF along the Project ROW. In an effort to reduce the risk of any injury or fatality to individual spotted owl, mitigation measures will be implemented, such as the use of a biological monitor during all construction activities, limiting access to pre-determined access and public roads, as well as installing all above-ground lines, transformers, or conductors to fully comply with the Avian Power Line Interaction Committee (APLIC) 2006 standards to prevent avian fatality through electrocution and collision.

The USFS Conservation Strategy for the Spotted Owl (CASPO) focuses on preserving Protected Activity Centers (PACs) for the spotted owl. The Project impacts to riparian and woodland habitats will occur near the outer periphery of a historical nest site (e.g. 1.16 miles away), and in an area where focused surveys in 2009 did not detect any spotted owls. The direct impacts would not remove nesting habitat, but would instead occur within potential foraging habitat areas within the chaparral matrix. The USDA

Forest Service (2007) also notes that prime low-elevation habitats in the CNF for the spotted owl are dominated by narrow "stringers" of live oak and big cone Douglas-fir on north-facing slopes and in deep canyons, and these areas should be a high management priority. The Project impacts do not occur in these areas; they occur on south-facing slopes, lower in elevation that the distribution of big cone Douglas-fir, on chaparral dominated slopes interspersed with riparian woodland and small stands of coast live oak woodland.

Finally, Project impacts also would occur over one mile from any known or historical spotted owl locations in the Descanso District. Project activities are expected to occur during a limited time frame (e.g., 3 to 6 weeks at most tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). California spotted owl generally are permanent residents within their range. However, migrants potentially may be impacted by the Project if they were to pass through the Project ROW during construction or O&M activities.

Any potential effects to California spotted owl habitat would be avoided or minimized through the implementation of proposed mitigation measures. Mitigation for impacts to habitat include pre-construction surveys, exclusionary buffer areas in occupied areas, and habitat restoration and preservation. For instance, temporary impact areas would be re-vegetated following construction. Additionally, as noted in Mitigation Measure B-1a, direct impacts (removal and trimming), to native trees will be mitigated by replacement in-kind (by species) with ratios dependent on the size of tree. For instance, trees removed that are less than five inches diameter at breast height (DBH) shall be replaced at a 3:1 ratio; between five and twelve inches DBH at a 5:1 ratio; between twelve and 36 inches DBH at a 10:1 ratio; and greater than 36 inches DBH at a 20:1 ratio. For all trimmed native trees, the trees will be monitored for a period of three years, and if a trimmed tree declines or suffers mortality during that period, the tree shall be replaced in-kind at a 2:1 ratio for trees less than 12 inches DBH and 5:1 ratio for trees greater than 12 inches DBH. This exceeds the mitigation requirements identified in the Forest Plan, which requires any lost spotted owl habitat to be mitigated at a ratio of "up to a two-to-one basis" (USDA Forest Service 2005: Part III, Standard S21).

Project Indirect Effects to Habitat

Potential indirect impacts to habitat include increased fire frequency, construction noise, fugitive dust, and reduced habitat value caused by invasive species.

As described above, there is a risk of fire with the presence of power lines. Fires cause direct loss of vegetation communities, wildlife habitat, and wildlife species, and may lead to type conversion, which could impact the California spotted owl. Although considered unlikely, 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 Project, SDG&E shall re-seed all natural areas, both public and private, that are burned as a result of the Project-caused fire. Mitigation Measure B-1k (Appendix B) addresses type conversion and re-seeding after a transmission line caused fire. In addition, installation of towers and access roads could result in the introduction of invasive plant species; however, a Weed Control Plan would be implemented to reduce the effects of invasive plants (Mitigation Measure B-3a, Appendix B).

Construction noise could cause a temporary, indirect impact to California spotted owls outside of the Project ROW, some of which may be displaced from the vicinity of the construction areas. Any displaced birds would be expected to return to the area following construction. If Project construction (not vegetation clearing or tree trimming/removal), including the use of helicopters, cannot occur completely

outside the raptor breeding season, then pre-construction surveys for active raptor nests shall be conducted by a qualified biologist within 500 feet of the construction zone within ten calendar days prior to the initiation of construction that would occur within January 1 and September 15 (Mitigation Measure B-8a, Appendix B). If active nests are identified, the Wildlife Agencies would be contacted regarding an appropriate exclusionary buffer zone around the nest site. In this case, construction may occur if noise levels do not exceed 60dB an hour Leq at the edge of the nesting territory (Mitigation Measure B-8a, Appendix B).

Fugitive dust released from construction activities, such as grading, excavation, and driving on unpaved roadways, would be considered an indirect impact that could degrade the quality of occupied California spotted owl habitat. To offset these indirect impacts during construction, all cleared areas would be regularly watered, and a 15 mile-per-hour speed limit shall be observed on dirt access roads to reduce fugitive dust (BIO-APM-3, Appendix B). Tree removal for clearing activities shall take place between August 16 and January 14 outside of the general avian breeding season. If tree trimming or removal takes place between January 15 and August 15, pre-construction surveys and monitoring for breeding birds (Mitigation Measure B-8a, Appendix B) would take place within 100 feet of the construction zone within ten calendar days prior to the initiation of construction.

Cumulative Effects to Habitat

Cumulative effects to California spotted owl are considered over a reasonably foreseeable timeframe of ten years. As noted above, the projects considered in the cumulative analysis occur within 8 miles of the Project ROW within and outside of the CNF, to encompass the known dispersal distance of the species in San Diego County (USDA Forest Service 2005). The full list of cumulative projects with the potential to impact California spotted owl is included as Appendix C.

Within the CNF in general, conservation of riparian areas has been a top priority since at least the 1980s, and the Forest has implemented measures to enhance and protect these areas. Protecting riparian habitat, which is home to many owls within the chaparral matrix (USDA Forest Service 2007), has increased the quality of habitat for this species. Riparian habitat improvement forest-wide is the result of closure of two miles of unauthorized roads, and exclusion of grazing from over 12,000 acres (centered on riparian areas) in the CNF.

There are a wide range of threats to the California spotted owl in the CNF, including unnatural fuel build-up, fuels management activities, drought, air pollution, forest fragmentation, and human disturbance related to special uses, roads, and recreation. Cumulative projects identified within the CNF in or near the Project boundaries are mainly residential and local improvements projects. Cumulative projects that may affect California spotted owl in the analysis area include the Conejos Road Special Use Permit (Conejos Road to the Capitan Grande Indian Reservation), Old Highway 80 and Pine Creek Road Intersection Improvements (between State Highway 79 and Pine Creek Road), and Sweetwater and Viejas Creek Fuels Treatment Project. These cumulative projects may decrease suitable habitat for the species or increase noise and human disturbance.

The California spotted owl was not detected within the CNF along the Project ROW during any 2009 surveys. Impacts of the cumulative projects would be expected to be limited to the immediate area of that individual project, and would not be anticipated to significantly affect the quantity or quality of spotted owl territories in the cumulative effects analysis area or CNF. These cumulative projects, as well as the Project, would be required to avoid or minimize impacts to optimal spotted owl habitats and known territories, including riparian habitat, woodlands and coniferous forest within the CNF to be

consistent with the LMP. In addition, Bigcone Douglas-fir, White fir, and conifer forest communities that are favored by this species will not be directly affected within the Project ROW.

Suitable habitat for the California spotted owl was identified during monitoring surveys conducted by Chambers Group in 2009 in several areas (within 1,000 feet of the Project ROW), including just east of structures P31-1 through P26-1, directly adjacent to structure EP24-1, and east of structure EP23-2 (Chambers Group Inc., 2009). Although suitable habitat is present within and directly adjacent (within 1,000 feet) to the Project ROW at the above listed locations, the closest recorded occurrence of the California spotted owl is more than one mile from the proposed structure P138-2.

While Project contributions to cumulative effects to California spotted owl may be adverse, they would not be considered substantial for several reasons. Direct habitat impacts to USFS lands resulting from the Project construction and O&M activities are limited to 0.47 acres of permanent and 1.09 acres of temporary habitat disturbance. Project impacts to private and other public lands within and adjacent to the Congressional Boundary are limited to 1.39 acres of permanent and 0.97 acres of temporary habitat impacts. These localized, direct impacts will be mitigated in-kind and will not contribute to a decline in the quantity of spotted owl habitat within the Project ROW. Based on the fact that spotted owl nesting and foraging sites have extremely specific stand requirements and that 9 to 23 percent of the 37,249 acres of riparian habitat, broadleaf woodland and coniferous forest mapped on USFS lands within the CNF (excepting wilderness areas) by the USDA Forest Service (2009a) may represent potentially suitable nesting or foraging habitat for the spotted owl, Project impacts (to riparian woodland and coast live oak woodland) would permanently affect less than 0.02 to 0.05 percent of the potentially suitable habitat for the spotted owl on the Forest.

Given the limited area of effect and the proposed mitigation measures, the proposed Project would not have a substantial incremental cumulative effect on California spotted owl habitat, and the overall effects are not expected to cause a decline in the population of this species within the CNF. The Project, in combination with past, present, and reasonably foreseeable future actions, would not reduce the quantity and quality of California spotted owl habitat in the analysis area.

Summary of Habitat and Population Status and Trend at the Forest Scale

The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the Project must be informed by habitat and population monitoring data. The discussions below summarize the habitat status and trend data, and population trend data for the California spotted owl. This information is drawn from the detailed information on habitat and population trends in the CNF MIS Report (USDA Forest Service 2007).

Habitat Status and Trend

California spotted owl habitat condition on the CNF appears to be deteriorating. Recent droughts and insect infestations, including the gold-spotted oak borer, have caused noticeable tree mortality in many southern California mountain ranges, including the Laguna Mountains. In addition, several California spotted owl territories in the adjacent Cuyamaca Rancho State Park were damaged or destroyed by the Cedar Fire in 2003.

Population Status and Trend

Insufficient data exist to indicate population trends for California spotted owls on the CNF. However, a combined total of 30 territories (20 on and 10 off the CNF) were monitored in 2005 and/or 2006. Of these, only eight were occupied for an occupancy rate of 27 percent. This occupancy rate is much lower

than those detected in previous survey efforts (1987-1995), when occupancy rates were typically 55 to 60 percent (USDA Forest Service 2007).

Relationship of Project-Level Effects to Forest-Scale Habitat Trends

The CNF MIS report (USDA Forest Service 2007) states that the habitat status and trend for spotted owl is declining as a result of multiple years of drought and subsequent attack by insects, particularly the gold spotted oak borer.

In 2009, Chambers Group identified suitable habitat that the Project ROW crosses or is adjacent (within 1,000 feet) to for the California spotted owl in several areas, including just east of structures P31 through EP26-1, directly adjacent to structure EP24-1, and east of structure EP23-2. Conservation of riparian areas has been a top priority for the CNF since at least the 1980s, and the Forest has implemented measures to enhance and protect these areas. Protecting riparian habitat, which is home to many owls within the chaparral matrix (USDA Forest Service 2007), has increased the quality and quantity of habitat for this species. In addition, Bigcone Douglas-fir, White fir, and conifer forest communities that are favored by this species will not be affected within the Project ROW. Although suitable habitat is present within and directly adjacent (within 1,000 feet) to the Project ROW at the above listed locations, the closest recorded occurrence of the California spotted owl is more than one mile from the proposed structure EP138-1, and direct impacts to potential habitat are minimal. The Project would result in 1.56 acres of total impacts to potential habitat on USFS-administered lands within CNF, including 0.03 acre permanent impacts to southern coast live oak riparian forest, and 0.44 acre permanent and 1.09 acre temporary impacts to coast live oak woodland. Mitigation also would be completed through impact minimization measures, including pre-construction surveys and exclusionary buffer areas in occupied areas, as well as replacement in kind (by species), as discussed above. These replacement ratios exceed the mitigation requirements identified in the Forest Plan, which requires any lost spotted owl habitat to be mitigated at a ratio of "up to a two-to-one basis" (USDA Forest Service 2005: Part III, Standard S21).

Project impacts on Forest Service-administered lands would be mitigated within the CNF through onsite restoration of 0.44 acre of temporary impacts and approximately 3.60 acres of offsite preservation, including 0.09 acre of riparian forest and 3.50 acres of coast live oak woodland. Project impacts to private and other public lands within and adjacent to the CNF Congressional boundary would also be mitigated at the same percentages. This mitigation area is a small portion of any given territory for a spotted owl, but an overall reduction in habitat area or quality would not result from the Project. The Project would not result in a net reduction of nesting or foraging habitat area for the spotted owl and would assist in maintaining available habitat for the California spotted owl in the Descanso District and forest-wide in the CNF.

Relationship of Project-Level Effects to Forest-Scale Population Trends

The CNF MIS report states that in 1994, the Southern California Spotted Owl Biologist Team documented a total of 36 territories on the CNF. USFS surveys since this time indicate that there is not enough data to indicate population trends for spotted owl on the CNF (USDA Forest Service 2007).

Structures EP132-2 through EP137 will be constructed and maintained by helicopter. Although the helicopter noise would be relatively short in duration during construction activities, the noise may cause California spotted owls to temporarily avoid this area during construction. If Project construction (not vegetation clearing or tree trimming/removal), including the use of helicopters cannot occur completely outside the raptor breeding season, then preconstruction surveys for active raptor nests shall be

conducted by a qualified biologist within 500 feet of the construction zone within 10 calendar days prior to the initiation of construction that would occur within January 1 and September 15 (Mitigation Measure B-8a, Appendix B). If active nests are identified, the Wildlife Agencies would be contacted regarding an appropriate exclusionary buffer zone around the nest site. In this case, construction may occur if noise levels do not exceed 60dB an hour Leq at the edge of the nesting territory (Mitigation Measure B-8a, Appendix B). The use of helicopters for maintenance activities would be limited to several times per year and would again cause a temporary noise disturbance to owls that may reside in this area. Further, electrocution and collision risk for this species as a result of the Project is considered low. Overall, given the limited amount of potential spotted owl habitat affected by the Project (approximately 0.47 acre permanent impacts and 1.09 acres temporary impacts), and the implementation of mitigation measures, including conducting pre-construction nesting bird surveys (Mitigation Measure B-8a), avoidance of work outside of the general raptor and nesting bird season (Mitigation Measure B-12a), and providing onsite restoration of temporary impacts, in-kind preservation of woodland habitat within the CNF for permanent impacts, and mitigation for tree impacts (Mitigation Measures B-1a, B-2a), the Project is not expected to affect the current population status or trend for this species.

5.5. MULE DEER

The mule deer was selected as a MIS to determine if shrub, woodland, and forests are being managed adequately to provide the quality and quantity of habitat for species dependent on or strongly associated with large blocks of healthy, diverse habitats with low to moderate disturbance (USDA Forest Service 2007). The goal of management is to ensure that a mosaic of meadow, woodland, and shrub habitats are maintained or improved for such species as the mule deer. Prescribed burning is a management tool that helps keep a continued supply of high-quality forage in proximity to cover areas for mule deer.

5.5.1 Natural History

The mule deer is a widespread species that occurs over much of western North America from Alaska, through western Canada and the western United States, into Baja California and the southern end of the Mexican Plateau (USDA Forest Service 2007).

The mule deer occurs in a wide variety of habitats, but in southern California forests, it occurs in the highest densities in oak woodlands and riparian areas, scrublands, and grasslands (USDA Forest Service 2007). It typically prefers ecotone habitats, where there is a mosaic of dense shrubs for cover and new shrub growth and grasses for food. Fawning typically occurs in higher elevation meadows and woodlands with trees or shrubs that provide protection for birthing does and newborns. Wintering habitat is in lower elevation meadows and woodlands, as well as open sage scrub and chaparral, such as that which occurs in the first several years after a fire. Because fire and other forms of disturbance open up vegetation and provide new foraging options for deer, lack of fire, which results in denser vegetation, has a detrimental effect on mule deer habitat quality (USDA Forest Service 2007).

5.5.2 Status and Trends

One of the primary threats to mule deer at higher elevations is fire suppression, which results in denser, lower quality habitat. Vegetation thinning to protect nearby communities is improving habitat conditions for mule deer in these areas. Conversely, the high frequency of large wildfires in recent years may be negatively affecting mule deer habitat at lower elevations, converting shrublands to grasslands.

Additionally, urban development is expanding in the region at an unprecedented rate (USDA Forest Service 2007), removing mule deer habitat as it expands.

5.5.3 Project-level Effects Analysis based on Habitat and Population Data

Key Habitat Factor(s) for the Analysis
Mule deer was selected as a MIS to indicate the presence of healthy diverse habitats.

Analysis Area for Project-level Effects Analysis
Mule deer and suitable mule deer habitat are found throughout CNF. As identified in Section 3.1, the analysis area for the Project's direct and indirect effects to mule deer focuses on the Project ROW and a buffer of approximately 660 feet outside the ROW. Additionally, the Project's potential cumulative effects considers past, present, and reasonably foreseeable projects located within 15 miles of the Project ROW within and outside of the CNF, to encompass the known dispersal distance of the species in San Diego County (USDA Forest Service 2005).

Current Condition of the Key Habitat Factor(s) in the Analysis Area
All of the analysis area is suitable habitat for mule deer. The current condition of mule deer habitat on and adjacent to the CNF is a mixture of large blocks of undisturbed habitat separated by private in-holdings and developments, and by Forest Service roads or other facilities and features, such as campgrounds, fire stations, and trails. Overall, healthy diverse habitats are present on National Forest System lands in the analysis area.

Project Direct Effects to Habitat
Mule deer observations were noted throughout the Project ROW where it crosses the CNF during numerous Project-related surveys. However, specific locations were not recorded on all maps. The mule deer is a wide-ranging species with broad habitat requirements, including woodland, grassland, and shrubland, so all habitats within the CNF are considered occupied for the purpose of this assessment. Forest-wide, this would include over 460,000 acres and within the Descanso District of the CNF, this would include over 214,000 acres of potentially suitable habitat areas comprised of many vegetation communities. The Project ROW, within and adjacent to the CNF Congressional boundary, plus the area in its immediate vicinity (within 660' of the ROW) totals approximately 13,237.12 acres. The Project ROW would permanently impact approximately 43.96 acres, and temporarily impact approximately 48.28 acres, of potential mule deer habitat on USFS-managed lands within the CNF Congressional boundary. Additionally, the Project ROW would permanently impact a total of approximately 92.98 acres, and temporarily impact approximately 36.03 acres, of potential mule deer habitat on other public and private lands within and adjacent to the CNF Congressional boundary. Permanent impacts would occur from construction of towers and access roads. Any required thinning of vegetation would not be expected to reduce the mule deer habitat quality since this species is often drawn to disturbed areas with new foraging opportunities. Temporary impacts would occur from clearing conducted for staging areas, stringing sites, and helicopter pads, as well as necessary clearing around the tower footings. All temporary impact areas would be re-vegetated following construction.

For all locations of the Project that occur on the CNF, temporary and permanent impacts to mule deer habitat would be mitigated as part of the habitat mitigation described in the FEIR/EIS (Aspen 2008a). Mitigation for temporary impacts would include an on-site restoration component. Permanent impacts to habitat would be mitigated off-site through acquisition and preservation of habitat. A combination of Mitigation Measures found in Appendix B will minimize direct effects to mule deer as a result of the

Project. These measures include limiting speed limits on access roads to 15 mph to reduce the potential of vehicle impacts and to reduce dust levels, permanently closing access roads no longer required, restricting the construction of access and spur roads during the design phase, and gating (where acceptable to the Forest Service) all access roads. These measures are designed to avoid impacts to mule deer from a variety of factors, including access by hunters.

Project Indirect Effects to Habitat

Potential indirect impacts to mule deer include construction noise, fugitive dust, and increased fire risk/habitat type conversion.

Construction noise could cause a temporary, indirect impact to mule deer outside of the Project ROW, and may displace some individuals. Any displaced deer would be expected to return to the area following construction.

Fires cause direct loss of vegetation communities, wildlife habitat, and wildlife species. Fires are a natural phenomenon and have been shown to improve the quality of shrub habitats, which open up the vegetation and improve access for mule deer. Frequently burned areas can cause type conversion, allowing invasion by opportunistic non-native annual grasses and resulting in habitat type conversion from chaparral to non-native grassland, which would impact mule deer. Although considered unlikely, 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 Project, SDG&E shall re-seed all natural areas, both public and private, that are burned as a result of the Project-caused fire. Mitigation Measure B-1k (Appendix B) addresses type conversion and re-seeding after a transmission line caused fire.

Fugitive dust released by such construction activities as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways would be considered an indirect impact that could degrade the quality of occupied mule deer habitat. To offset these indirect impacts during construction, all cleared areas would be regularly watered to reduce fugitive dust (BIO-APM-3, Appendix B). Additionally, a 15 mph speed limit shall be observed on dirt access roads to reduce dust (BIO-APM-3, Appendix B).

Cumulative Effects to Habitat

Cumulative effects to mule deer are considered over a reasonably foreseeable timeframe of ten years. As noted, the projects considered in the cumulative analysis occur within 15 miles of the Project ROW within and outside of the CNF, to encompass the known dispersal distance of the species in San Diego County (USDA Forest Service 2005). In addition to the cumulative analysis area, large renewable energy projects over 15 miles from the Project ROW were included. The full list of cumulative projects with potential to impact the mule deer is included as Appendix C.

Within the CNF in general, the primary influences to mule deer habitats are due to development and disturbance by roads, people, and dogs. Several other factors, such as hunting, poaching, traffic, natural predation, and diseases also affect mule deer population numbers. Fuels treatment projects on the CNF, including within the analysis area, have likely had both short-term negative and positive effects and longer term beneficial effects on mule deer habitats. Because of the way these treatments have been and will be spread spatially across the landscape, the effects of these projects are not likely to result in long-term negative effects to mule deer populations or habitats. In fact, by changing the vegetation to earlier successional stages and creating openings, it is likely that there have been some longer-term improvements in habitat for deer. Riparian and meadow habitats within and adjacent to the CNF on

federal and non-federal lands has been affected by development, water diversions, and grazing over the years, reducing the amount and quality of these habitat types. As such, effects to mule deer populations likely have occurred due to reduction in habitat quality and quantity for fawning, water sources, and movement corridors. Demands on water, and thus riparian/meadow habitats, will likely continue to increase with increasing human populations. Migratory mule deer establish distinct summer and winter home ranges and use approximately the same home ranges in consecutive years. Non-migratory mule deer maintain year-long home ranges. Home range size increases as distance between food, cover, and water sources increase (Anderson and Wallmo 1984).

In general, housing developments in and adjacent to the CNF will result in increased recreational uses in the Project ROW, particularly in some of the more accessible areas and along National Forest System roads, including riparian habitats. Hunting and poaching pressures in the area also may increase as human populations increase with development. Additionally, associated increases in vehicle traffic on existing routes will likewise result in more injuries and deaths of mule deer while also reducing the quality of movement corridors that are bisected by busier roadways.

Cumulative projects identified in or near both the CNF and the Project ROW include residential subdivisions, local improvement, and research projects, including 12 residential projects (approximately 921 acres total), Old Highway 80 and Pine Creek Road (between State Highway 79 and Pine Creek Road), the gold spotted oak borer study, and Laguna and Laguna Meadow allotments range analysis. Cumulative projects that may construct new structures beyond 15 miles of the Project ROW include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, and ENPEX Power Plant. As discussed above, the Project may result in some direct or indirect effects to mule deer habitat and, as a result, may contribute cumulative effects. These effects may be adverse, but would not be considered substantial due to the limited area of effect. The Project ROW would permanently impact approximately 43.96 acres, and temporarily impact approximately 48.28 acres, of potential mule deer habitat on USFS-managed lands within the CNF Congressional boundary, or less than 0.1 percent of the available habitats for mule deer in the Descanso District of the CNF, and an even smaller percentage forest-wide. Additionally, the Project ROW would permanently impact a total of approximately 92.98 acres, and temporarily impact approximately 36.03 acres, on other public and private lands within and adjacent to the CNF Congressional boundary. The Project is not expected to pose a barrier to mule deer movement during or after construction, given the nature of transmission line facilities and the ease with which mule deer cross beneath them, and implementation of proposed mitigation measures will further avoid or minimize any adverse impacts. As a result, the Project is not likely to have a substantial incremental effect on mule deer habitat, and the overall effects are not expected to cause a decline in the population of this species within the CNF. The Project, in combination with past, present, and reasonably foreseeable future actions, would not reduce the quality and quantity of mule deer habitat in the analysis area.

Summary of Habitat and Population Status and Trend at the Forest Scale

The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the Project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population status and trend data for mule deer. This information is drawn from the detailed information on habitat and population trends in the CNF MIS Report (USDA Forest Service 2007).

Habitat Status and Trend

Mule deer habitat condition on the CNF appears to be improving, in some cases due to increased acreage of wildfire in recent years and improved management of conflicting uses in critical areas, such as riparian habitats and meadows. Grazing reductions have resulted in improved riparian habitat conditions. Threats include increased recreation in riparian areas, grazing, and too-frequent fire and resulting type conversion in chaparral and coastal sage scrub.

Population Status and Trend

As the CNF MIS Report explains, trends in mule deer populations are difficult to detect, but can be estimated using data from California Department of Fish and Game related to the State's hunting programs. The current population status and trend for mule deer in California is secure. Within CNF, data suggests a declining population from levels seen in the 1960s and 1970s. Mule deer herds have declined from historic population levels due to high human disturbance levels (e.g., recreation) in meadows and riparian areas, gradual drying of streams, meadows and riparian areas from diversion and pumping for human use, and high road densities in some prime deer habitat (USDA Forest Service 2007). Current management under the new LMP anticipates increasing herd size over the next four decades, at which time it is expected to stabilize.

Relationship of Project-Level Effects to Forest-Scale Habitat Trends

The CNF MIS report (USDA Forest Service 2007) states that mule deer habitat is improving in some areas due to wildfires, which create openings and new growth for foraging, and improved management of conflicting uses (e.g., reduction in grazing). However, habitat quality is declining in other areas of the CNF due to overly frequent wildfires in the same areas that have resulted in type conversion of scrub habitat into grasslands. Vegetation management activities by the CNF in the analysis area would provide short-term benefits to foraging habitat for mule deer, and grazing activities would continue to be managed to retain sufficient deer forage.

The Project would impact mule deer habitat on the CNF, which would generally be dispersed across the landscape (e.g., there are approximately four towers per mile). Some new access roads would be constructed on the CNF for use during construction and maintenance. However, these roads will be closed, gated, and/or patrolled once construction is complete to prevent unauthorized access, in accordance with Mitigation Measure B-1a (Appendix B). Additionally, the Project ROW will directly impact only 92.24 acres of potential mule deer habitat on USFS-administered lands within CNF (43.96 acres of which are considered permanent impacts) and result in an additional 92.98 permanent and 36.03 temporary impacts to private and other public lands within and adjacent to the CNF Congressional boundary, as compared to over 214,000 acres of potential habitat in the Descanso District and over 460,000 acres forest-wide.

Moreover, the access roads, maintained tower pads, and work areas will create more edge habitat and are expected to create openings in some areas of dense chaparral habitat, both of which are considered improvements to habitat quality for mule deer. Similarly, vegetation management conducted for Project O&M, including periodic trimming of vegetation around access roads, tower pads and TSAPs would help maintain these habitat edge effects and potentially improve habitat quality for mule deer. The Project is expected, therefore, minimally to contribute beneficially to the current habitat status and trends on the CNF.

Relationship of Project-Level Effects to Forest-Scale Population Trends

The CNF MIS report (USDA Forest Service 2007) states that there is a negative population trend for mule deer on the CNF, however, current management under the new LMP anticipates increasing herd size over the next four decades, at which time it should stabilize. Population trends are based on population monitoring and kill records.

The Project is not expected to affect the current population status or trends because of the intermittent nature of construction and maintenance activities at each Project feature and because the impacts would be dispersed across the landscape. Construction at each tower location would occur over short periods of time, which will allow mule deer to disperse into nearby habitat areas during construction. Mule deer are expected to return to these areas once construction is complete. Vehicles and personnel would use access roads several times per year for maintenance activities, which would result in only minor disturbance if mule deer are in these areas during maintenance (see Section D.2.16 of the FEIR/EIS for a description of maintenance activities, [Aspen 2008b]).

5.6. MOUNTAIN LION

The mountain lion was selected as a MIS to evaluate management of habitat fragmentation and maintenance of habitat linkages (USDA Forest Service 2007). The biggest threat to mountain lions in southern California is habitat fragmentation and isolation by urban and agricultural development, as well as construction of freeways and highways (USDA Forest Service 2007). The management goal for mountain lions is to maintain functional landscape linkages and populations well distributed through National Forests.

5.6.1 Natural History

The mountain lion is a wide-ranging species occurring throughout much of the western hemisphere, from western Canada and the western United States, south through Mexico, Central America, and nearly all of South America east of the Andes. It occurs in a wide variety of habitats, including deserts, woodlands, grasslands, and scrublands, especially in areas that support mule deer, which in this region, are its primary prey item. As a top predator, mountain lions occur in low densities with very large home ranges, averaging nearly 23,000 acres for females and 90,000 acres for males (USDA Forest Service 2007). As a result, mountain lion habitat quality is dependent on large areas of contiguous habitat.

Fragmentation can reduce the carrying capacity for prey species, which, in turn, reduces the carrying capacity for mountain lions. Habitat linkages are important for mountain lions because they connect otherwise isolated habitat patches, allowing mountain lions to move between different sections of their home ranges.

5.6.2 Status and Trends

Mountain lion populations are dependent on the abundance of their prey. As mule deer comprise the majority of the mountain lion diet in this region, CNF mountain lion populations are largely dependent on the abundance of mule deer. While population data on mountain lion numbers are generally lacking, there has been a slow decline of mule deer populations within the CNF due to increased wildfire frequency and expansion of adjacent development (USDA Forest Service 2007). This suggests the mountain lion numbers also may be in decline. Vegetation thinning for fuel management has opened up scrub habitat for mule deer, thereby improving its value for mountain lions.

5.6.3 Project-level Effects Analysis based on Habitat Data

Key Habitat Factor(s) for the Analysis
Mountain lion was selected as a MIS to provide an index for habitat fragmentation.

Analysis Area for Project-level Effects Analysis
Suitable mountain lion habitat is found throughout CNF. As identified in Section 3.1, the analysis area for the Project's direct and indirect effects to mountain lion focuses on the Project ROW and a buffer of approximately 660 feet outside the ROW. Additionally, the Project's potential cumulative effects considers past, present, and reasonably foreseeable projects located within 20 miles from the Project ROW, in addition to several larger renewable energy projects over 20 miles from the CNF, to encompass the known dispersal distance and home range (as low as 20 square miles to over 100 square miles) of the species in San Diego County (USDA Forest Service 2005).

Current Condition of the Key Habitat Factor(s) in the Analysis Area
All of the analysis area is suitable mountain lion habitat. The current condition of lion habitat in the Project ROW is a mixture of large blocks of undisturbed habitat separated by private in-holdings and developments, and by Forest Service roads or other facilities and features, such as campgrounds, fire stations, and trails. Overall, habitat fragmentation is at a low level on National Forest System lands in the analysis area.

Project Direct Effects to Habitat
Mountain lion sign was recorded in two locations within the CNF during vegetation mapping and focused surveys for the Project alternatives in 2007, both of which were just southwest of Cedar Creek within the 'Route D Alternative' right-of-way, which was not ultimately included in the selected alignment for the Project. In addition, mountain lion tracks and/or scat were observed near EP148-1 approximately 0.5 miles west of the end of McCain Valley Road, approximately ¼ mile north of EP152-2 along a wash, near the stringing site for EP141, in the Cameron Fly Yard off the Cameron Truck Trail, and near the La Posta Truck Trail/Thing Valley Ranch Road intersection during monitoring activities conducted by Chambers Group in 2009 – 2010 (Chambers Group 2009 – 2010).

This species has very large home ranges and can occur in a wide variety of habitats. The CNF contains approximately 460,000 acres of potentially suitable habitat for mountain lion, and the Descanso District contains over 214,000 acres of potential habitat. The Project ROW, within and adjacent to the CNF Congressional boundary, plus its immediate vicinity (within 660' of the ROW) totals approximately 13,237.12 acres. The Project ROW would permanently impact approximately 43.96 acres, and temporarily impact approximately 48.28 acres, of potential mountain lion habitat on USFS-managed lands within the CNF Congressional boundary. Additionally, the Project ROW would permanently impact a total of approximately 92.98 acres, and temporarily impact approximately 36.03 acres, of potential mountain lion habitat on other public and private lands within and adjacent to the CNF Congressional boundary. The Project would impact less than 0.05 percent of the potentially suitable habitat for mountain lion in the Descanso District, and a lower percentage forest-wide.

Direct, permanent impacts to mountain lion habitat would result from tower, TSAPs, and access road construction along the Project ROW. However, vegetation thinning associated with project construction and O&M activities is expected to attract mule deer, the primary prey of the mountain lion, so it would not substantially reduce mountain lion habitat quality. Temporary impacts would occur from clearing

required for staging areas, stringing sites, and temporary helicopter pads, as well as necessary clearing around the tower footings. All temporary impact areas would be re-vegetated following construction.

Temporary and permanent impacts to mountain lion habitat would be mitigated for as part of the habitat mitigation described in the FEIR/EIS (Aspen 2008a). Temporary impacts would be mitigated at a 1:1 to 3:1 ratio, depending on the specific habitat impacted. Mitigation for temporary impacts include 1:1 ratio of onsite restoration. Permanent impacts to habitat would be mitigated off-site through acquisition and preservation of lands at a 1:1 to 3:1 ratio, depending on the specific habitat impacted (Appendix B).

Project Indirect Effects to Habitat

Potential indirect impacts to mountain lions include construction noise, fugitive dust, increased fire risk, and habitat type conversion.

Construction noise could cause a temporary, indirect impact to mountain lions outside of the Project ROW, and may displace some individuals. However, given the very large home range of this species, any displaced individuals would be expected to move to other suitable areas of their home ranges during construction.

Fugitive dust released by construction activities, such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways, would be considered an indirect impact that could degrade the quality of occupied mountain lion habitat. To offset these indirect impacts during construction, all cleared areas would be regularly watered to reduce fugitive dust (BIO-APM-3, Appendix B). Additionally, a 15 mph speed limit shall be observed on dirt access roads to reduce dust (BIO-APM-3, Appendix B).

Installation of high voltage power lines creates a fire risk. On one hand, fires are a natural phenomenon and have been shown to improve the quality of shrub habitats for mountain lions by opening up the vegetation and improving access for mule deer, a primary prey item. Conversely, a frequent fire regime could result in habitat type conversion, allowing invasion by opportunistic non-native annual grasses and resulting in habitat type conversion from chaparral to non-native grassland. Such type conversion would reduce habitat quality and would be considered an indirect impact to mountain lions. Although considered unlikely, 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 Project, SDG&E shall re-seed all natural areas, both public and private, that are burned as a result of the Project-caused fire. Mitigation Measure B-1k (Appendix B) addresses type conversion and re-seeding after a transmission line caused fire. Impacts from fire/type conversion would be treated as a temporary impact and would be mitigated with restoration at a 1:1 ratio.

Cumulative Effects to Habitat

Cumulative effects to mountain lion are considered over a reasonably foreseeable timeframe of ten years. As noted, the projects considered in the cumulative analysis occur over 10 miles from CNF to encompass the known dispersal distance of the species in San Diego County (USDA Forest Service 2005). The full list of cumulative projects with potential to impact the mountain lion is included as Appendix C.

Within the CNF in general, fuels treatment projects in the CNF have likely had some effect on mountain lion populations. Because of the way these treatments have been and are planned to be spread spatially across the landscape, the effects of the projects cumulatively are not likely to result in long-term negative effects to the mountain lion population. In fact, by changing the vegetation to earlier successional stages and creating openings, it is likely that there have been some short-term

improvements in habitat for mule deer, and thus resulted in increases in the prey base for mountain lions in multiple project areas. None of the recently implemented projects or currently planned vegetation treatment projects is expected to adversely affect mountain lion corridors.

The San Diego (Laguna Mountains) population of mountain lions disperses to the Sierra Juarez Mountains in Baja Norte, Mexico. In general, the mountain lion is considered imperiled in Southern California due to a loss of connectivity between habitat areas, and loss of back country areas of sufficient size to sustain a population of individuals in the CNF. The Project would not affect the critical landscape linkages between the Santa Ana Mountains and the Chino Hills and the Palomar Mountain range, which is identified as an area of concern in southern California.

Influences to prey, such as hunting, seasonal fluctuations, or diseases that affect mule deer populations, probably have the greatest influences on mountain lion numbers (see mule deer discussion). In general, increasing urbanization and agricultural pressure outside the CNF boundary may reduce deer populations on surrounding lands. As a result, mountain lions may attack more pets and livestock or otherwise threaten local communities, leading to more depredation permits issued to kill lions. Proposed and planned housing developments in and around the CNF will result in increased recreational uses in the Project ROW, particularly in some of the more accessible riparian zones that are likely used as movement corridors by mountain lions. Hunting and poaching pressures in the area may also increase as human populations adjacent to the Project ROW increase with development, affecting both deer and mountain lion populations. Additionally, associated increases in vehicle traffic will result in more injuries and deaths of deer and mountain lions and reduce the quality of movement corridors that are bisected by busier roadways.

Cumulative projects identified in or near both the CNF and the Project ROW mainly include residential subdivisions (approximately 921 acres), local improvement projects and research projects, including Old Highway 80 and Pine Creek Road, the gold spotted oak borer study, and Laguna and Laguna Meadow allotments range analysis. In addition, cumulative projects that may construct new structures beyond 20 miles of the Project ROW include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, and ENPEX Power Plant. These cumulative projects potentially would contribute to cumulative impacts by increasing urbanization, potentially increasing barriers to movement, and influencing prey availability, in addition to increased human interaction and disturbance.

As discussed above, the Project may result in some direct or indirect effects to mountain lion habitat and, as a result, may contribute cumulative effects. These effects may be adverse, but would not be considered substantial due to the limited area of effect. The Project ROW would permanently impact approximately 43.96 acres, and temporarily impact another 48.28 acres, of potential mountain lion habitat that would be revegetated following completion of Project construction. The small size of the permanent impacts at tower sites (e.g., generally under 0.25 acre) and relatively large distance between the impact sites (e.g. generally around 0.25 mile) would not be expected to contribute to habitat fragmentation effects within the CNF. Additionally, the Project ROW would permanently impact a total of approximately 92.98 acres, and temporarily impact approximately 36.03 acres, on other public and private lands within and adjacent to the CNF Congressional boundary. The Project would not restrict the movement of mountain lion in the impacted habitat areas after Project construction given the nature of transmission line facilities and the mountain lion's ability to move easily below the facility, and implementation of the proposed mitigation measures would be expected to further avoid or minimize any adverse impacts. Additionally, as noted above, vegetation management activities in the analysis

area would likely provide short-term benefits to foraging habitat for deer with likely benefits to mountain lions. As a result, the proposed Project is not likely to have a substantial incremental effect, and the overall effects are not expected to cause a decline in the population of this species within the CNF. The Project, in combination with past, present, and reasonably foreseeable future actions, would not reduce the quality and quantity of mountain lion habitat in the analysis area.

Summary of Habitat and Population Status and Trend at the Forest Scale

The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the Project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population trend data for mountain lion. This information is drawn from the detailed information on habitat and population trends in the CNF MIS Report (USDA Forest Service 2007).

Habitat Status and Trend

Mountain lion habitat condition on the CNF appears to be stable or improving. **"**The CNF has good habitat for the mountain lion (USDA Forest Service 2007)." Deer herds have declined from historic times for many reasons, but are expected to rise with implementation of LMP management direction. The creation of edge and early successional habitat for fuel management benefits mule deer and foraging areas for mountain lions. In addition, the recent large burns on the CNF also should benefit deer and mountain lion (USDA Forest Service 2007).

Population Status and Trend

Populations of mountain lions in southern California are becoming fragmented at an increasing rate due to freeways and urbanization. Based on the review of studies and contacts with mountain lion experts, it appears that long-term viability of mountain lions in southern California may be at risk due to existing and planned developments and freeway construction on and off National Forest System land.

Relationship of Project-Level Effects to Forest-Scale Habitat Trends

The CNF MIS report (USDA Forest Service 2007) states that good mountain lion habitat exists on the CNF. As local mountain lion populations are partially dependent on the presence of mule deer, factors that affect mule deer habitat similarly affect mountain lion habitat. Some areas of mountain lion habitat are improving because wildfire and vegetation thinning are improving their value for mule deer. However, habitat quality is declining in other areas of the CNF because wildfires have been too frequent in the same areas that have resulted in type conversion of scrub habitat into grasslands. Vegetation management activities by the CNF in the analysis area would provide short-term benefits to foraging habitat for deer with likely benefits to mountain lions, and grazing activities would continue to be managed to retain sufficient deer forage and other lion prey.

The Project would generally be dispersed across the landscape (e.g., tower locations are approximately 1,200 to 1,400 feet apart). Approximately 2.10 acres of new access roads would be constructed on the CNF to facilitate Project construction and O&M activities. These roads will be closed, gated, and/or patrolled once construction is complete to prevent unauthorized access, in accordance with Mitigation Measure B-1a (Appendix B). The access roads would create more edge habitat and are expected to create openings in some areas of dense chaparral habitat, which would be an improvement to mule deer habitat. With the expectation that mule deer would utilize this increased edge habitat for foraging, it is also expected that mountain lions would utilize these areas for preying upon mule deer and for travelling through territories.

Relationship of Project-Level Effects to Forest-Scale Population Trends

The CNF MIS report (USDA Forest Service 2007) indicates a stable mountain lion population trend for the CNF and for southern California, but also states that mountain lion populations in southern California face serious risks due to habitat fragmentation, loss of landscape connectivity, and decreases in the mule deer population. Current management under the new LMP anticipates increasing mule deer herd size over the next four decades at which time it is expected to stabilize, which will provide a benefit to mountain lion.

The Project is not expected to affect the current mountain lion population status or trends because of the intermittent and short-term nature of construction and O&M activities at each Project tower site. Also, the total direct Project ROW impacts to 92.24 acres of potential mountain lion habitat on USFS-managed lands within the CNF Congressional boundary and total impacts of approximately 129 acres on other public and private lands within and adjacent to the CNF Congressional boundary would occur in small areas (e.g., 0.25 acre) over a total of 19 miles and would not result in habitat fragmentation or habitat quality reduction. Construction at each tower location would occur over short periods of time, which will allow mountain lions to disperse into nearby habitat areas during construction. Mountain lions are expected to return to these areas once construction is complete. Vehicles and personnel would use access roads several times per year for maintenance activities, which would result in only minor disturbance if mountain lions are in these areas during maintenance (see Section D.2.16 of the Final EIR/EIS for a description of maintenance activities, [Aspen 2008b]). The Project O&M activities would occur during daylight hours and are not anticipated to interfere with mountain lion reproduction, and as noted above may minimally contribute beneficially to nocturnal hunting activities by attracting mule deer into the Project ROW through maintenance of small areas of edge habitat associated with openings for tower pads, TSAPs, and access roads. Given the small amount of potentially suitable habitat permanently impacted by the Project and the creation and maintenance of potentially suitable mule deer foraging habitat within the ROW, Project-level habitat effects will not contribute to a decline in population or habitat trends for this species.

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APPENDIX A – SELECTED SPECIES MAP BOOKS

SUNRISE POWERLINK℠

- Mapbook Index
- Cleveland National Forest Congressional Boundary
- U. S. Forest Service Land
- County Boundary
- Primary interstate Hwy
- Primary US and State Hwy
- Secondary State and County Hwy

0 4 8
Miles

Appendix A
USFS Sensitive Species Occurrences
Overview - 5/24/2010

L E G E N D

SUNRISE POWERLINK℠

USFS Sensitive Species

Plants

- Dunn's mariposa lily
- Chaparral beargrass
- Dean's milk-vetch
- Delicate clarkia
- Felt-leaved monardella
- Gander's ragwort
- Jacumba milk-vetch
- Lakeside ceanothus
- Long-spined spineflower
- Moreno currant
- Orcutt's brodiaea
- Payson's jewelflower
- Ramona horkelia
- Southern jewelflower
- Tecate tarplant
- Vanishing buckwheat

- Chaparral beargrass
- Dean's milk-vetch
- Delicate clarkia
- Dunn's mariposa lilly
- Gander's ragwort
- Lakeside ceanothus
- Moreno currant
- Orcutt's brodiaea
- Payson's jewelflower
- Ramona horkelia

Wildlife

- California cactus wren
- California legless lizard
- Coastal rosy boa
- Golden Eagle
- Pallid bat
- San Diego horned lizard
- San Diego ring-necked snake
- Townsend's big-eared bat
- Two-striped garter snake
- Western red bat

Riparian Forests and Woodlands

- Black Oak Woodland (BOW)
- Coast Live Oak Woodland (CLOW)
- Coast Live Oak Woodland - Burned (CLOW-B)
- Coast Live Oak Woodland - Disturbed (CLOW-D)
- Engelmann Oak Woodland (EOW)
- Mixed Oak Woodland (MOW)
- Mesquite Bosque (MB)
- Mule Fat Scrub (MFS)
- Peninsular Juniper Woodland Scrub (PJWS)
- Riparian Woodland (RW)
- Southern Coast Live Oak Riparian Forest (SCLORF)
- Southern Cottonwood-willow Riparian Forest (SCWRF)
- Southern Riparian Forest (SRF)
- Southern Willow Scrub (SWS)
- Tamarisk Scrub (TS)
- Tamarisk Scrub - Disturbed (TS-D)

Non-native Vegetation, Developed Areas, and Disturbed Habitat

- Developed (DEV)
- Disturbed Habitat (DH)
- Extensive Agriculture (AG-E)
- Extensive Agriculture - Field/Pasture, Row Crops (AG-FP)
- Non-native Vegetation (NNV)
- Unvegetated Habitat - Badlands (UH-L)
- Unvegetated Habitat - Badlands - Disturbed (UH-L-D)
- Unvegetated Habitat - Desert Pavement (UH-P)
- Unvegetated Habitat - Desert Pavement - Disturbed (UH-P-D)
- Eucalyptus Woodland (EUC)

Chaparrals

- Chamise Chaparral (CC)
- Chamise Chaparral - Burned (CC-B)
- Chamise Chaparral - Disturbed (CC-D)
- Northern Mixed Chaparral (NMC)
- Northern Mixed Chaparral - Disturbed (NMC-D)
- Redshank Chaparral (RSC)
- Redshank Chaparral - Disturbed (RSC-D)
- Scrub Oak Chaparral (SOC)
- Scrub Oak Chaparral - Disturbed (SOC-D)
- Semi-desert Chaparral (SDC)
- Semi-desert Chaparral - Disturbed (SDC-D)
- Southern Mixed Chaparral (SMC)
- Southern Mixed Chaparral - Burned (SMC-B)
- Southern Mixed Chaparral - Disturbed (SMC-D)

Coastal and Montane Scrub Habitats

- Big Sagebrush Scrub (BSS)
- Coastal Sage Scrub - Disturbed (CSS-D)
- Coastal Sage-Chaparral Scrub (CSCS)
- Coastal Sage Scrub (CSS)
- Diegan Coastal Sage Scrub (DCSS)
- Diegan Coastal Sage Scrub - Disturbed (DCSS-D)
- Diegan Coastal Sage Scrub - Inland Form (CSSI)
- Diegan Coastal Sage Scrub - Inland Form - Disturbed (CSSI-D)
- Flat-topped Buckwheat Scrub (FTBS)
- Flat-topped Buckwheat Scrub - Disturbed (FTBS-D)

Desert Scrub and Dune Habitats

- Sagebrush Scrub (SS)
- Sonoran Creosote Bush Scrub (SCBS)
- Sonoran Creosote Bush Scrub - Disturbed (SCBS-D)
- Sonoran Desert Mixed Scrub (SDMS)
- Sonoran Desert Mixed Scrub - Disturbed (SDMS-D)
- Sonoran Desert Scrub (SDS)
- Sonoran Desert Wash Scrub (SDWS)
- Sonoran Mixed Woody Scrub (SMWS)
- Sonoran Mixed Woody Scrub - Disturbed (SMWS-D
- Sonoran Mixed Woody and Succulent Scrub (SMWSS)

Grasslands and Meadows

- Alkali Meadow (AM)
- Native Grassland (NG)
- Native Grassland - Disturbed (NG-D)
- Non-native Grassland (NNG)
- Non-native Grassland - Disturbed (NNG-D)
- Valley Needlegrass Grassland (VNG)

Herbaceous Wetlands, Freshwater, and Streams

- Lakeshore Fringe (LF)
- Non-vegetated Channel (NVC)
- Freshwater (FW)
- Vernal Pool (VP)

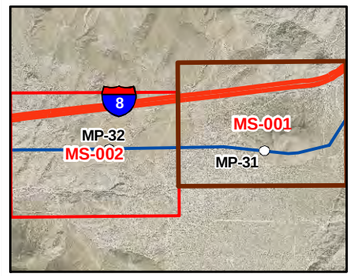
Appendix A
USFS Sensitive Species Occurrences
Legend - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

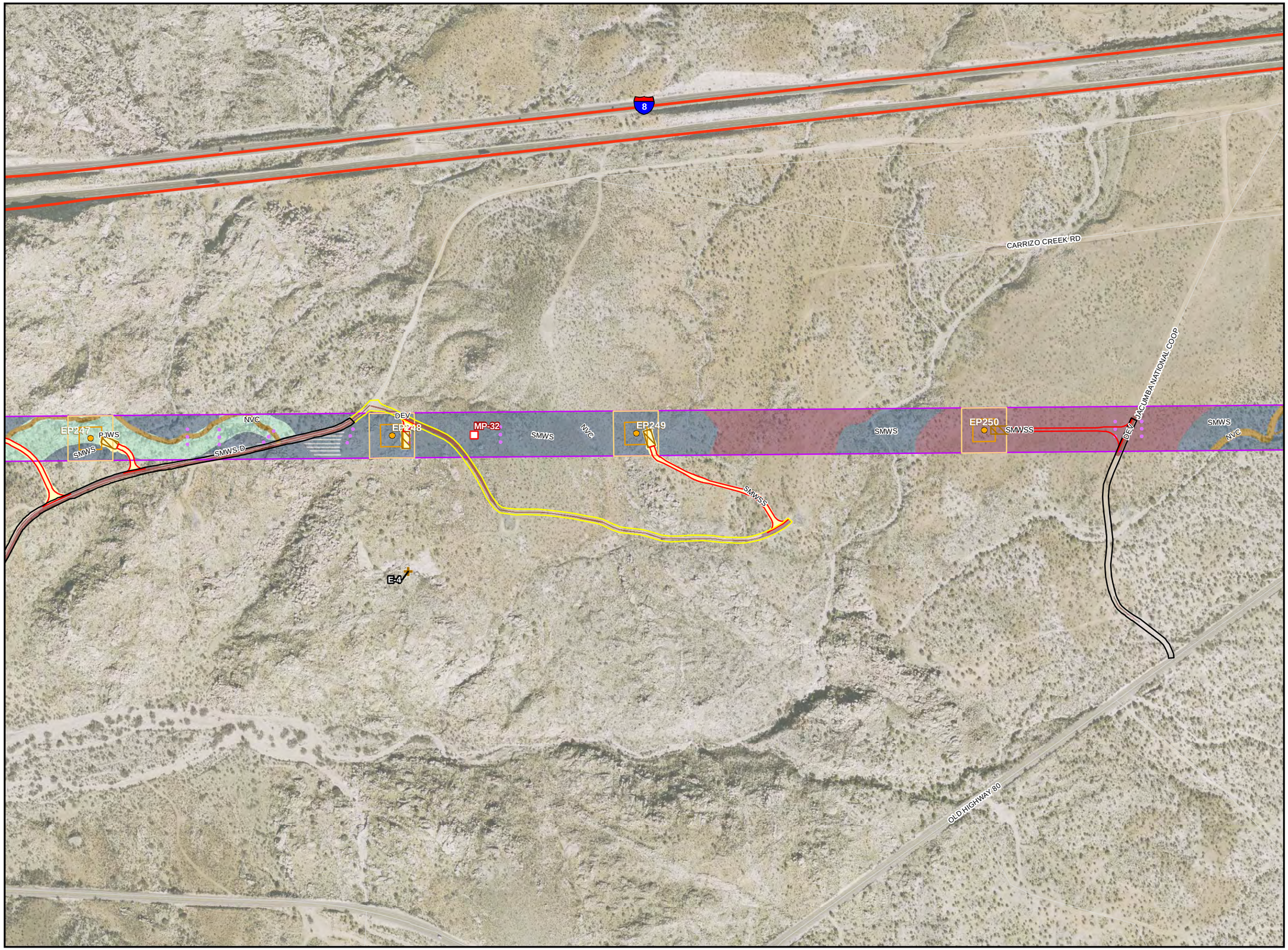
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-001 - 5/24/2010



SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

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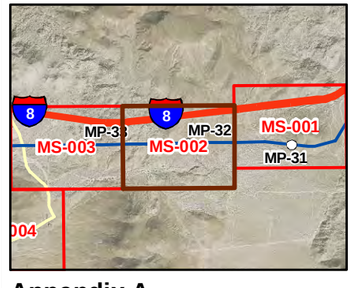
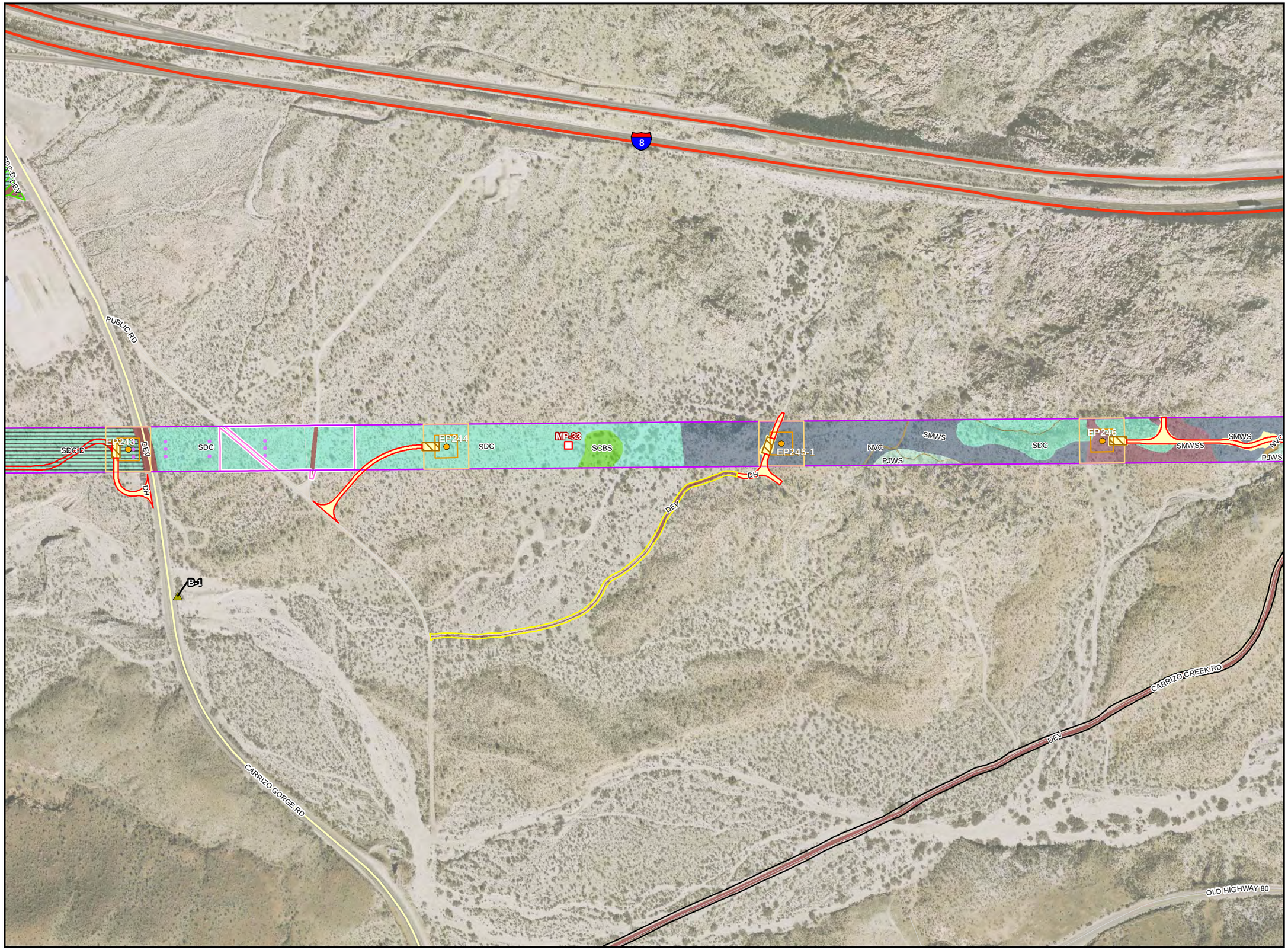
Feet



Appendix A
USFS Sensitive Species Occurrences
MS-002 - 5/24/2010

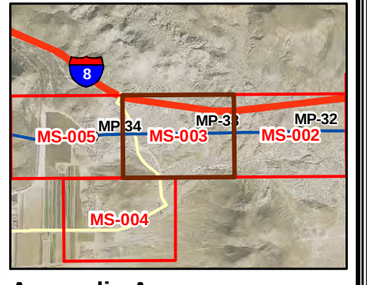


SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



Appendix A
USFS Sensitive Species Occurrences
MS-003 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet

Appendix A

USFS Sensitive Species Occurrences

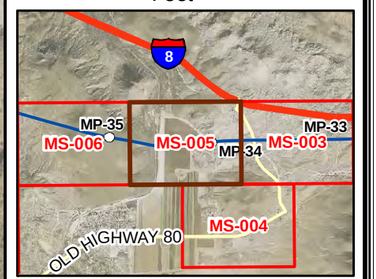
MS-004 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

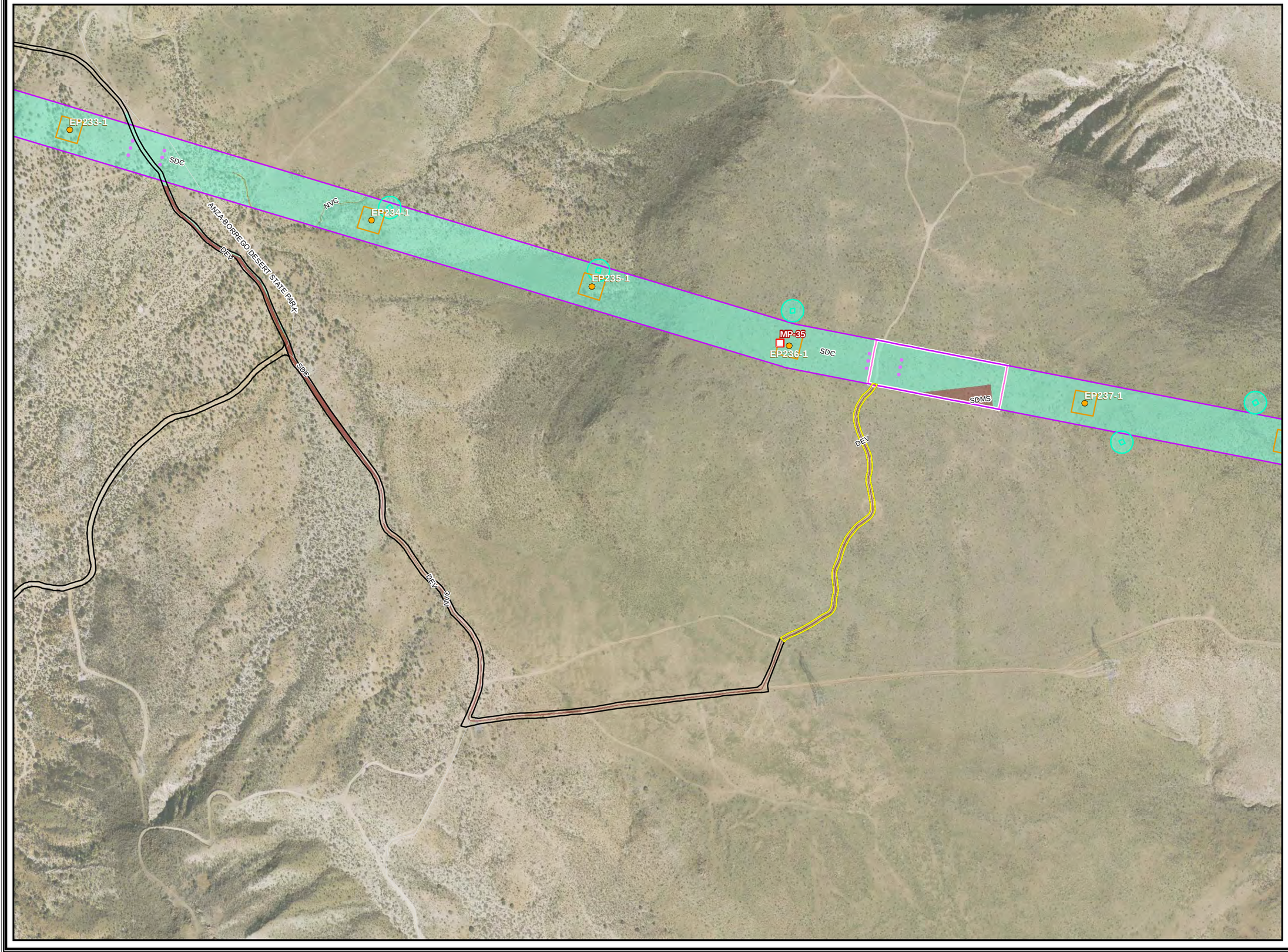
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-005 - 5/24/2010

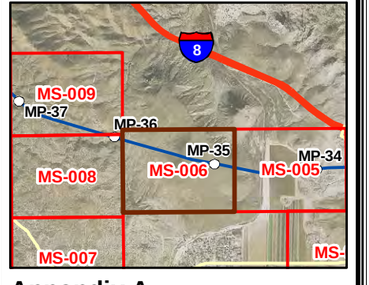


SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



Appendix A

USFS Sensitive Species Occurrences

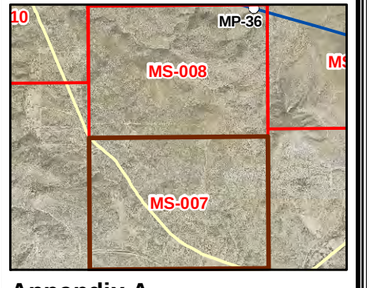
MS-006 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



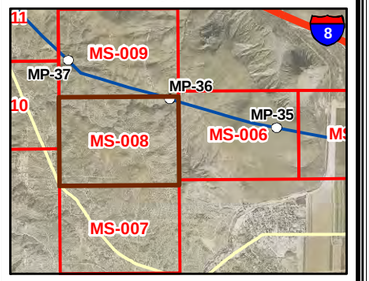
Appendix A
USFS Sensitive Species Occurrences
MS-007 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



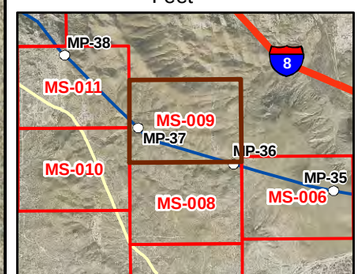
Appendix A
USFS Sensitive Species Occurrences
MS-008 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



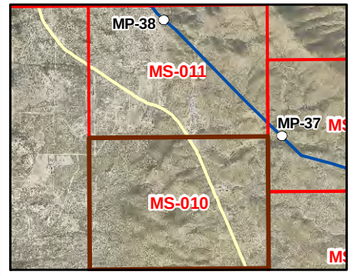
Appendix A
USFS Sensitive Species Occurrences
MS-009 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



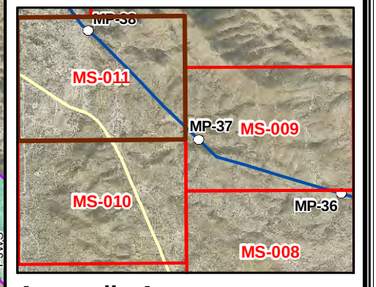
Appendix A
USFS Sensitive Species Occurrences
MS-010 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



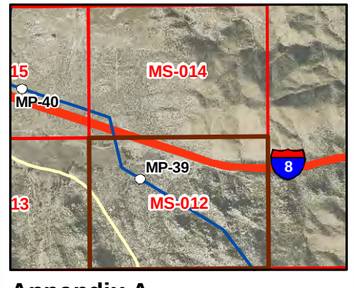
Appendix A
USFS Sensitive Species Occurrences
MS-011 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



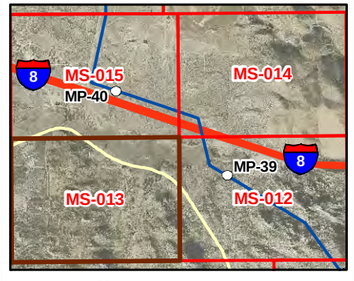
Appendix A
USFS Sensitive Species Occurrences
MS-012 - 5/24/2010

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



Appendix A
USFS Sensitive Species Occurrences
MS-013 - 5/24/2010

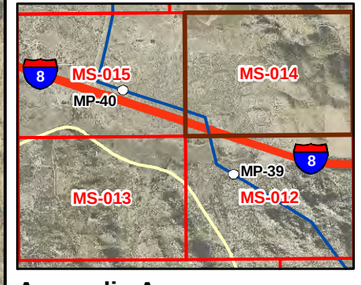
SDGE
Chambers Group Inc.

SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

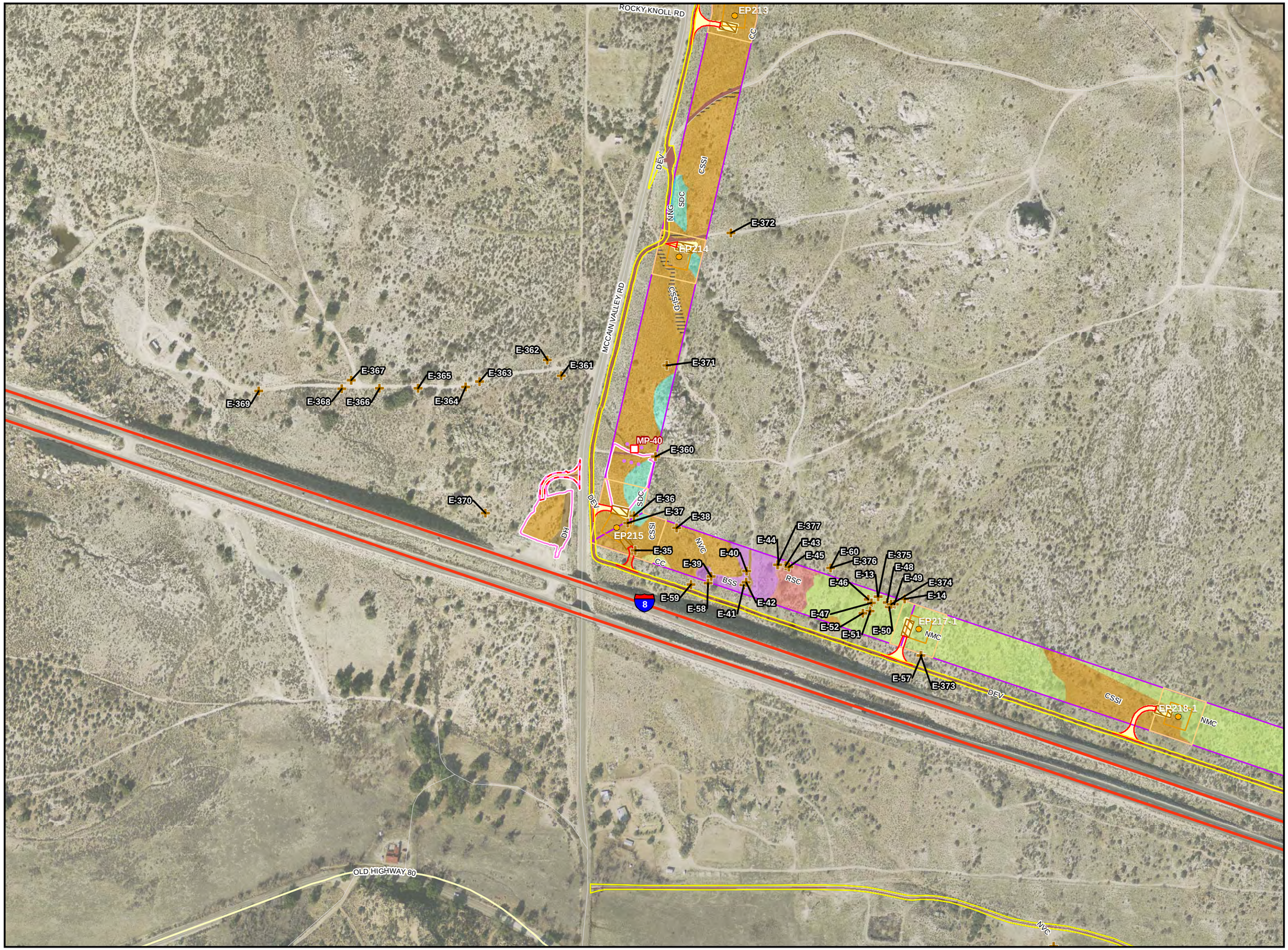
0 400 800

Feet



Appendix A
USFS Sensitive Species Occurrences
MS-014 - 5/24/2010

SDC
X-7
X-6
X-5
H-60
X-4
IVVC
NMC
EP219-1
DEV
8
SDC
BSS

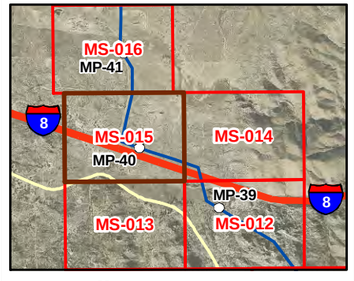


SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

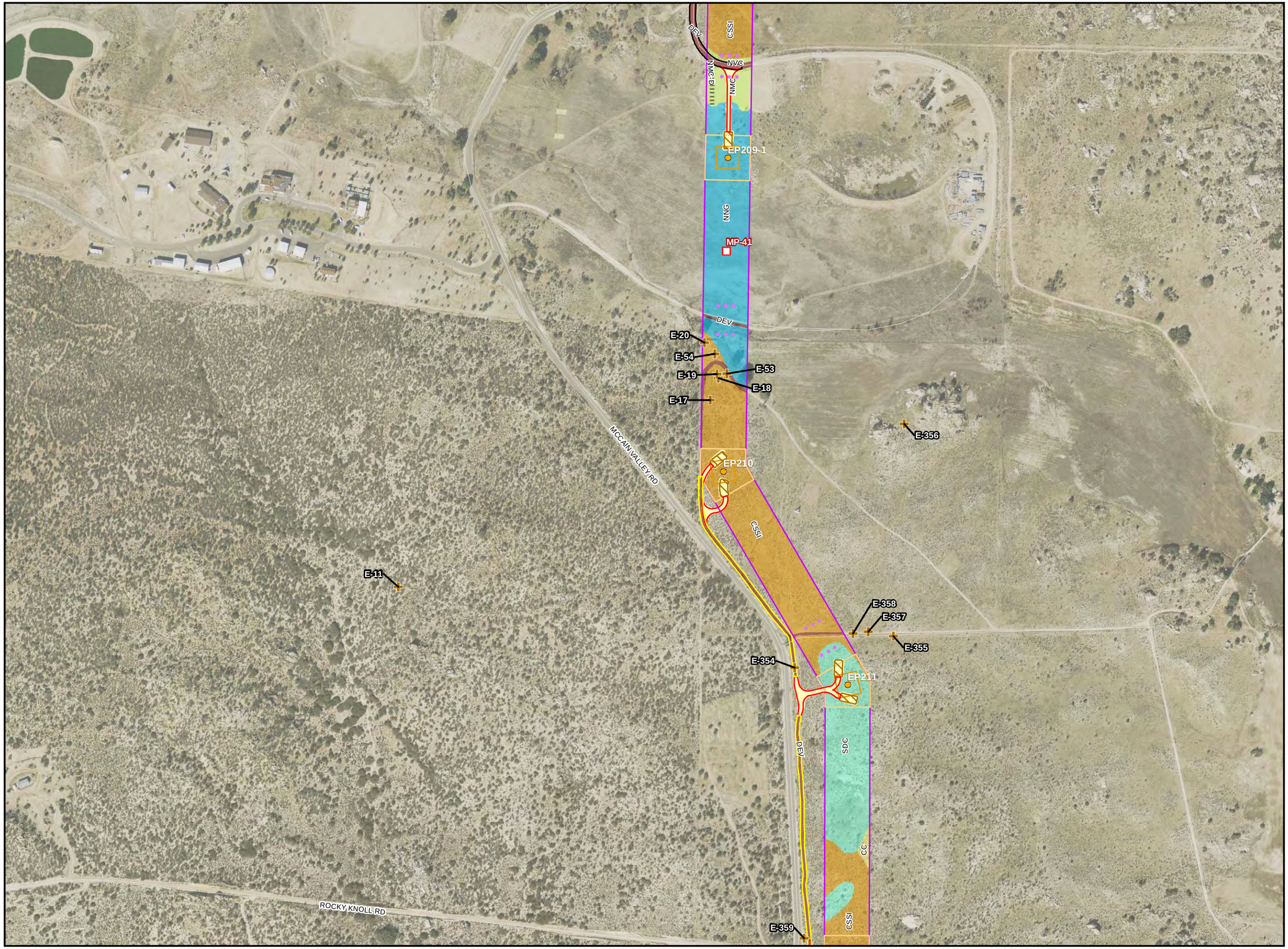
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-015 - 5/24/2010



SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
- Existing Road Needing Minor Grading
- Access Road to be Constructed
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- Existing Road Ready to Use
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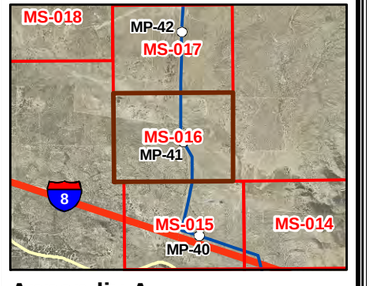
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



Appendix A

USFS Sensitive Species Occurrences

MS-016 - 5/24/2010