FINAL

BIOLOGICAL EVALUATION FOR REGIONAL FORESTER'S SENSITIVE PLANT AND WILDLIFE SPECIES ON THE CLEVELAND NATIONAL FOREST FOR THE SUNRISE POWERLINK PROJECT

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List of Acronyms

APLIC:	Avian Power Line Interaction Committee
BA:	Biological Assessment
BE:	Biological Evaluation
BIA:	Bureau of Indian Affairs
BLM:	Bureau of Land Management
BSS:	Big Sagebrush Scrub
CAISO:	California Independent System Operator
CC:	Chamise Chaparral
CC-B:	Chamise Chaparral-Burned
CDFG:	California Department of Fish & Game
CEA:	Cumulative Effects Analysis
CLOW:	Coast Live Oak Woodland
CNDDB:	California Natural Diversity Database
CNF:	Cleveland National Forest
CNPS:	California Native Plant Society
CPUC:	California Public Utilities Commission
CSSI:	Diegan Coastal Sage Scrub-Inland Form
DCSS:	Diegan Coastal Sage Scrub
DEV:	Developed
DH:	Disturbed Habitat
EIS:	Environmental Impact Statement
ESSR:	Environmentally Superior Southern Route
FAA:	Federal Aviation Administration
FEIR:	Final Environmental Impact Report
FLPMA:	Federal Land Policy Management Act
GIS:	Global Information Systems
I-8:	Interstate 8
kV:	Kilovolt
MMRP:	Mitigation Monitoring & Reporting Program
MP:	Milepost
NAD:	North American Datum
NFS:	National Forest System
NMC:	Northern Mixed Chaparral
NMC-D:	Northern Mixed Chaparral-Disturbed
NNG:	Non-Native Grassland
OHV:	Off-Highway Vehicle
O&M:	Operation & Maintenance
RECON:	RECON Environmental Inc.
RFSS:	Regional Forester Sensitive Species
ROD:	Record of Decision
ROW:	Right-of-Way
RSC:	Redshank Chaparral
SANGIS:	San Diego Geographic Information Source
SBNF:	San Bernardino National Forest
SCLORF:	South Coast Live Oak Riparian Forest
SDG&E:	San Diego Gas & Electric

SDNHM:	San Diego Natural History Museum
SOC:	Scrub Oak Chaparral
SOPA:	Schedule of Proposed Action
SMC:	Southern Mixed Chaparral
SRPL:	Sunrise Powerlink Project
TNC:	The Nature Conservancy
USDA:	United States Department of Agriculture
USFS:	United States Forest Service
USFWS:	United States Fish & Wildlife Service

EXECUTIVE SUMMARY

The proposed Sunrise Powerlink Project (Project), which extends through portions of San Diego and Imperial Counties in southern California, would occur within a portion of the Descanso District of the Cleveland National Forest (CNF). The Project would result in permanent direct effects to 43.96 acres and temporary direct effects to 48.28 acres of habitat on USFS-managed lands within the Descanso District.

Project activities (construction and continued O&M of the Project and associated facilities) will result in temporary direct adverse effects to three plant Regional Forester Sensitive Species (RFSS) on USFS-managed lands within the Descanso District including approximately 1,350 individuals of Payson's jewelflower, eight individuals of Tecate tarplant, and one individual of delicate clarkia. Individuals of the following 14 plant RFSS may potentially be directly or indirectly affected by Project activities: Dean's milk-vetch, Jacumba milk-vetch, Descanso milk-vetch, Orcutt's brodiaea, Dunn's mariposa lily, Lakeside ceanothus, long-spined spineflower, vanishing buckwheat, Ramona Horkelia, felt-leaved monardella, Ganders' ragwort, Moreno currant, Hammitt's clay-cress, and southern jewelflower.

Project activities (construction and continued O&M of the Project and associated facilities) may have direct and indirect adverse affects to wildlife RFSS based on the literature review of home ranges and known occurrences/observations (Appendix D) for each species. Individuals of the following 15 wildlife RFSS may potentially be directly or indirectly affected by Project activities on USFS-managed lands in the Descanso District: large-blotched salamander, California legless lizard, coastal rosy boa, southwestern pond turtle, San Diego ring-necked snake, San Diego mountain kingsnake, San Diego horned lizard, two-striped garter snake, coastal cactus wren, bald eagle, California spotted owl, pallid bat, Townsend's big-eared bat, western red bat, and California leaf-nosed bat.

Based on permanent and temporary direct, indirect and cumulative effects from the Project and the infrequent need for routine maintenance activity, construction and continued O&M of facilities may affect RFSS listed above. However, Project construction and O&M are not likely to result in a trend toward federal listing or a loss of viability for these species in the CNF, particularly with the implementation of mitigation measures (Appendix F).

SECTION 1.0 – INTRODUCTION

This biological evaluation (BE) examines the potential effects of proposed actions by the U.S. Department of Agriculture Forest Service (USFS) on Regional Forester Sensitive Species (RFSS) in the Descanso District of the Cleveland National Forest (CNF). It conforms to the policy and standards established in USFS Manual directive FSM 2672.40-2672.42. The actions under consideration are approval or denial of a special use permit, right-of-way (ROW) easement, and amendments to the CNF land management plan as requested by San Diego Gas and Electric Company (SDG&E) for the Sunrise Powerlink Project (SRPL; Project). The authorizations from USFS would cover construction, operation, and maintenance of Project components on USFS lands in CNF (see Section 2. Proposed Action for additional details). USFS's action would be taken in accordance with the Federal Land Policy Management Act of 1976 (FLPMA), which provides authority to the Secretary of Agriculture to issue, renew, or grant authorizations to occupy, use, or traverse [National Forest Service] lands, except designated wilderness, for the generation, transmission, and distribution of electrical power (43 U.S.C. § 1761).

This BE documents the potential for the Project to result in direct, indirect, and cumulative effects on 23 non-listed plant RFSS and 15 non-listed wildlife RFSS (Table 1). These species were identified from the USFS non-listed RFSS list for Region 5 provided by the Descanso District Regional Forester. RFSS were selected for analysis in coordination with the Regional Forester in the Descanso District based on a review of the proposed Project. Potential effects on endangered, threatened, and proposed species are addressed separately in a Biological Assessment (BA) prepared for the Project (SDG&E et al. 2008) and in the Biological Opinion (FWS-2008BO423-2009F0097) issued by the U.S. Fish and Wildlife Service (USFWS) in January 2009 (USFWS 2009). The biological effects of the Project as a whole and the components that would be on USFS lands also are analyzed in the Environmental Impact Report and Environmental Impact Statement (EIR/EIS) prepared for the Project by the California Public Utilities Commission (CPUC) and U.S. Department of Interior Bureau of Land Management (BLM) (CPUC and BLM 2009). SDG&E also provided information on the Project's biological effects in the Project Modification Report (PMR) submitted to the CPUC and BLM in May 2010 (SDG&E 2010).

Table 1
Plant and Wildlife RFSS Considered in this BE

Common Name	Scientific Name
PLANTS	
Dean's milk-vetch	*Astragalus deanei*
Jacumba milk-vetch	*Astragalus douglasii* var. *perstrictus*
Descanso milk-vetch	*Astragalus oocarpus*
Orcutt's brodiaea	*Brodiaea orcuttii*
Dunn's mariposa lily	*Calochortus dunnii*
Payson's jewelflower	*Caulanthus simulans*
Lakeside ceanothus	*Ceanothus cyaneus*
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*
Delicate clarkia	*Clarkia delicata*
Tecate tarplant	*Deinandra floribunda*
Vanishing buckwheat	*Eriogonum enanidum* (*E. foliosum* misapplied)
Mission Canyon bluecup	*Githopsis diffusa* ssp. *Filicaulis*
Ramona horkelia	*Horkelia truncata*
Heart-leaved pitcher sage	*Lepechinia cardiophylla*

Common Name	Scientific Name
PLANTS	
Laguna linanthus	*Linanthus orcuttii*
Felt-leaved monardella	*Monardella hypoleuca* ssp. *Lanata*
Chaparral beargrass	*Nolina cismontana*
Gander's ragwort	*Packera ganderi*
Moreno currant	*Ribes canthariforme*
San Miguel savory	*Satureja chandleri*
Hammitt's clay-cress	*Sibaropsis hammittii*
Southern jewelflower	*Streptanthus campestris*
Parry's tetracoccus	*Tetracoccus dioicus*
Wildlife	
Amphibians	
Large-blotched salamander	*Ensatina klauberi*
Reptiles	
California legless lizard	*Anniella pulchra*
Coastal rosy boa	*Charina trivirgata roseofusca*
San Diego horned lizard	*Phrynosoma coronatum blainvillii*
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*
San Diego ring-necked snake	*Diadophis punctatus similis*
Southwestern pond turtle	*Actinemys marmorata pallida*
Two-striped garter snake	*Thamnophis hammondii*
Birds	
Bald eagle	*Haliaeetus leucocephalus*
Coastal (San Diego) cactus wren	*Campylorhynchus brunneicapillus sandiegensis*
California spotted owl	*Strix occidentalis occidentalis*
Mammals – Bats	
California leaf-nosed bat	*Macrotus californicus*
Pallid bat	*Antrozous pallidus*
Townsend's big-eared bat	*Corynorhinus townsendii*
Western red bat	*Lasiurus blossevillii*

[1] – RFSS list compiled in coordination with Descanso District Regional Forester from USFS October 31, 2005 Sensitive Species that are not listed or proposed under the ESA; *see* http://www.fs.fed.us/biology/resources/pubs/tes/fs_ss_310ct05.pdf.

SECTION 2.0 – PROPOSED ACTION

2.1. OVERVIEW

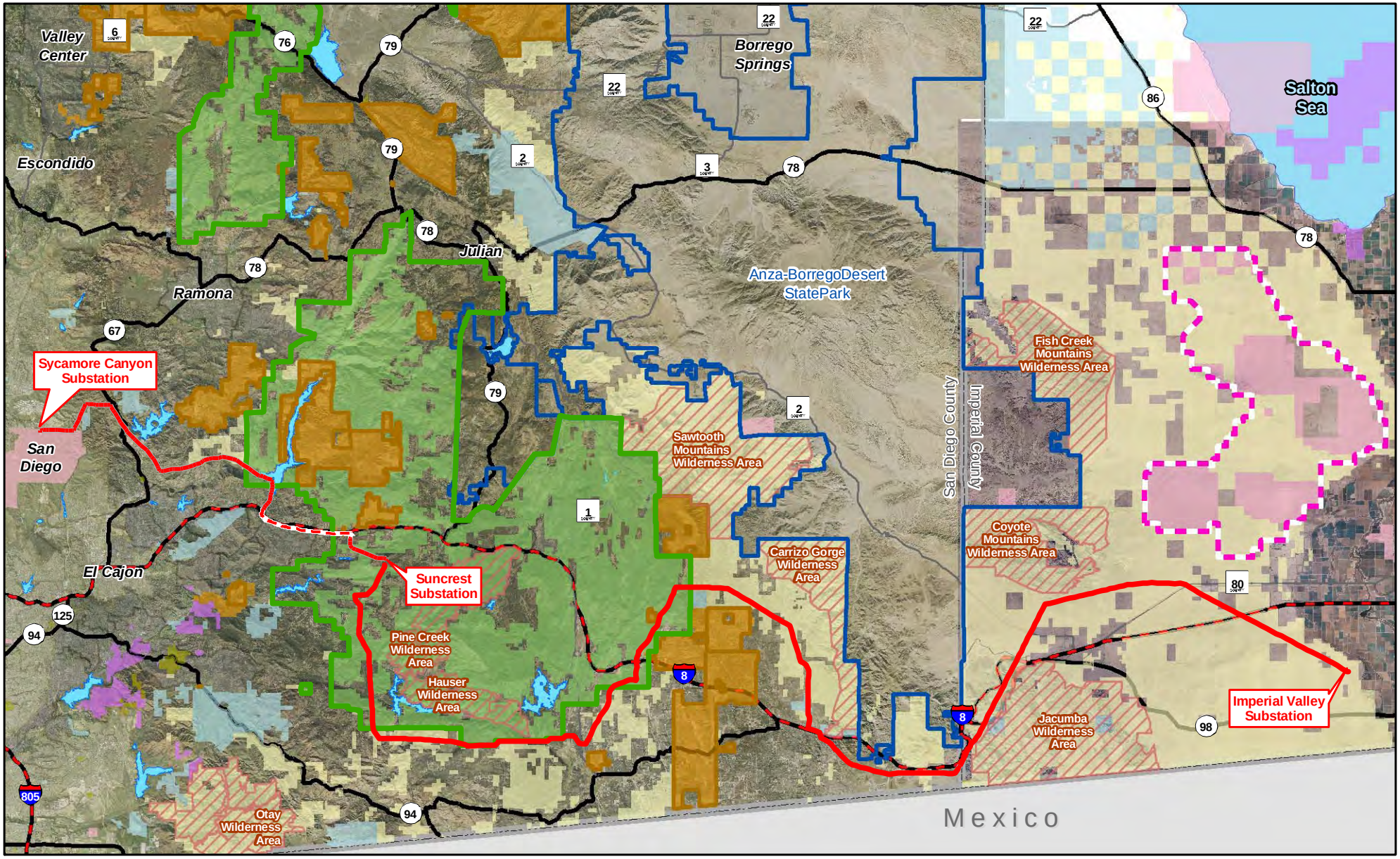
USFS is considering authorization of special uses on 541.80 acres in the Descanso District of CNF where SDG&E would construct, operate, and maintain approximately 19 miles of 500 kV and 230 kV transmission line and ancillary features. To authorize the uses, USFS would need to grant ROW authorization across USFS lands and adopt amendments to the Forest Plan. Construction of the Project on CNF lands would entail establishment of 77 transmission line structures (lattice towers and steel poles) and tower access staging areas, 15 temporary wire stringing areas and 1 temporary construction yard, construction and use of 0.2 miles of temporary and 1.9 miles of permanent new access roads, and ancillary improvements to 6.5 miles of existing roads on USFS lands. Operations and maintenance would be conducted by SDG&E at the transmission line structures, at permanent tower access staging areas, and along permanent access roads. SDG&E also would be responsible for vegetation management around the structures and staging areas, along permanent access roads, and within the Project ROW.

2.2. PROJECT AREA

The locations where Project construction, operation, and maintenance activities would occur on CNF lands comprise the Project ROW for the proposed actions.

Figure 1 shows the entire Project. Figure 2 shows the Project ROW within Congressional boundaries of the CNF. Both figures depict the Project as presented in the May 2010 PMR.

As shown in Figure 2, the 500 kV portion of the Project would enter the CNF at MP 53 and extend approximately eight miles through the CNF to MP 61. At MP 61, the Project ROW leaves the CNF to cross private and BLM-managed lands for approximately 17 miles to MP 78, where it reenters 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 17.15 linear miles within USFS land, from the eastern boundary of the CNF to the proposed Suncrest Substation.



Legend

- Sunrise 500kV Overhead
- Sunrise 230kV Overhead
- Sunrise 230kV Underground
- Cleveland National Forest Congressional Boundary
- State Park Boundary
- Indian Reservation Boundary
- Federal Wilderness Area
- Desert Range

Jurisdictional Ownership

- BLM Land
- State Land
- U. S. Fish and Wildlife Land
- U. S. Forest Service Land
- Homeland Security
- National Park Service Land
- Department of Defense Land
- Indian Land
- Other Federal Land

N W E S

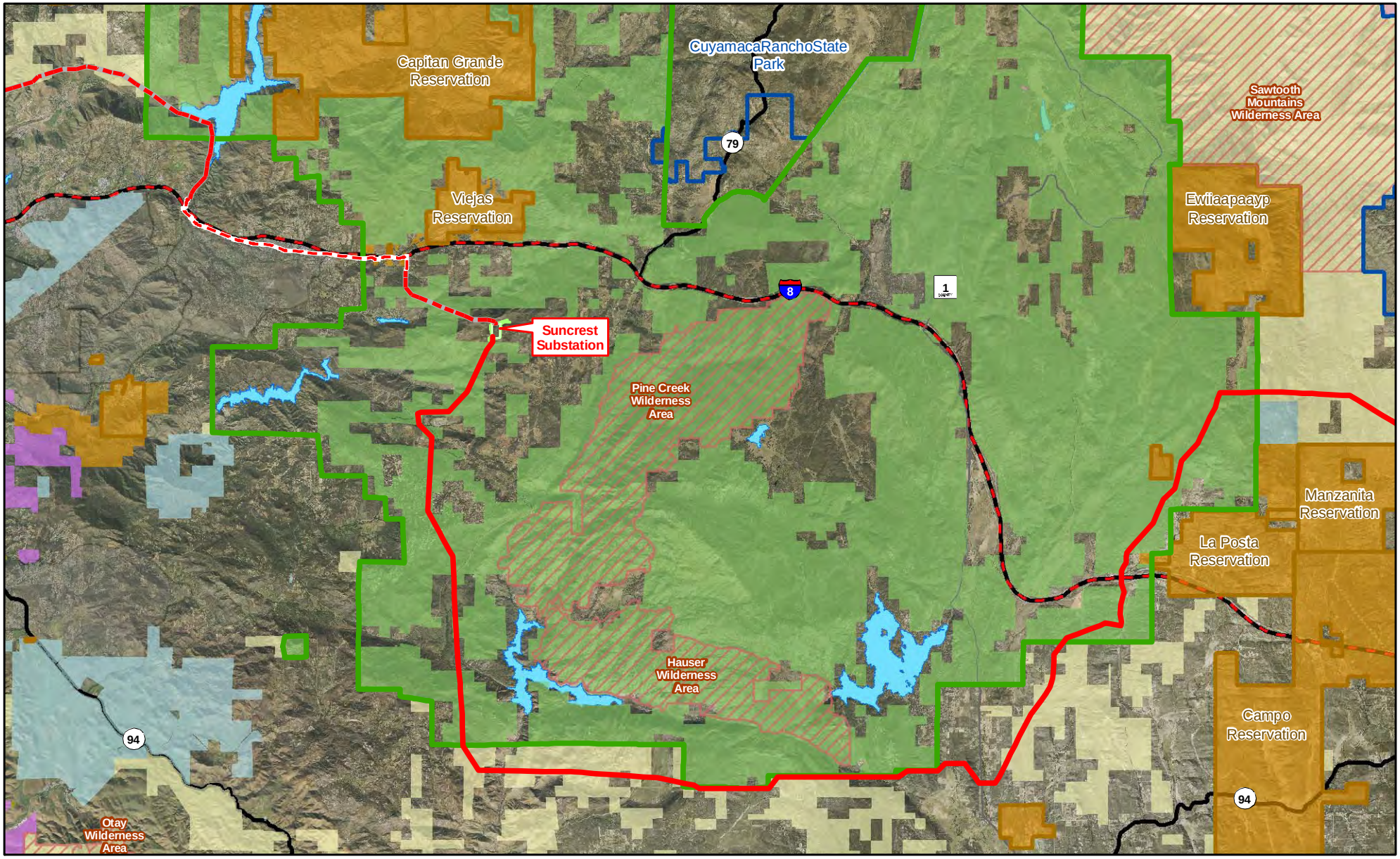
0 4 8 Miles

Figure 1
Project Location Map

SUNRISE POWERLINK™

SDGE Sempra Energy Utility | Chambers Group Inc.

Z:\PROJ\20041 Sunrise\Data\USFS\USFS BE BA MIS\MXD\BE_BA\USFS_BE_BA Project Location Map.mxd



Legend

- Sunrise 500kV Overhead
- Sunrise 230kV Overhead
- Sunrise 230kV Underground
- Cleveland National Forest Congressional Boundary
- State Park Boundary
- Indian Reservation Boundary
- Federal Wilderness Area

Jurisdictional Ownership

- BLM Land
- State Land
- U. S. Fish and Wildlife Land
- U. S. Forest Service Land
- Homeland Security
- National Park Service Land
- Department of Defense Land
- Indian Land

N W E S

0 2 4 Miles

Figure 2

Cleveland National Forest Location Map

SUNRISE POWERLINK™

SDGE Sempra Energy Utility

Chambers Group Inc.

Z:\PROJ\20041 Sunrise\Data\USFS\USFS BE BA MISMXD\BE_BA\USFS_BE_BA CNF Location Map.mxd

Leaving the proposed Suncrest Substation, the 230 kV portion of the 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 extends for approximately 28 miles in a northwesterly direction from the Suncrest Substation to the Sycamore Canyon Substation (MP 89 to MP 117). Approximately 2 miles of the 230 kV line would be on CNF lands. In total, the line would cross approximately 19 miles of USFS lands within the CNF.

2.3. PROJECT ACTIVITIES

The modified Project ROW, including placement of all project features (e.g., access roads, work areas, TSAPs, 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 USFS. 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 that could provide potential access for helicopter construction, but these towers may also be constructed using conventional methods. 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.

2.3.1 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 one construction yard and 15 pull 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 conventionally-constructed 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 area. Grading or crushing of existing vegetation within the temporary work area will be used to establish the temporary pad depending on site conditions. The structure pad and the 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 within a single day. A total of five to eight structures are anticipated to be completed per day, with the entire construction process requiring approximately three to six weeks per tower structure.

2.3.2 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.

2.3.3 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 tower staging area pads (TSAPs). These helicopters will also be used for tower inspections during 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 TSAP. The vegetation will be cleared to ground level using hand-held equipment. Ground pads with a 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 will be utilized for the majority of landing sites, and where topography is greater than a 15% slope, raised platforms will be constructed on steel and 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 and construction method will accommodate the varying terrain of the Project ROW and will minimize the amount of ground disturbance required to construct the platforms. These platforms will be permanent and will also be used to for on-going O&M 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. Towers 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.

2.3.4 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 tower 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.

2.3.5 Restoration of Temporary Impact Areas

The physical contours and biological values of temporary impact areas would be restored by SDG&E in accordance with restoration plans approved by USFS. Restoration would be required at construction yards, wire stringing areas, temporary work areas, and temporary access roads.

SECTION 3.0 – HABITAT ASSESSMENT AND SURVEY METHODOLOGIES

This BE is based on habitat assessments and surveys conducted for the EIR/EIS (CPUC and BLM 2009) and in connection with pre-construction final design and regulatory compliance. Table 2 lists the surveys and assessments conducted in 2007, 2008, and 2009.

Table 2
Habitat Assessments and Surveys Conducted for Project in 2007, 2008, and 2009

Title	Date	Prepared by/for	Content	Available From
2006 Rare Plant Survey Results or the Sunrise Powerlink Project.	2007.	Helix Environmental Planning, Inc./SDG&E	Focused rare plant survey results for north and south route alternatives.	CPUC
2007 Arroyo Toad Habitat Assessment for the Sunrise Powerlink Project.	2007.	Jones& Stokes/Helix Environmental Planning, Inc.	Habitat Assessment for arroyo toad on north and south route alternatives.	CPUC
2007 Arroyo Toad Focused Survey Results for the Sunrise Powerlink Project.	November 2007.	Helix Environmental Planning, Inc./SDG&E	USFWS protocol arroyo toad surveys results for Project.	CPUC
2007 Rare Plant Survey Results or the Sunrise Powerlink Project.	2008.	Helix Environmental Planning, Inc./SDG&E	Focused rare plant survey results for north and south route alternatives.	CPUC
2007 Least Bell's Vireo Survey Report for the SDG&E Sunrise Powerlink Project.	January 2008.	Helix Environmental Planning, Inc./SDG&E	USFWS protocol least Bell's vireo survey results for Project.	CPUC
2007 California Gnatcatcher Survey Report for the SDG&E Sunrise Powerlink Project.	January 2008	Helix Environmental Planning, Inc./SDG&E	USFWS protocol gnatcatcher survey results for Project.	CPUC

Title	Date	Prepared by/for	Content	Available From
2008 Rare Plant Survey Results for the Sunrise Powerlink Project.	February 2009.	Helix Environmental Planning, Inc./SDG&E	Focused rare plant survey results for north and south route alternatives.	CPUC
Final 2007 Rare Plant Survey Report for the Sunrise Powerlink Project.	February 2008	ARCADIS-U.S. Inc./SDG&E	Focused rare plant survey results for north and south route alternatives.	CPUC
2009 California Spotted Owl Survey; Field Notes and Mapped Potential Habitat for the SDG&E Sunrise Powerlink Project.	September 2009.	Chambers Group, Inc./SDG&E	USFWS protocol spotted owl survey results and habitat map for CNF.	CPUC
2009 Quino Checkerspot Butterfly 45-Day Focused Survey Report for the SDG&E Sunrise Powerlink Project.	September 2009.	Chambers Group, Inc./SDG&E	USFWS protocol quino survey results for Project.	CPUC
2009 California Gnatcatcher Survey Report for the SDG&E Sunrise Powerlink Project.	September 2009.	Chambers Group, Inc./SDG&E	USFWS protocol gnatcatcher survey results for Project.	CPUC
2009 – 2010 Sunrise Biological Monitoring Incidental Observations; Field Notes from the SDG&E Sunrise Powerlink Project.	2010.	Chambers Group, Inc./SDG&E	Incidental species observations for Project.	CPUC
2009 Arroyo Toad Survey Report for the SDG&E Sunrise Powerlink Project	December 22, 2009	RECON Environmental, Inc./SDG&E	USFWS protocol arroyo toad surveys results for the Project.	CPUC
2009 Riparian Bird Survey Report for the SDG&E Sunrise Powerlink Project	December 31, 2009	RECON Environmental, Inc./SDG&E	USFWS guideline/protocol least Bell's vireo and southwestern flycatcher survey results for Project.	CPUC

Title	Date	Prepared by/for	Content	Available From
2009 Rare Plant Survey Report for the SDG&E Sunrise Powerlink Project	November 5, 2009	RECON Environmental, Inc./SDG&E	Focused rare plant survey results for the Project.	CPUC
Final Sunrise Powerlink Project 2009 California Gnatcatcher Report	December 2009	Chambers Group, Inc./SDG&E	USFWS protocol gnatcatcher survey results for the Project.	CPUC
Report on Bat Surveys Conducted Along the San Diego Gas & Electric Sunrise Powerlink Transmission Line San Diego and Imperial Counties, California	February 2009	San Diego Natural History Museum/SDG&E	Nocturnal and diurnal bat survey results for the Project.	CPUC
2007 Quino Checkerspot Butterfly Survey Report for the SDG&E Sunrise Powerlink Project.	February 2008.	TRC/SDG&E	USFWS protocol quino survey results for the Project.	CPUC

3.1. PLANT HABITAT ASSESSMENT AND SURVEY METHODS

Plant RFSS surveys were conducted within the Project ROW (and 100 foot buffer area to each side of the ROW) in the CNF between May and July of 2009 by qualified RECON biologists Michael Nieto, Anna Bennett, Gerry Scheid, Brenna Ogg, and RECON sub-contractors Fred Roberts and Theresa Gonzales (RECON 2009b). Plant floral phenologies were used to determine appropriate seasonal surveys (Reiser 2001, CNPS 2001). Visual surveys were conducted on foot by walking meandering transects through the alignment ROW (and buffer area), associated access roads, construction yards, and pull sites. All plant species observed within the survey area were noted, and plants that could not be identified in the field were identified later using taxonomic keys. The survey included a directed search for RFSS plants that would have been apparent during the time of the survey (RECON 2009b). Determination of the potential occurrence of RFSS was based upon known ranges, soils, habitat preferences for the species (Reiser 2001, CNPS 2001), and species occurrence records from the CNDDB (CNDDB 2008 and 2009) and the USFS (USDA Forest Service 2005). Vegetation community classifications follow Holland (1986) as modified by Oberbauer (1996).

3.2. WILDLIFE HABITAT ASSESSMENT AND SURVEY METHODS

Literature reviews, habitat assessments, field surveys, and/or field site visits of the Project ROW were conducted by biologist Drew Stokes (bat surveys) and Chambers Group biologists Kris Alberts, Rebecca Alvidrez, Chris Bugbee, Nichole Cervin, Debbie de la Torre, Damien Edwards, Chris Elkins, Rob Fletcher, Christina Francois, Laurie Gorman, Erik LaCoste, Linette Lina, Maya Mazon, Jenny McGee, Seth Reimers, Saraiah Skidmore, Candan Soykan, and Erik Strods, and Chambers Group sub-contractors Darin Busby, John and Melanie Dicus, and Brian Drake from February to December 2009 to determine the presence/absence of RFSS wildlife species and suitable habitats along the Project ROW. The known

ranges of the RFSS wildlife species include the CNF, and potential habitats for each species were identified and assessed for project impacts. This evaluation considered species ranges, life history functions, relative abundances, population trends, habitat preferences, and known locations. See Table 1 for a listing of wildlife species considered.

The literature review included analyzing the complete set of USFS data for the entire CNF area, as well as all CNDDB (CNDDB, 2009) records for RFSS wildlife species within a 10-mile area surrounding the Project ROW. In addition, all sources listed in Table 2 above were utilized for the analysis.

Additional sources consulted for the literature review included the Audubon Society, San Diego County Bird Atlas (Appendix C), The Birds of San Diego County (Unitt 1984), Birds of the Salton Sea (Patten et al., 2003), the USGS inventory of bats within the CNF (Stokes and Fisher 2004), bat density studies at MCAS Miramar (SDSUF 2001), and wildlife experts, such as Pete Bloom and Drew Stokes.

Following the literature review, Chambers Group conducted habitat assessments to identify which portions of the project ROW contained suitable habitat for RFSS. In addition, all personnel listed above reported all incidental observations of all RFSS encountered while working on the Project, including on USFS lands, under the direction of Chambers Group field manager Kris Alberts. Incidental observations during biological monitoring efforts by Chambers Group staff listed above were supplemented with sub-contractor observations of RFSS and habitat types during protocol coastal California gnatcatcher and Quino checkerspot butterfly surveys in 2009. Chambers Group staff and sub-contractors maintained a nearly daily presence on the Project ROW Monday through Friday, and some weekend days, during pre-construction topographic surveying in most of 2009. Staff sizes ranged from one monitor to over 12 on any given day. Incidental observations provided an opportunity to gather more data than wildlife surveys and habitat assessments alone.

In addition to incidental observations and habitat assessments, specific methods for the 15 RFSS wildlife species are detailed in the following sub-sections.

3.2.1 Bald Eagle

Historic USFS, San Diego County Bird Atlas, and CNDDB data, and other sources (Unitt 1984, Patten et al. 2003) were analyzed and experts were consulted regarding existing occurrences of bald eagle and previously occupied sites within San Diego County, the CNF, and within two miles of the Project ROW. Selected sites of bald eagle occurrences within the CNF were visited to assess their current conditions (mitigation measures identified in the FEIR/EIS [Aspen 2008] stipulate a 4,000-foot buffer between construction and active eagle nests during the breeding season). If current conditions at sites within the CNF included suitable large trees for nesting or suitable cliffs for nesting and known fish populations for foraging, these sites (Lake Barrett, Lake Morena, El Capitan Reservoir, and Loveland Reservoir [Winter pers. comm.]) were used as the standard by which to assess the quality of areas along the Project ROW for bald eagle. In addition, recent nesting bald eagle information was obtained for a known nesting site at Lake Henshaw in northern San Diego County located approximately 25 miles away from the Project ROW. Chambers Group biologists (K. Alberts and R. Fletcher) visited this area and were able to view the bald eagle nest and its surroundings. The Lake Henshaw nesting site is currently the only known active bald eagle nesting site in San Diego County (P. Bloom pers. comm., Jeff Wells pers. comm.). Methods to address potential impacts to this species included the assessment of previous occurrence sites for current nesting, wintering, and dispersing habitat suitability. Because the primary method of review for bald eagle presence/absence relied upon readily available public data and the assessment of current site

conditions, surveys for nesting bald eagles were not conducted for the Project ROW in 2009. Bald eagle surveys will be conducted in 2010 prior to construction.

3.2.2 California Spotted Owl

A habitat assessment and three protocol surveys were conducted in summer 2009 for California spotted owl (spotted owl) on the Project ROW and its vicinity 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 ROW along Fred Canyon Road as reference sites for this species (see Table 3). 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, USFS 2009), and five observations at the second reference site in 1995 (CNDDB 2009, USFS 2009). These are the closest historic occurrences of this species along the Project ROW, and other CNF occurrences are generally farther north and/or at higher elevations.

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. Chambers Group biologists K. Alberts, L. Lina, and R. Fletcher then identified areas within the Project ROW (and within approximately 500 feet of the ROW, access roads, work areas, TSAPs, etc.) for suitable habitat (based on mitigation requirements in the FEIR/EIS [Aspen 2008]) on July 22 and 23, and September 2, 2009. Reference site #1 was chosen as a preferred study site for relative ease of access. Table 3 below provides a summary of survey site locations.

Table 3
California Spotted Owl Survey Sites*

Site	Easting	Northing
Reference Site #1	0553022	3626987
Reference Site #2 (no calling point)	0554628	3627199
Survey Site #1	0554735	3625521
Survey Site #2	0527840	3620564
Survey Site #3	527717	3620114
Survey Site #4	0527192	3618090

*All locations in UTM, Zone 11S.

During the evenings of July 22 and 23, and September 2, 2009 Chambers Group biologists K. Alberts, L. Lina, and/or R. Fletcher returned to the first Fred Canyon reference site (#1) as well as areas determined by USFS spotted owl survey protocols (1991) to be suitable to gather presence/absence information by conducting presence/absence surveys. Territorial calls were played with a digital audio (mp3) player and speakers at calling points in the reference sites and suitable habitat sites. Because all patches of suitable habitat near the Project ROW were too small to support multiple calling points, one calling point was set at a prominent point to cover the entire site. Calls were played in each direction from the calling point at a frequency of generally one series of 10-second durations per two to three minutes, with silence

between to listen for owls. The surveyors followed this protocol for 10 to 40 minutes at each location for spotted owl responses.

3.2.3 California Cactus Wren

California cactus wren surveys were performed by Chambers Group concurrently with protocol coastal California gnatcatcher surveys in 2009. In addition, all historic USFS, San Diego County Bird Atlas, and CNDDB data were analyzed for occurrences of this species within San Diego County. All potentially suitable Diegan coastal sage scrub and Diegan coastal sage scrub - inland form patches that contained ample quantities of succulents (i.e., coastal prickly pear and/or coast cholla) within the Project ROW or within 500 feet of the ROW were surveyed for the presence/absence of this species. Surveys were performed by Chambers Group biologists K. Alberts, D. Busby, and E. LaCoste. Visual searches for cactus wrens, their habitats, and/or their nests were conducted from the Scripps Substation, Pomerado Substation, and Elliott Substations of the Reconductor portions of the Project route, east to MP 70. While in the field, the surveyors also listened for California cactus wren calls and searched for nest sites in succulent patches.

3.2.4 Herpetofauna

All historic USFS and CNDDB data were analyzed for occurrences of RFSS herpetofauna within San Diego County, along with herpetological survey reports specific to this project (Helix 2007, Helix/Jones & Stokes 2007, RECON 2009a). Since there is no established agency protocol to survey many of the RFSS amphibians and reptile species, a general survey methodology for all eight RFSS herpetofauna species (i.e., one amphibian, and seven reptiles) was developed and utilized by Chambers Group biologists and sub-contractors during surveys, site visits, and biological monitoring efforts. Surveys to locate these species within the Project ROW and its vicinity in the CNF included moving/lifting and inspecting near and under rocks, logs, vegetative debris, waterways and other habitats, and looking inside animal burrows using mirrors and flashlights. Potato rakes were used to gently rake leaf-litter and decomposed granitic or sandy soils in the attempts to locate some species, including large-blotched salamander, California legless lizard, and San Diego ring-necked snake. Surveys were conducted by Chambers Group biologists K. Alberts, R. Alvidrez, R. Fletcher, C. Elkins, C. Bugbee, C. Soykan, and E. Strods on April 23, May 21, June 10 through 12, 14 and 15, 2009.

Funnel trap arrays made up of silt fencing and two funnel traps at each end were placed at three locations with two sub-locations per array, within CNF boundaries to trap herpetofauna. Each array was placed in a mosaic of riparian, upland, and woodland habitats in order to maximize trapping success and to yield a high diversity of trapped species. These arrays were deployed for 24 hours during each session. Wooden board shelters were also placed near the arrays and were inspected for herpetofauna during each session. Surveys were conducted by Chambers Group biologists R. Fletcher, K. Alberts, C. Bugbee, and C. Elkins. The arrays were deployed in five sessions (April 26 and 27, May 6 and 7, May 20 and 21, June 10 through 12, and June 14 and 15, 2009) at locations depicted in Table 4.

Table 4
Funnel Trap Array Locations*

Site	Easting	Northing
Array P-132A	0555489	3625412
Array P-132B	0555333	3625571
Array P-109A	0551982	3618775
Array P-109B	0551912	3618739
Array P-25A	0527681	3620174
Array P-25B	0527675	3620110

*All locations in UTM, Zone 11S.

Additional survey methods included: 1) driving on USFS and paved roads within and next to USFS lands in late summer months to look for the presence of reptiles during nocturnal hours; 2) visual surveys of streams, waterways, and ponds within and adjacent to USFS lands to detect species associated with aquatic habitats including large-blotched salamander, southwestern pond turtle, and two-striped garter snake. These additional methods were employed by Chambers Group biologists K. Alberts, R. Fletcher, R. Alvidrez, L. Lina, and L. Gorman on June 23, July 7, and September 2, 2009. Additional incidental observations of RFSS amphibians and reptiles and their potential habitats were collected during all biological monitoring efforts in 2009 and 2010.

3.2.5 Mammals (Bats)

Historic USFS and CNDDB data, as well as the 2004 USGS bat inventory of the CNF (Stokes and Fisher 2004) and the MCAS Miramar 2001 bat survey (SDSUF 2001) were analyzed for occurrences of RFSS bat species within San Diego County. Biologist D. Stokes surveyed locations of proposed Project structures for bat roosts throughout the summer of 2009 using a combination of review of maps/aerial photographs and field investigations on the ground. Surveys for roosts included investigating suitable rocky outcrops, cliffs, tree snags, oak/riparian trees, and man-made structures for bats and bat sign (e.g., guano, urine staining) within 50 meters of proposed structures. Estimates of the potential (high or moderate ranking) for bat roosts to occur within 300 and 1,000 meters of the proposed structures, and foraging habitat to occur within 100 meters of the proposed structures and transmission line were made in 2009.

Four Anabat II bat detector stations (manufactured by Titley Electronics, New South Wales, Australia) were placed in the field to record and monitor free-flying bat echolocation signals for two consecutive nights, September 1 and 2, 2009 (O'Farrell et al. 1999). Three of the four Anabat detectors were placed along La Posta Creek while the fourth was placed in Hauser Canyon. These sites were chosen because no recent data was available, but suitable habitat was identified based on historic data and field investigations on the ground, within the Project ROW and in proximity to the CNF where bats were most likely to be present (D. Stokes, pers. comm.). Each detector was placed in proximity to the expected route of the transmission line (directly beneath, where possible). The Anabat detectors were programmed to record bat echolocation signals with a start record time of 1830 hours and an end record time of 0700 hours to maximize detection of bat species throughout the entire night. The recorded bat calls then were downloaded and analyzed in a laboratory setting. Most bat calls recorded

were identified to the species level (O'Farrell et al. 1999). Anabat locations (using the world geodetic system 84 datum) are detailed in Table 5.

Table 5
Anabat Bat Detector Locations*

Site	Easting	Northing
Anabat 1	0556886	3627996
Anabat 2	0555009	3624169
Anabat 3	0553300	3620692
Anabat 4	0544058	3613416

*All locations in UTM, Zone 11S.

SECTION 4.0 – EXISTING ENVIRONMENT AND STATUS OF VEGETATION COMMUNITIES WITHIN THE PROJECT AREA

The Project Area in this BE includes all USFS lands contained within the boundaries of the CNF that would be impacted directly or indirectly by the Project (Appendix A). Vegetation communities are based on the vegetation mapping conducted for the Project. The vegetation descriptions below are based on those found in the Project FEIR/EIS (Aspen 2008), the Southern California Forest Plan Revisions-Habitat Status Reports (USFS 2006), and the 2009 Project ROW Vegetation Community Descriptions (SDG&E 2009). The 2009 Project ROW Vegetation Community Descriptions are based on the refinement of Holland's (1986) vegetation descriptions by Oberbauer (1996).

Vegetation communities within the action area, as currently aligned, include developed areas, disturbed habitat, big sagebrush scrub, Diegan coastal sage scrub, Diegan coastal sage scrub-inland form, non-native grassland, chamise chaparral, chamise chaparral-burned, northern mixed chaparral, northern mixed chaparral-disturbed, scrub oak chaparral, southern mixed chaparral, coast live oak woodland, and southern coast live oak riparian forest.

As stated in the 2009 Project ROW Vegetation Community Descriptions (SDG&E 2009), the following vegetation communities are found along the current Project ROW alignment in the CNF. These vegetation communities and summaries of their occurrences in the Project ROW are described below.

Chaparrals

Chamise Chaparral (CC) – Chamise chaparral is characterized by sclerophyllous (thick, stiff, heavily cutinized evergreen leaves, and hard-woody stems) shrubs dominated by chamise (*Adenostoma fasciculatum*), which has the widest range of any chaparral shrub. Common associates within this community include birch-leaf mountain mahogany (*Cercocarpus betuloides* var. *betuloides*), black sage (*Salvia mellifera*), California sagebrush (*Artemesia californica*), chaparral candle (*Hesperoyucca whipplei*), mission Manzanita (*Xylococcus bicolor*), and scrub oak (*Quercus berberidifolia*).

Within the Project Area, this community is the most prevalent from La Posta south and along the southwestern boundary of the CNF. This community, along with northern and southern mixed chaparral, has the widest distribution of any community within the CNF.

Chamise Chaparral-Burned (CC-B) – This is the same habitat as chamise chaparral, but has not fully recovered from its last fire event.

Within the Project Area, this community is most prevalent in the southwestern and western portion of the CNF where fires in 2003 and 2007 burned through the chamise chaparral community.

Northern Mixed Chaparral (NMC) – Northern mixed chaparral is characterized by sclerophyllous shrubs forming thick, often impenetrable stands. Vegetation is dominated by scrub oak, chamise, and various taxa of manzanita (*Arctostaphylos* spp.) and *Ceanothus* spp. Plants within this community are typically deep rooted, and there is generally little understory present.

Within the Project Area, this community is most prevalent from the eastern boundary of the CNF where the Project enters CNF-managed land at McCain Valley south to La Posta.

Northern Mixed Chaparral-Disturbed (NMC-D) – This is the same habitat as northern mixed chaparral with a high proportion of nonnative species because of natural and/or anthropogenic disturbances.

Within the Project Area, this community is most prevalent in disturbed areas from the eastern boundary of the CNF where the Project enters CNF-managed land at McCain Valley south to La Posta.

Scrub Oak Chaparral (SOC) – Scrub oak chaparral is a dense evergreen chaparral found at sites generally more mesic than other chaparral communities and typically includes some of the dominant plant species found within southern and northern mixed chaparral (e.g., chamise, birch-leaf mountain mahogany, manzanita, etc.). Scrub oak chaparral is dominated by one of three scrub oak species within San Diego County: Nuttall's scrub oak (*Quercus dumosa*), scrub oak, or Muller's scrub oak (*Quercus cornelius-mulleri*). There are typically zones of hybridization between occurrences of these species.

This community is found in small patches throughout the CNF. Within the Project Area, this community is found in limited distribution from McCain Valley south to La Posta, in the southwestern portion of the CNF where the Project crosses Lyons Valley Rd., as well as in the western portion of the CNF where the Project enters Alpine.

Southern Mixed Chaparral (SMC) – Southern mixed chaparral is a sclerophyllous shrub dominated vegetation community where the dominant plant species include big-berry manzanita (*Arctostaphylos glauca*), black sage, California buckwheat (*Eriogonum fasciculatum*), chamise, chaparral whitethorn (*Ceanothus leucodermis*), coast spice bush (*Cneoridium dumosum*), giant stipa (*Achnatherum coronatum*), scrub oak (*Quercus* X *acutidens*), Ramona-lilac (*Ceanothus tomentosus*), scrub oak, sugar bush (*Rhus ovata*), toyon (*Heteromeles arbutifolia*), and manzanita (*Arctostaphylos glandulosa*). Where this vegetation community is found within the Project Area, the dominant plant species are dependent upon slope, aspect, elevation, and edaphic factors.

This chaparral is also subject to disturbance, thus the proportion of non-native species can be much higher because of natural and/or anthropogenic disturbances.

Within the Project Area, this community is most prevalent along the southeastern boundary of the CNF from La Posta south and along the southwestern boundary of the CNF from Lyons Valley north to the Bell Bluff Truck Trail area. It also occurs along the southwestern boundary of the CNF from Pat's Canyon north to the Sweetwater River.

Coastal and Montane Scrubs

Big Sagebrush Scrub (BSS) – Big sagebrush scrub is mostly a treeless, soft-woody shrub dominated community dominated by big sagebrush (*Artemisia tridentata*). Big sagebrush can form pure stands but often occurs with other shrubs including bitterbrush (*Purshia tridentata*), rubber rabbit-bush (*Chrysothamnus nauseosus*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), black bush (*Coleogyne ramosissima*), Mormon-tea (*Ephedra viridis*), horsebrush (*Tetradymia canescens*), and hopsage (*Grayia spinosa*). Annual grasses and forbs also typically occur within big sagebrush scrub, including cheat grass (*Bromus tectorum*) and other non-native grasses.

Small areas of this community occur within the Project Area at La Posta and at Hauser Canyon.

Diegan Coastal Sage Scrub (DCSS) – Diegan coastal sage scrub is generally found on steep, xeric slopes with clay rich soils that slowly release stored water (Holland, 1986). The dominant plant species within

Diegan coastal sage scrub communities are generally determined by soil type, slope, and aspect. This community generally intergrades with chaparrals (Holland 1986) at elevations generally over 1,000 meters (3,280 feet). Typical species found within Diegan coastal sage scrub include black sage, California buckwheat, California sagebrush, laurel sumac (*Malosma laurina*), and lemonadeberry (*Rhus integrifolia*).

Within the Project Area, this community is most prevalent in the western portion of the CNF from Alpine west through the El Monte Valley.

Diegan Coastal Sage Scrub-Inland Form (CSSI) – Diegan coastal sage scrub–inland form is similar in structure to the coastal form, but lower growing, and occurs at elevations greater than 1,000 feet above mean sea level. CSSI is typically predominated by foothill buckwheat (*Eriogonum wrightii* var. *membranaceum*) or white sage, and generally lacks the presence of coastal sagebrush. This form may also contain species such as matchweed (*Gutierrezia* spp.) and cheat grass.

Within the Project Area, this community is most prevalent in the western portion of the CNF from Alpine west.

Riparian Forest and Woodlands

Coast Live Oak Woodland (CLOW) – According to the FEIR/EIS (Aspen, 2008), coast live oak woodland is an evergreen woodland community, dominated by coast live oak (*Quercus agrifolia*) that may reach a height of 35 to 80 feet. The shrub layer may consist of toyon, Mexican elderberry (*Sambucus mexicana*), fuchsia-flowered gooseberry (*Ribes speciosum*), and poison oak (*Toxicodendron diversilobum*). A dense herbaceous understory is often present with miner's lettuce (*Claytonia perfoliata* var. *perfoliata*) and chickweed (*Stellaria media*) as potential dominant species. This community occurs along the coastal foothills of the Peninsular Ranges, typically on north-facing slopes and in shaded ravines.

Within the Project Area, this community is most prevalent along the southeastern boundary of the CNF from McCain Valley south to La Posta, but it can be found in small patches along ephemeral drainages throughout the CNF.

Southern Coast Live Oak Riparian Forest (SCLORF) – Southern coast live oak riparian forest varies from dense to open evergreen riparian forest dominated by coast live oak and a variety of willow species. Subdominant species can include western sycamore (*Platanus racemosa*), poison oak, mule fat (*Baccharis salicifolia*), Mexican elderberry, and Douglas' mugwort (*Artemisia douglasiana*). This community occurs along the outer floodplains of canyons and valleys on fine-textured alluvial soils (Holland, 1986).

This community is found in limited distribution throughout the CNF in riparian corridors and valleys that provide enough water to sustain this community year round.

Non-native Vegetation, Developed Areas, and Disturbed Habitat

Non-native Grassland (NNG) – Non-native, annual grasses and forbs of Mediterranean origin typically characterize non-native grasslands. Dominant species may include ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis ssp. rubens*), slender wild oat (*Avena barbata*), Italian ryegrass (*Lolium multiflorum*), and black mustard (*Brassica nigra*).

Within the Project Area, this community is most prevalent at La Posta and from Barber Mountain north to Japatul.

Developed (DEV) – Developed lands generally include areas that have been graded or otherwise physically altered to such an extent that conditions no longer exist to support native vegetation. Within the Project Area, this land cover type also includes dirt access roads that have some potential to support vegetation.

Developed lands are scattered throughout the Project ROW.

Disturbed Habitat (DH) – This category is primarily used to identify areas of severe impacts to natural communities to the extent where it is no longer sustaining or functioning naturally. Areas of heavy Off Highway Vehicle (OHV) use fall into this category. Disturbed habitat consists of areas where anthropogenic factors (*i.e.,* disking, blading, chaining, ranching, agriculture, *etc*.) have degraded the pre-existing native habitat to such a degree that it is unlikely that the habitat present prior to the disturbance will recover to pre-disturbance conditions. Disturbed habitat typically contains a wide assortment of native and non-native plant species including, but not limited to, black mustard, broom baccharis (*Baccharis sarothroides*), California buckwheat, California burclover (*Medicago polymorpha*), California sagebrush, cheeseweed (*Malva parviflora*), deerweed (*Lotus scoparuis*), horehound (*Marrubium vulgare*), long-beak filaree (*Erodium botrys*), red-stem filaree (*Erodium cicutarium*), starwort (*Spergula arvensis*), tocalote (*Centaurea melitensis*), white sweetclover (*Melilotus albus*), wild oat (*Avena fatua*), and wild radish (*Raphanus sativus*). These areas can be bare of vegetation or dominated by non-native forbs and generally provide limited habitat value.

Disturbed habitat areas are scattered throughout the Project ROW.

SECTION 5.0 – SPECIES ACCOUNTS AND STATUS OF PLANTS AND WILDLIFE WITHIN THE PROJECT AREA AND CNF

5.1. PLANT SPECIES ACCOUNTS

Twenty-three plant species on the RFSS Plant List have the potential to occur within the Project ROW based on known occurrences, the presence of suitable vegetation communities, and appropriate soil types (Table 1). Species that were observed during focused rare plant surveys for the Project on lands within and/or adjacent to the CNF in 2008 include Jacumba milk-vetch, Descanso milk-vetch, Orcutt's brodiaea, Dunn's mariposa lily, Payson's jewelflower, long-spined spineflower, delicate clarkia, Tecate tarplant, Ramona horkelia, felt-leaved monardella, Gander's ragwort, and southern jewelflower (Appendix D). RFSS plant species that were observed within and/or adjacent to the CNF during the 2009 rare plant surveys include Jacumba milk-vetch, Dunn's mariposa lily, delicate clarkia, felt-leaved monardella, Moreno currant, Gander's ragwort, and southern jewelflower.

As 2008 and 2009 were periods of lower than average rainfall, the ability to accurately detect ephemeral annual species may have been affected. As a result, SDG&E assumed that all areas of available habitat of these undetected ephemeral annual plant species are occupied (for conservatism) until surveyed in an average rainfall year. Ephemeral annual species not observed in 2009, but assumed to be occupying available habitat include vanishing buckwheat, mission blue cup, Hammitt's clay-cress, and southern jewelflower.

5.1.1 Dean's Milk-vetch (*Astragalus deanei*)

Dean's milk-vetch is known only from the southwest Peninsular Ranges of San Diego County. Dean's milk-vetch is an herbaceous perennial in the Fabaceae (Legume) Family that blooms from March to May. This species occurs in open chaparral, coastal sage scrub, riparian sandy washes, exposed slopes, and coast live oak understories. It is found on undisturbed slopes in the shade of low-growing shrubs, in roadcuts, and in grazed areas generally occurring between 243 and 2,178 feet.

The CNDDB reports 16 occurrences for the species (CNDDB 2009). Four of the occurrences are located on the CNF, near the San Diego River, Hauser Creek, and the Barrett Honor Camp (USDA Forest Service 2005). Seven of the occurrences are old unconfirmed records from the literature, and one occurrence is reported as extirpated. The remaining four occurrences are on private lands and are presumed to be extant with an unknown number of individuals per occurrence. In addition, there are seven records in the San Diego Natural History Museum Plant Atlas (SDNHM Plant Atlas 2008), including El Cajon Mountain and Morena Butte in the CNF and two collections from Sloan Canyon immediately adjacent to the CNF. Additional reported localities of this species include Cottonwood Creek below Lake Barrett, Potrero Creek, Dehesa and Tecate Road (Reiser 2001, Beauchamp 1986). RFSS data provided by CNF shows several populations of Dean's milk-vetch within two miles of the proposed alignment: south of Barrett Lake on Barrett Lake Road, just north of Barrett Lake near Pine Valley Creek, and south of Lake Morena on the northern slope of Hauser canyon (USDA Forest Service 2005).

Populations of Dean's milk-vetch on private lands are threatened by development. Much of the historical habitat probably utilized by this species has been developed for sand mining and golf courses. Three of the four CNF occurrences are located near roads and immigrant trails. These sites can potentially be threatened by road maintenance or expansion. However, Astragalus species are commonly found in disturbed environments. Occurrences in Pine Creek Wilderness receive few visitors

except for migrant travelers or from adjacent private land owners. The San Diego River occurrence is slightly remote and receives few visitors (USDA Forest Service 2005).

Dean's milk-vetch is considered to have low to moderate vulnerability on NFS lands. On NFS lands, there is little to no risk of extirpation of these occurrences due to three of the four CNF occurrences being protected within existing and proposed wilderness areas. Potential threats to these occurrences include trampling and soil erosion from trail use. The existence of trails creates openings in which the species can grow. Occurrences are not clustered in one area, decreasing the likelihood of one catastrophic event destroying all populations of this plant on the CNF. The trend for this species appears to be stable on the CNF (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 69 and MP 104. During the 2009 focused rare plant surveys, a small population of Dean's milk-vetch (eight individuals) was observed near the CNF. However, Dean's milk-vetch was not observed on USFS land or within the CNF during the surveys. No known occurrences of Dean's milk-vetch intersect the Project impact areas within the CNF. Nineteen known records of Dean's milk-vetch occur within 10 miles of the Project ROW, including several locations off CNF land (Appendix D).

5.1.2 Jacumba Milk-vetch (*Astragalus douglasii* var. *perstrictus*)

Jacumba milk-vetch is known from the eastern Peninsular Ranges of San Diego and Imperial counties and northern Baja California. Jacumba milk-vetch is an herbaceous perennial in the Fabaceae (Legume) Family that blooms from April through June. This species occurs on stony hillsides and gravelly or sandy flats in open chamise chaparral, oak woodlands, valley grasslands, pinyon-juniper woodland, and in grazed willow scrub on decomposed granite soils at elevations between 2,900 and 4,500 feet (USDA Forest Service 1998, CNPS 2001). This plant seems to favor areas with mild soil disturbance; scattered individuals have been seen on road shoulders where there is little competition from other species (Stephenson and Calcarone 1999). Plants may also be soil type specific (USDA Forest Service 1998).

The CNDDB lists 37 occurrences for the species (CNDDB 2009). Two of these occurrences are on privately owned lands. Although last seen in 1978, these populations are presumed extant. The remaining occurrences are on federal lands with the majority on BLM lands with 23 occurrences. The Bureau of Indian Affairs (BIA) also lists four recorded occurrences of this species. On the CNF, there are eight occurrences in the southeastern most part of the CNF, including Cottonwood Fire Station, Cameron Fire Station, Kitchen Creek Road, Morena Valley, Boulder Oaks Campground, and Buckman Springs (USDA Forest Service 2005). There are nine records in the SDNHM Plant Atlas 2008, including two in the CNF from Cottonwood Valley and Kitchen Creek. Additional localities near the Project ROW and the CNF include Jacumba, Boulevard, Live Oak Springs, McCain Valley and Miller Valley (Reiser 2001, Beauchamp 1986).

Suitable habitat for this species occurs within the Project ROW between MP 40 and MP 67. The majority of known occurrences for this species is located on BLM lands and is presumed extant. Occurrences on the CNF are stable and appear to thrive in disturbance environments, growing in roadbeds and trampled soils from cattle grazing. Non-native weed invasions may threaten some locations. In addition, occurrences on private lands may be threatened by development. Occurrences of Jacumba milk-vetch on the CNF are stable and have low vulnerability to local extirpation due to their ability to thrive in areas of ground disturbance. Removal of ground disturbance has been observed to be detrimental to a population of this taxon. For instance, when a parking area at the Cameron Station Native Plant Nursery was relocated to avoid plants, the plants in the old parking area died out (USDA Forest Service 2005).

During the 2008 rare plant surveys for the Project, many occurrences of Jacumba milk-vetch were observed in the southeastern portion of the CNF from La Posta Truck Trail, La Posta, Buckman Springs Road, Kitchen Creek Road, Cottonwood Valley, and Cameron Valley. Estimates for the numbers of individuals observed on the CNF at these localities total approximately 310 individuals for all the occurrences combined. All patches were small to moderately sized (<100 individuals). Some occurrences were observed during surveys of particular alignments that are not a part of the proposed Project. A total of 24 individuals of Jacumba milk-vetch were mapped in the 2008 surveys within the current Project ROW; these occurrences are located within the ROW near MP 59 and MP 60 (within the CNF) but are not proposed to be impacted by the current Project.

Jacumba milk-vetch was observed on Thing Valley Road between MP 53 and MP 54 (within the CNF) during the 2009 rare plant surveys. The population of eight individuals was dispersed within a sparse grove of coast live oaks. At the time of the survey the population was within a designated pull site; subsequent refinement of the Project alignment has avoided this population, and it will not be impacted by Project activities. The surrounding habitat adjacent to this patch of Jacumba milk-vetch consisted of dense chamise chaparral. Jacumba milk-vetch was observed frequently east of CNF lands in McCain Valley in washes and moderate disturbed areas within chamise chaparral. In addition to 2008 and 2009 surveys, RFSS data provided by the USFS shows a cluster of several populations of Jacumba milk-vetch in Cameron Valley approximately 6,000 feet northwest of the Project ROW (USDA Forest Service, 2005). Four hundred and thirty seven known records of Jacumba milk-vetch occur within 10 miles of the Project ROW (Appendix D).

5.1.3 Descanso Milk-vetch (*Astragalus oocarpus*)

Descanso milk-vetch is endemic to the mountains of San Diego County (Reiser 2001). Occurrences are located on or near Palomar, Cuyamaca, and Volcan Mountains. Descanso milk-vetch is an herbaceous perennial in the Fabaceae Family. Plants flower from June through August. It occurs in cismontane chaparral edges at the periphery of meadows (Reiser 2001) and in chaparral openings and cismontane woodlands at elevations between 2,000 and 5,000 feet (CNPS 2001). Plants are also found along roadsides and in moderately disturbed areas (USDA Forest Service 2005). The species is often associated with manzanita species and chamise in coarse sandy loam. Plants may require mild disturbance to facilitate population expansion (Reiser 2001).

The CNDDB reports 28 occurrences for this species (CNDDB 2009). Seven occurrences are old, un-confirmed sightings needing additional field reconnaissance, 13 are located on private lands, three are within the Cuyamaca State Park, and one is located on land administered by the City of San Diego. All occurrences are presumed extant. The remaining four occurrences are on the CNF, with three locations on the Palomar Ranger District and one on the Descanso Ranger District. The occurrence on the Descanso Ranger District is near the Boy Scout Camp west of Poser Mountain. Another reported location along the San Diego River was documented in 1978 (USDA Forest Service 2005). There are 39 records in the SDNHM Plant Atlas 2008, but only one south of Interstate 8 (I-8), and that collection was made in 1934. Other reported localities include Descanso, Capitan Grande Indian Reservation, and Loveland Reservoir (Reiser 2001, Beauchamp 1986).

Descanso milk-vetch may be threatened by loss of habitat and lack of protection throughout its range (USDA Forest Service 1998). Although mild soil disturbance may help in new individual establishment, heavy sustained recreational use in the Cuyamaca Mountains from horse riding and mountain biking may negatively affect plants (Reiser 2001). Descanso milk-vetch may be threatened with loss of habitat and lack of protection throughout its range (USDA Forest Service 1998); however the montane

populations of this taxon were presumed stable in 2001 (Reiser, 2001). Threats to the CNF occurrences are not well known. The Pine Hills and San Diego River occurrences are in remote locations receiving few visitors. For potential locations within the San Diego River Canyon, dispersed recreation activities may affect habitat, but effects cannot be predicted without surveys of the area, as plants could occur on steep slopes and may not be affected at all or may occur on flat ground where dispersed recreational use occurs. The Poser Mountain Boy Scout Camp is adjacent to a Forest system road and near privately owned lands. The one plant at this occurrence may receive mild disturbance due to the proximity to a NFS road and privately owned lands. The Descanso milk-vetch is considered to have moderate to high vulnerability on NFS lands. Although three of the four populations on the CNF are in remote locations receiving few visitors, occurrences are limited and population numbers are limited from one to a few plants. These occurrences may be susceptible to local extirpation from routine USFS activities due to the small population size (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 87 and MP 104. During the 2008 focused rare plant surveys for the Project, 20 individuals of Descanso milk-vetch were observed in the south central portion of the CNF along Dubois Truck Trail. These individuals were observed during surveys of an alignment that is no longer a part of the proposed Project. Descanso milk-vetch has not been detected within the revised Project ROW, but suitable habitat occurs onsite. The Project ROW is within the historic and current ranges of the species, so there remains potential for its occurrence. Descanso milk-vetch was not observed in the CNF during the 2009 rare plant surveys, and no known occurrences intersect the current Project ROW within the CNF. Nineteen records of Descanso milk-vetch occur within 10 miles of the Project ROW; only one of these occurs within two miles of the ROW (Appendix D).

5.1.4 Orcutt's Brodiaea (*Brodiaea orcuttii*)

Orcutt's brodiaea is endemic to the Peninsular Ranges of San Diego and southern Riverside counties and Baja California. Orcutt's brodiaea is an herbaceous perennial in the Themidaceae (Brodiaea) Family. It occurs along drainages and vernally wet areas in needlegrass grasslands, openings in closed-cone coniferous forest, cismontane woodlands, chaparral, and meadow habitats below 5,300 feet. The species is associated with clay, serpentine, and gravelly loam soils (CNPS 2001, USDA Forest Service 2005). Plants thrive in full sun (CNPS 1977) in the presence of seasonal standing water for a short period of time and may require drying of the soils during plant dormancy. Summer irrigation of some pastures may rot bulbs during dormancy (CNPS 1977). Associated species include dwarf brodiaea (*Brodiaea terrestris* spp. *kernensis*), San Bernadino bluegrass (*Poa atropurpurea*), Parish's meadowfoam (*Limnanthes gracilis* var. *parishii*), blue dicks (*Dichelostemma capitatum*), and annual hairgrass (*Deschampsia danthonioides*). Deer and cattle browsing on this species have been observed. In addition, fire may be beneficial for plants, reducing competition for nutrients and light with non-native weeds (CNPS 1977).

The CNDDB lists 100 occurrences for the species, seven of which are presumed extirpated and 12 are historical or unconfirmed records (CDFG 2008). Sixteen occurrences are documented for the CNF. About 38 percent of the occurrences are on privately owned land and 43 percent are on locally protected lands on the CNF, Department of Defense lands, Cuyamaca State Park, The Nature Conservancy (TNC) lands, and local municipalities. The CNF has 10 additional records not recorded in the CNDDB. Population numbers are high at most sites, ranging from 25 to over 1,000 individuals per site at the "pure" populations. At the Miller Mountain/San Mateo Wilderness area, there are over 20,000 individuals that show some degree of hybridization with *B. filifolia*. Documented occurrences within the CNF and near the Project ROW include Viejas Valley, southeast of Viejas Mountain, Japatul-Dehesa Road, King Creek,

Morena Creek watershed, El Cajon Truck Trail, Rock Mountain and the Cuyamaca Mountains (USDA Forest Service 2005). There are 36 SDNHM Plant Atlas 2008 records, including records from Japatul Valley and near Corte Madera Valley within the CNF.

Suitable habitat for Orcutt's brodiaea occurs within the Project ROW between MP 61 and MP 118. Orcutt's brodiaea is threatened by urban development, invasion of non-native weeds, OHV activity, military training, dumping, road maintenance, grazing, summer irrigation, and changes in ground availability. Occurrences on protected local municipality, state, federal or TNC lands are threatened by non-native weed invasions. Orcutt's brodiaea has low vulnerability to local extirpation on NFS lands. The CNF has 18 recorded occurrences with the majority of the locations in remote areas that receive few visitors. Population numbers are high at most sites, ranging from 25 to over 1,000 individuals (USDA Forest Service 2005).

During the 2008 rare plant surveys for the Project, six individuals of Orcutt's brodiaea were observed in the south central portion of the CNF near King Creek. These individuals were observed during surveys of an alignment that is not a part of the proposed Project. Orcutt's brodiaea has not been detected within the Project ROW, but suitable habitat exists, and the Project ROW is within the historic and current ranges of the species; thus there remains potential for its occurrence. Orcutt's brodiaea was not observed within the CNF during the 2009 surveys. Although no known occurrences of Orcutt's brodiaea intersect the Project ROW within the CNF, a population of Orcutt's brodiaea is known 50 feet east of the Project ROW along Japatul Road near Dehesa (USDA Forest Service 2005). Fifty eight known records of Orcutt's brodiaea occur within 10 miles of the Project ROW, including several within one mile of the ROW (Appendix D). The distribution is spread from low-lying coastal areas to high montane elevations.

5.1.5 Dunn's Mariposa Lily (*Calochortus dunnii*)

Dunn's mariposa lily is only present in the southern Peninsular Ranges in southern San Diego County and Baja California (Fiedler and Ness 1993). Dunn's mariposa lily is a branched herbaceous perennial from a bulb and is a member of the Liliaceae (Lily) Family. Plants flower from April to June. The species does not reproduce asexually through bulbifery (Fiedler and Ness 1993). The number of bulbs that flower in a year may be dependent on rainfall averages for the year. Decreased flowering was observed at San Miguel Mountain during a low rainfall year. Plants may respond favorably to disturbance and fire, as observed on the Guatay Mountain fuel break. Like other Calochortus species, Dunn's mariposa lily appears to be a fire follower, occupying early successional habitats following disturbance (Sproul and Beauchamp 1979).

Dunn's mariposa lily is associated with gabbro and metavolcanic soils or sandstone, in closed-cone coniferous forest, rocky openings in chaparral, and grassland/chaparral ecotones at elevations of 1,220 to 5,950 feet (CNPS 2001). There are about 14 known populations of the species on the CNF including Guatay Mountain, Barber Mountain, Morena Creek and King Creek near the Project ROW (USDA Forest Service 2005). Other known localities near the CNF include Featherstone Creek in Barona Valley, Otay Mountain, Tecate Peak, San Miguel Mountain, Jamul Mountains, Cuyamaca and Laguna Mountains (USDA Forest Service 2005, Reiser 2001, Beauchamp 1986). There are twenty records in the SDNHM Plant Atlas 2008, including the Morena Creek and Guatay Mountain localities within the CNF.

Populations of the species on private lands are threatened by development and non-native species invasions. Populations on BLM and CNF lands are threatened from unauthorized OHV use, illegal immigrant trampling of plants, and border patrol activities (CDFG 2008). Unauthorized motorbike activity has been observed on the fuel breaks at Guatay Mountain, the largest occurrence of Dunn's

mariposa lily on the CNF. Plants are also vulnerable to over-collecting and ground disturbance including grazing and mining while over-wintering as a bulb (USDA Forest Service 1998). Populations may also be threatened by high fire frequencies, type converting native grasslands into non-native grasslands. Plants may also be sensitive to herbicides, as observed with the decrease in individual numbers at Otay Mountain (Sproul and Beauchamp 1979). Other populations protected on other federal lands or state lands are in remote areas with no threats.

Suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. Dunn's mariposa lily was observed in the Project ROW during the 2008 and 2009 rare plant surveys. During the 2008 rare plant surveys for the Project, two patches of Dunn's mariposa lily, totaling 50 individuals, were observed in the southwestern portion of the CNF just east of Gaskill Peak. This population has been excluded from the Project ROW by subsequent rerouting. Dunn's mariposa lily was observed in the CNF on USFS land during the 2009 rare plant surveys southwest of Barrett Lake. A population of 57 individuals was observed near Barber Mountain, north of Deerhorn Valley Road on gabbroic soil. The CNF reports five additional populations at Barber Mountain (USDA Forest Service 2005). No known locations of Dunn's mariposa lily intersect the Project impact areas within the CNF. The populations of Dunn's mariposa lily on Barber Mountain are outside of the Project ROW. Fifteen known records of Dunn's mariposa lily occur within 10 miles of the Project ROW alignment, including three locations within one mile (Appendix D).

5.1.6 Payson's Jewelflower (*Caulanthus simulans*)

Payson's jewelflower is restricted to the foothill and desert regions in San Diego and Riverside counties. This annual is a member of the Brassicaceae (Mustard) Family blooming from March to May. This species occurs in rocky, granitic and sandy microhabitats within chaparral, sage scrub and juniper woodland communities. (Reiser 2001, CNPS 2001) and is also found in streambeds and on steep, rocky slopes (Stephenson and Calcarone 1999).

The only reported CNF record of Payson's jewelflower within the CNF and near the proposed Project ROW occurs in an open area beside Thing Valley Road (USDA Forest Service 2005). There are 22 SDNHM Plant Atlas 2008 records for this species, including along La Posta Creek and near Thing Valley on CNF land. Other reported localities near the proposed Project and the CNF include Campo and McCain Valley (Reiser 2001, Beauchamp 1986). In addition, a population of Payson's jewelflower is known approximately 400 feet east of the Project ROW near Thing Valley Road (USDA Forest Service 2005).

Populations of Payson's jewelflower on private lands are threatened by development and nonnative species invasions. On NFS lands, all the occurrences are located along roadsides and trails. Trampling and non-native weed invasions may also affect populations. In addition, fuel break construction and maintenance along ridges and/or roads where these populations occur may also contribute to non-native weed invasions and trampling if maintenance activities occur before plants annually set seed (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 45 and MP 63. During the 2008 rare plant surveys for the Project, many occurrences of Payson's jewelflower were observed in the southeastern portion of the CNF from La Posta Creek, La Posta Truck Trail, and near the confluence of Kitchen and Horse Canyon Creeks. Estimates for the number of individuals observed on the CNF at these localities total approximately 6,400 individuals for all the occurrences combined. Patch sizes ranged from several individuals to several thousand individuals. Some occurrences (e.g., 65 individuals near the confluence of Kitchen and Horse Canyon Creeks) were observed during surveys of particular alignments

that are no longer a part of the proposed Project. A total of 1,350 individuals were observed in the Project ROW at that time. Payson's jewelflower was not observed within the CNF during the 2009 rare plant surveys. Ninety-seven known records of Payson's jewelflower occur within 10 miles of the Project ROW, including numerous locations within and adjacent to the ROW (Appendix D).

5.1.7 Lakeside Ceanothus (*Ceanothus cyaneus*)

Lakeside ceanothus occurs in the southern Peninsular Ranges of San Diego County and Baja California, and is an evergreen shrub in the Rhamnaceae (Buckthorn) Family. It appears to hybridize with other congeners (*C. leucodermis* and *C. tomentosus*), and plants outside the Crest or El Cajon Mountain areas may be hybrids (Reiser 2001). Lakeside ceanothus occurs in chaparral and closed-cone conifer habitats at elevations of 770 and 2,500 feet (CNPS 2001). It generally is found in inland mixed chaparral, which tends to be taller and more mesic than other woody scrub communities in the region (Reiser 2001). It occurs in thick, impenetrable stands of chaparral with other shrubs, such as chamise and manzanita. Lakeside ceanothus could be considered a dominant species at some of the areas where it occurs (USDA Forest Service 1998). It also occurs in Tecate cypress forest on Otay Mountain (CDFG 2008). At Crest locations (off NFS lands), the soil types are mapped as Acid Igneous rock land and Cieneba very rocky coarse sandy loam. The species is found in San Diego County from Crest to the foothills of Lakeside, including significant populations on El Cajon Mountain (Reiser 2001). The species can be common within this narrow range.

Lakeside ceanothus is present at four locations on El Cajon Mountain on the CNF (CDFG 2009). Another reported location is mapped near Devil's Hole east of Wildhorse Peak. Most occurrences are on County Parks or private lands. The CNDDB lists 26 occurrences for the species (CDFG 2009). The majority of these occurrences are on private lands (65 percent), with the remaining protected on federal lands (BIA, BLM, Forest Service) and one population within an Audubon Sanctuary. Many of these occurrences are older or unconfirmed sightings. There are 19 SDNHM Plant Atlas 2008 records, including three from El Cajon Mountain on the CNF.

At the Crest area, populations may be threatened by encroaching development projects. However, 20 percent of the plants in this area are protected in an open space easement. Populations along El Cajon Truck Trail on the CNF are stable with no known threats. High fire-return interval may type-convert the dense chaparral to non-native grasslands. Lakeside ceanothus is considered to have low vulnerability on NFS lands. These populations are currently stable with no known threats from USFS activities. However, these populations may experience local extirpation in the event of a catastrophic event due to the localized occurrences with small population numbers (between 20 and 120 per site) (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 96 and MP 114. Lakeside ceanothus was not observed on the CNF during the 2008 or 2009 rare plant surveys. Although no known occurrences of Lakeside ceanothus intersect the Project ROW within the CNF, two populations of Lakeside ceanothus are known in the general area, approximately 1,100 feet west of the Project ROW near Glen Oaks and approximately 2,000 feet north of the Project ROW near the El Capitan Reservoir (USDA Forest Service 2005). Twenty five known records of Lakeside ceanothus occur within 10 miles of the Project ROW alignment (Appendix D). For the overall Project, two occurrences (I-1 and I-2) are located within the proposed tower structure site EP48-2 in Wildcat Canyon near milepost 107 (Chambers Group, 2010). Another occurrence is located adjacent to EP47-2 but will not be impacted (RECON 2009, Chambers Group 2010).

5.1.8 Long-Spined Spineflower (*Chorizanthe polygonoides* var. *longispina*)

Long-spined spineflower occurs in the Peninsular Ranges of Riverside and San Diego counties and in Baja California (Hickman 1993, CNPS 2001). Long-spined spineflower is a small, prostrate, annual herb in the Polygonaceae (Buckwheat) Family. It is associated with heavy, often rocky, clay soils of gabbro-derivation in open areas of needlegrass grasslands, coastal scrub and chaparral habitats, but it has also been found at the edges of vernal pools in grasslands and meadows (Reiser 2001). The species is also associated with mountain meadows in sandy loam soil (USDA Forest Service 2005). The species occurs at elevations of 100 to 4,760 feet (CNPS 2001). Associated species include needlegrass (*Nassella* spp.), slender wild oat, small flowered microseris (*Microseris douglasii ssp. platycarpha*), California sagebrush, Munz's onion (*Allium munzii*), red-skin onion (*A. haematochiton*), Palmer's grappling-hook (*Harpagonella palmeri*), prostrate spineflower (*Chorizanthe procumbens*), and small-flower bindweed (*Convolvulus simulans*) (USDA Forest Service 2005).

The CNDDB lists 42 occurrences for the species (CDFG 2008). Twenty-five (60 percent) of these occurrences are on private lands. However, 10 of the privately owned occurrences are on a biological preserve surrounding Lake Mathews, and eight of these occurrences are old records needing current confirmation of population status (CDFG 2008). The CNF has 14 occurrences, and the San Bernardino National Forest (SBNF) has several occurrences. The CNF locations near the Project ROW are limited to Barber Mountain (USDA Forest Service 2005). There are 25 SDNHM Plant Atlas 2008 collections, including the Barber Mountain and Corte Madera Valley occurrences.

Threats to long-spined spineflower on private lands include grazing, recreational use, and development. On the CNF, occurrences at Barber Mountain are threatened by OHV use and non-native plant invasion. Populations at Miller Mountain are subjected to grazing; however, the effects of grazing to the species are unknown. There are no threats to the occurrences within the San Mateo and Agua Tibia Wilderness (USDA Forest Service 2005).

During the 2008 rare plant surveys for the Project, one population of long-spined spineflower was observed in the southwestern corner of the CNF on Barber Mountain. No population estimate was given for this occurrence. Long-spined spineflower was not observed within the CNF during the 2009 rare plant surveys. The population mapped at Barber Mountain in 2008 is located outside of the Project ROW and will not be impacted by the project. No known locations of long-spined spineflower intersect the Project ROW within the CNF. Eleven known records of long-spined spineflower occur within 10 miles of the Project ROW alignment, including three locations within one mile (Appendix D).

5.1.9 Delicate Clarkia (*Clarkia delicata*)

Delicate clarkia occurs in the southern Peninsular Ranges of San Diego County and in northern Baja California, Mexico. The species is a small annual erect herb. Delicate clarkia occurs in oak woodlands and chaparral communities at elevations of 760 to 3,250 feet (CNPS 2001). It appears to be associated with gabbro soils (USDA Forest Service 1998) although it is also found on other soil types.

The CNDDB reports 26 occurrences for the species (CDFG 2008). The majority of these occurrences are on private lands or lands of unknown ownership. It occurs at several locations on the CNF including the upper San Diego River, south of Morena Reservoir, Corte Madera Mountain, El Capitan Reservoir, Featherstone Creek, Lyons Valley, Potrero and Viejas Mountain (USDA Forest Service 2005). Additional occurrences near the Project ROW and CNF include Kitchen Creek, Campo, Harbison Canyon, Deerhorn Valley, and Alpine (Reiser 2001, Beauchamp 1986). There are 26 SDNHM Plant Atlas 2008 records for

this species, including Corte Madera, Lake Morena, Hauser Canyon, Lyons Valley, Lawson Peak, Bell Bluff and Viejas Mountain on the CNF.

Populations on private lands lack protection and are declining because of increased urban and rural development. The occurrence in the Potrero vicinity on the CNF is threatened by non-native weed invasion. High fire-return intervals may type convert grassland savannahs to non-native annual grasslands (USDA Forest Service 1998). Threats to other locations on the CNF are unknown. However, the San Diego River occurrence may receive moderate levels of recreational use. The Viejas Mountain occurrence is abundant and receives few visitors. The Ritchie Creek location is within the newly purchased CNF property, which was historically grazed. Cattle from adjacent private lands occasionally stray on to the newly purchased property (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 67 and MP 104. During the 2008 rare plant surveys for the Project, several occurrences of delicate clarkia were observed in the southeastern and southwestern portions of the CNF from the confluence of Kitchen and Horse Canyon creeks, Cottonwood Valley, Japatul Road, Dubois Truck Trail, Boulder Creek, Boulder Creek Road, Sill Hill and Sunshine Mountain. Estimates for the number of individuals observed on the CNF at these localities total approximately 3,736 individuals for all the occurrences combined. All patches were small to moderately sized (less than 100 individuals) with the exception of the Dubois Truck Trail and Sunshine Mountain populations, which were estimated at 2,000 and 1,000 respectively. Some occurrences were observed during surveys of particular alignments that are no longer a part of the proposed Project.

Delicate clarkia was observed within the CNF on USFS lands, near structure EP70-3, near the El Capitan Reservoir during the 2009 surveys. This location is outside of the Project ROW and will not be directly impacted by Project activities. A USFS record indicates a delicate clarkia location on the east side of Barber Mountain in Pat's Canyon, which intersects with an access road (FS Route 17S10) west of structure EP-36-1. This road provides access to structures EP-36-1, EP-35-1, and EP-34-1, and the plant at this location may be directly or indirectly affected. No other known locations of delicate clarkia intersect the Project impact areas within the CNF. According to data provided by the USFS there is a documented population of delicate clarkia approximately 700 feet north of the Project ROW on the southern slopes of Hauser Canyon (USDA Forest Service 2005). Ninety-five known records of delicate clarkia occur within 10 miles of the Project ROW, including many locations on or adjacent to the ROW (Appendix D).

5.1.10 Tecate Tarplant (*Deinandra floribunda*)

Tecate tarplant is endemic to the Peninsular Ranges of southern San Diego County and Baja California (Hickman 1993, CNPS 2001). Tecate tarplant is an herbaceous annual in the Asteraceae (Sunflower) Family that blooms from August to October. This species was treated as *Hemizonia floribunda* in The Jepson Manual (Hickman 1993). However, studies of Mojave tarplant and related species have determined that the previous generic concept of *Hemizonia* encompassed several morphologically and genetically diverse lineages that should be treated as separate genera (Baldwin 1999). *Deinandra* includes those species with beaked fruits and bright yellow flowers but lacking spine-tipped leaves and bracts. Tecate tarplant grows along narrow drainages and sandy washes in chaparral at elevations to 4,000 feet (CNPS, 2001). It can typically be found growing with limited shrub cover, enabling plants to grow with limited vegetative competition (Reiser 2001) in soils that are well drained Reiff, Tollhouse, Mottsville and La Posta series, including sandy ravines, alluvial areas, and grassy areas.

Occurrences of Tecate tarplant on the CNF have only recently been documented along the southern boundary of the CNF near Hauser Canyon and Big Potrero Truck Trail. The CNDDB contains records for 17 occurrences for the species (CDFG 2008). Ten of the occurrences are on private lands and the remaining occurrences are located on BLM lands. Six of these occurrences are old or unconfirmed records needing surveys for current population status. The majority of the populations have 200 to 1,000 individuals, with some containing over 10,000. Occurrences of this species adjacent to the CNF include Potrero Valley Road, Bankhead Springs, McCain Valley, Dulzura, and Cottonwood (Reiser 2001, Beauchamp 1986). There are 20 SDNHM Plant Atlas 2008 records, but only one, Hauser Canyon, is located within the CNF.

Tecate tarplant appears to be stable throughout its range. However, grazing in sandy washes where plants occur threatens some populations (Reiser 2001). In addition, several occurrences are also threatened by subdivision development (CDFG 2008). Many of the occurrences on the CNF and adjacent to the CNF are along dirt roads and trails which may mimic the sandy washes (low cover, low competition) that this species frequently occurs in. As such, additional threats could come from vehicular traffic, but given its occurrence in these roads, disturbance may be a factor in its persistence.

Suitable habitat for this species occurs within the Project ROW between MP 69 and MP 80. During the 2008 focused rare plant surveys for the Project, several occurrences of Tecate tarplant were observed along the southern boundary of the CNF near Big Potrero Truck Trail. Approximately 400 individuals were observed on the CNF, however, many more additional patches were observed immediately south of and adjacent to the CNF on private and BLM-managed lands. Many of these occurrences are along dirt roads and trails, which may mimic the sandy washes (low cover, low competition) that this species frequently inhabits. All of these occurrences are within or adjacent to the Project ROW. A total of eight individuals of these populations will be temporarily impacted by the Project within the CNF. During the 2009 surveys, Tecate tarplant was commonly observed in relatively mesic drainages along the southern border of the CNF between MP 70 and MP 75 near Round Potrero Road and South Boundary Road. No populations of Tecate tarplant were observed within the CNF, though approximately 1,000 individuals were observed immediately adjacent to USFS lands and within the Project ROW. One hundred and thirty two known records of Tecate tarplant occur within 10 miles of the Project ROW, including numerous locations on and adjacent to the ROW (Appendix D).

5.1.11 Vanishing Buckwheat (*Eriogonum evanidum* [*E. foliosum* misapplied])

Vanishing buckwheat occurs in the Peninsular Ranges in Riverside and San Diego Counties and Baja California, and also from the San Bernardino Mountains in San Bernardino County (Hickman 1993, CNPS 2001). Vanishing buckwheat is an annual in the Polygonaceae (Buckwheat) Family that blooms from July to October. This species occurs in sandy or gravelly flats and slopes in sagebrush, oak woodland, and montane conifer woodlands. It grows between 3,600 and 6,900 feet in elevation. Suitable habitat for this plant exists on the CNF (USDA Forest Service 2005). Both Beauchamp (1986) and Reiser (1994) report one known location from Pine Valley in lower montane coniferous forest/juniper woodland. Another locality is known from Warner's Hot Springs. Vanishing buckwheat was recently relocated on the CNF in 2008 (Winter pers. comm. b). The species is known from only a few occurrences in San Bernardino, Riverside, and San Diego Counties. The SDNHM Plant Atlas 2008 has four records (one population recorded twice). Three of the records are from the 1930's and 40's; the fourth is from 1993 and is a relocation of a previous collection. In 2008, a small population of vanishing buckwheat was observed within CNF lands on sandy soils among Jeffery Pines and great basin sagebrush in Pine Valley (USDA Forest Service 2009b).

CNPS (2008) reports that most occurrences have not been relocated, and threats may include alteration of fire regimes, recreational activity and non-native invasive species. Vanishing buckwheat was historically collected in Riverside, San Bernardino, and San Diego Counties (Reveal 2005). The historic distribution included Pine Valley and Warner Springs in San Diego County, Garner Valley in the San Jacinto Mountains in Riverside County, and Big Bear Valley in the San Bernardino Mountains, and south to Baja California. Vanishing buckwheat is a newly-described annual herb in the buckwheat family (Polygonaceae) formerly included in the closely related *Eriogonum foliosum* (Reveal 2005).

Suitable habitat for this species occurs within the Project ROW between MP 53 and MP 62. Vanishing buckwheat was not observed on the CNF during the 2008 or 2009 focused rare plant surveys. No known occurrences of vanishing buckwheat intersect the current Project ROW area within the CNF. Although no populations of vanishing buckwheat were observed, 2008 and 2009 were below average rainfall years, which could directly affect the germination and growth of ephemeral annuals, such as vanishing buckwheat. As a result of potential low detectability, vanishing buckwheat is assumed to occur within all appropriate habitats (approximately 50 acres) in the Project ROW on USFS lands in the CNF. Two known records of vanishing buckwheat occur within seven miles of the Project ROW, including one location 0.23 miles away from the ROW (Appendix D).

5.1.12 Mission Canyon Bluecup (*Githopsis diffusa* ssp. *filicaulis*)

Mission Canyon bluecup is endemic to the Peninsular Ranges of San Diego and Riverside Counties (Hickman 1993). Mission Canyon bluecup is a small annual in the Campanulaceae (Bellflower) Family that blooms in May. This species grows in open, sandy areas in chaparral at elevations of 1,475 to 2,300 feet in moist sandy loam soils (CNPS 2001, Reiser 2001). Mission Canyon bluecup is known from only one location on CNF, Viejas Mountain, and it has been found in the vicinity of El Cajon Mountain adjacent to the CNF. The Viejas Mountain location is from the SDNHM Plant Atlas 2008 and may represent a recently discovered population as this species was not known to occur on the CNF prior to 2006 (USDA Forest Service 2005). There are nine SDNHM Plant Atlas 2008 records for this species, but only one, Viejas Mountain, occurs on the CNF. Additional occurrences near the CNF and Project ROW include Harbison Canyon, Featherstone Creek, and El Cajon Mountain on BLM land and Silverwood Wildlife Sanctuary owned by the Audubon Society (Reiser 2001, USDA Forest Service 2005). This species is threatened by development (CNPS 2008) though it is presumed to be stable in San Diego County (Reiser 2001).

Suitable habitat for Mission Canyon bluecup occurs within the Project ROW between MP 97 and MP 110. This species was not observed on the CNF during the 2008 or 2009 rare plant surveys. No known occurrences of Mission Canyon bluecup intersect the current Project ROW area within the CNF. Although no populations of Mission Canyon bluecup were observed, 2008 and 2009 were below average rainfall years, which could directly affect the germination and growth of ephemeral annuals, such as Mission Canyon bluecup. As a result of potential low detectability, Mission Canyon bluecup is assumed to occur in all appropriate habitats (approximately 40 acres) within the Project ROW area on USFS lands in the CNF. Two known records of Mission Canyon bluecup occur within two miles of the Project ROW (Appendix D).

5.1.13 Ramona Horkelia (*Horkelia truncata*)

Ramona horkelia is endemic to the Peninsular Ranges of San Diego County and Baja California (CNPS 2001). Ramona horkelia is a tufted, herbaceous perennial in the Rosaceae (Rose) Family that blooms from May to June. It occurs on clay soils derived from gabbro along vernal streams and disturbed areas

in mixed chaparral and cismontane woodlands at elevations of 1,300 to 4,225 feet (USDA Forest Service 2005, CNPS 2001).

The CNDDB has 28 records for Ramona horkelia. Six occurrences are on private lands or lands of unknown ownership. Most of the private land occurrences need population status verification. Other occurrences are protected on Marine Corps Base Camp Pendleton (Department of Defense), BLM, and CDFG lands. The majority of the occurrences are on NFS lands within the CNF, having 19 of the 29 occurrences recorded for the CNDDB. The CNF has 29 occurrence records at 12 different geographic locations. Within NFS lands, the species occurs on the CNF on all three Districts (Palomar, Trabuco, and Descanso). Plants occur in large numbers at Black Mountain, Lawson Peak, and Margarita Peak. Additional CNF occurrences include Viejas Mountain, Boulder Creek and El Cajon Mountain, and occurrences near the CNF and the Project ROW include McGinty Mountain, Gaskill Peak, Iron Mountain, and Featherstone Creek (Reiser 2001, Beauchamp 1986). There are 21 SDNHM Plant Atlas 2008 records, including two from Viejas Mountain, three from Gaskill Peak and one from Lawson Peak on the CNF.

Several locations of Ramona horkelia are impacted by recreational use, such as mountain climbing and hiking. The majority of the CNF occurrences are along roads. However, Ramona horkelia tolerates fire and moderate soil disturbances and appears to colonize openings and disturbed areas. Populations of Ramona horkelia are fairly large and well distributed on the CNF. Ramona horkelia is considered to have low vulnerability on NFS lands. Populations are stable on the CNF (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 104 and MP 79. During the 2008 rare plant surveys for the Project, several occurrences of Ramona horkelia were observed in the southwestern and south central portion of the CNF from east of Gaskill Peak and near Boulder Creek Road. Estimates for the number of individuals observed on the CNF at these localities total approximately 1,176 plants (for all occurrences combined). Patch sizes varied from one individual to 1000+ at the Boulder Creek Road site. Some occurrences were observed during surveys of particular alignments that are not a part of the proposed Project. Only the 26 individuals at the east of Gaskill Peak occurrence are within the current Project ROW.

Ramona horkelia was not observed during the 2009 surveys. Although no known occurrences of Ramona horkelia intersect the Project ROW within the CNF, several populations of Ramona horkelia are known in the general area of the Project. Populations of Ramona horkelia have been documented 20 feet west of the Project ROW at Gaskill Peak, approximately 3,000 feet west of the Project ROW at Lawson Peak, and approximately 2,800 feet west of the Project ROW along Japatul Road near Dehesa (USDA Forest Service 2005). Thirty five known records of Ramona horkelia occur within 10 miles of the Project ROW (Appendix D).

5.1.14 Heart-Leaved Pitcher Sage (*Lepechinia cardiophylla*)

Heart-leaved pitcher sage is an aromatic shrub in the Lamiaceae (Mint) Family that blooms from April-July. This species occurs in chaparral and woodland habitats (Reiser 2001). This broad-leaved shrub occurs in Orange, Riverside and San Diego Counties and in Baja California, Mexico. The two centers of population appear to be the Santa Rosa Mountains along the Orange-Riverside County border and the coastal mountains of Baja California. The population in San Diego County (i.e., Iron Mountain) is intermediate between these two locations (Reiser, 2001). The population on Iron Mountain occurs on metasedimentary soils (Friant series), while the Orange County populations occur on metabasic soils (Exchequer series) (Reiser 2001).

All recorded occurrences of heart-leaved pitcher sage on the CNF are from Orange and Riverside Counties (USDA Forest Service 2005). In San Diego County, this species is only known from Iron Mountain (Reiser 2001, Beauchamp 1986, USDA Forest Service 2005). All three SDNHM Plant Atlas 2008 records for this species are from Iron Mountain.

Populations in the Santa Rosa Mountains and Iron Mountain appear to be stable (Reiser 2001). Though some metavolcanic species can also occur on gabbro soils, this species has never been documented on such soils. However, a conservative estimate of potentially suitable habitat for this species within the Project ROW would be between MP 79 and MP 104. Heart-leaved pitcher sage was not observed on the CNF during the rare plant surveys in 2008 or 2009, and the species is considered to have a very low potential of occurrence in the Project ROW. One known record of heart-leaved pitcher sage occurs within three miles of the Project ROW (Appendix D).

5.1.15 Laguna Linanthus (*Linanthus orcuttii*)

Laguna linanthus occurs primarily in the Peninsular Ranges in San Diego and Riverside Counties (CNPS 2001). Laguna linanthus is a small annual in the Polemoniaceae (Phlox) Family and flowers from May to June (CNPS 2001). The plant can occur in populations of several thousand plants, and appears to be more abundant in years of higher rainfall (CDFG 2008). Laguna linanthus grows in openings in chaparral, lower montane coniferous forest, and pinyon-juniper woodland at elevations of 3,000 to 7,050 feet (CNPS 2001). It is sometimes found in disturbed areas (CDFG 2008).

A population is recorded from the eastern San Bernardino Mountains in San Bernardino County (Sanders 1996), and there is a historical record from Los Angeles County (CNPS 2001). Laguna linanthus also occurs in northern Baja California Norte (CNPS 2001). On the CNF, the species occurs at Laguna Mountain, Agua Tibia Wilderness, and Palomar Mountain. The CNDDB reports 22 occurrences for the species (CDFG 2008). Two of these occurrences are on privately owned lands, and the remaining occurrences are protected on publicly owned lands. One occurrence is on Palomar Mountain State Parks, three on Rancho Cuyamaca State Parks, and one on BIA land at the Los Coyotes Reservation. On NFS lands, two occurrences are known for the SBNF at Onyx Peak and Broom Flats, and 23 occurrences are recorded for the CNF. Several of the NFS occurrences are large, having greater than 2,000 plants each occurrence. There are 19 SDNHM Plant Atlas 2009 records, many in the Laguna and Cuyamaca Mountains. Pine Valley and Corte Madera Valley are the two closest records to the action area on the CNF.

Threats to occurrences on private lands are unknown. On the CNF, populations experience impacts from trampling by hikers at occurrences in the Laguna Mountains Recreation Area and along trails at Palomar Mountain. Populations in the Agua Tibia Wilderness are protected, receiving few visitors (USDA Forest Service, 2006). Laguna linanthus is considered to have low vulnerability on NFS lands.

Suitable habitat for this species occurs within the Project ROW between MP 53 and MP 56. Laguna linanthus was not observed during the 2008 or 2009 rare plant surveys. Seven known records of Laguna linanthus occur within 10 miles of the Project ROW, with only one occurrence within five miles (Appendix D).

5.1.16 Felt-leaved Monardella (*Monardella hypoleuca* ssp. *lanata*)

Felt-leaved monardella (Lamiaceae) is a rhizomatous, aromatic perennial herb that blooms from June through July (CNPS 2001) that grows in the understory of mixed chaparral, chamise chaparral, and

southern oak woodland at elevations between 975 to 5,118 feet (CDFG 2008). The species occurs mainly on gabbro soils. Felt-leaved monardella is endemic to the west slope of the Peninsular Ranges in San Diego County and northern Baja California, Mexico (Reiser 2001). About 50 occurrences are located on federal, state, and private lands and plants are documented within the CNF in the Palomar and Laguna Mountains (CDFG 2008).

CNDDB occurrences within the CNF near the proposed Project include Barber Mountain, Lawson Peak, Lyons Peak, Chiquito Peak, El Cajon Mountain Poser Mountain and Viejas Mountain. There are multiple occurrences of this species at many of these aforementioned localities. Fifty percent of CNDDB felt-leaved monardella occurrences are located within CNF boundaries, five percent are located within private land holdings, and 38 percent can be found on lands of unknown ownership (CDFG 2008). Populations on the CNF appear stable and are relatively well protected (USDA Forest Service 1998). Populations on private lands in San Diego County also seem to be stable, probably due to the tendency of the species to occupy peaks and ridgelines (Reiser 2001).

CNF occurrences of felt-leaved monardella at Lawson Peak, Barber Mountain, Viejas Mountain, and El Cajon Mountain are along forest system roads. Illegal OHV impacts threaten populations on Viejas, Poser, and Barber Mountains, and one population at Lawson Peak is located near a dirt trail (USDA Forest Service, 2006). There are 18 SDNHM Plant Atlas 2008 records, including Barber Mountain, two from Lawson/Gaskill Peaks, and four from Viejas Mountain on the CNF.

Suitable habitat for this species occurs within the Project ROW between MP 67 and MP 104. During the 2008 rare plant surveys for the Project, several occurrences of felt-leaved monardella were observed in the southwestern and south central portion of the CNF from Barber Mountain, east of Gaskill Peak, Poser Mountain and Poverty Gulch. Estimates for the number of individuals observed on the CNF at these localities total approximately 650 individuals (for all the occurrences combined). Patch size varied from a few individuals to over 100 individuals. The Barber Mountain and east of Gaskill Peak occurrences are within the Project ROW. A total of 230 individuals were observed at the east of Gaskill site. No population estimate was given for the Barber Mountain occurrence. Felt-leaved monardella was observed during the 2009 rare plant surveys within the CNF on USFS land at Barber Mountain near MP 80. Approximately 700 individuals were observed within the drainages amongst chamise chaparral. Due to reroutes implemented to reduce impacts, this population of felt-leaved monardella will be avoided by the Project. One hundred and six known records of felt-leaved monardella occur within 10 miles of the Project ROW, including several on and adjacent to the ROW (Appendix D).

5.1.17 Chaparral Beargrass (*Nolina cismontana*)

Chaparral beargrass is an evergreen shrub in the Nolinaceae (Nolina) Family that occurs in xeric coastal sage scrub and open chaparral on gabbro (Las Posas series) and sandstone soils (Reiser 2001, CNPS 2008). The species occurs in Ventura, Riverside, Orange and San Diego Counties (CNPS 2008), and is distributed in coastal drainages and foothills below 3,000 feet from Ventura to Orange Counties, with a few isolated populations in San Diego County (USDA Forest Service 2005). Occurrences are known from the foothills of the Santa Ynez Mountains, south through the Simi Hills and Santa Ana Mountains to the foothills west of the Pala, Palomar, Viejas, and Cuyamaca Mountains (USDA Forest Service 2005). Most occurrences for this species in San Diego County are in the northern portion of the County. The one known occurrence in the Project ROW is from the western slopes of Viejas Mountain (Reiser 2001). This is the southern-most known occurrence for this species. There are six separate SDNHM Plant Atlas 2008 collections from Viejas Mountain. All of these locations are north of the proposed Project and these locations appear to demarcate the southern limits of this species.

Chaparral beargrass is threatened by development, agriculture, road construction, and recreational activities (CNPS 2008, Reiser 2001). Suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. No individuals of this species were observed within the CNF during the 2008 or 2009 rare plant surveys and the species is considered to have a very low potential for occurrence in the Project ROW. Three known records of chaparral beargrass occur within two miles of the Project ROW (Appendix D).

5.1.18 Gander's Ragwort (*Packera ganderi*)

Gander's ragwort is a perennial herb in the Asteraceae (Sunflower) Family that blooms in April and May (CNPS 2001). Seed production appears to be influenced by annual variation in rainfall because Gander's ragwort does not produce much viable seed in drought years. This species occurs primarily in the understory of chaparral and is considered a gabbro endemic (Beauchamp 1986). It grows in chaparral at elevations of 1,300 to 3,900 feet. It is usually found on recently burned sites and gabbro outcrops (CNPS 2001, CDFG 2008), and is restricted to the southwest Peninsular Ranges in Riverside and San Diego Counties (Reiser 2001).

The CNDDB lists 17 occurrences of Gander's ragwort (CDFG 2008). Six of these occurrences are in private or unknown ownerships and one of these occurrences is on BLM land at McGinty Mountain. The remaining six occurrences are on the CNF. There are 15 SDNHM Plant Atlas 2008 records, including four on Lawson Peak, Barber Mountain, and El Cajon Mountain in the CNF. Some occurrences of Gander's ragwort on NFS lands are adjacent to roads and have been reported to be subject to disturbance by OHV use. Increased recreation pressures at mountaintops and peaks where plants occur may impact populations, due to trampling and collecting. In addition, road maintenance activities may also threaten occurrences, as well as reported shooting activities at Lawson Peak. Habitat loss from development appears to be a threat primarily on private lands (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. During the 2008 rare plant surveys for the Project, several occurrences of Gander's ragwort were observed in the southwestern corner of the CNF on Barber Mountain. A total of 160 individuals were observed at this location, all of which is within the Project ROW. A large population of Gander's ragwort (approximately 1,300 individuals) was observed during the 2009 surveys in the CNF at Barber Mountain near MP 80. Gander's ragwort was also observed growing on Las Posas (gabbro) soils beneath sparse chamise chaparral. Due to reroutes implemented to reduce impacts, all populations of Gander's ragwort will be avoided by the Project. Thirty-three known records of Gander's ragwort occur within 10 miles of the Project ROW, many of which are within one mile of the ROW (Appendix D).

5.1.19 Moreno Currant (*Ribes canthariforme*)

Moreno currant is endemic to the foothills of the Peninsular Ranges in southwest San Diego County (Reiser 2001). Moreno currant is a deciduous perennial shrub in the Grossulariaceae (Gooseberry) Family that blooms between February and April. It occurs along ephemeral stream channels, in chaparral associated with gabbro soils and large granite boulders. Water availability may be higher in the shadows of these large boulders, and this condition may help explain the microhabitat requirements for this species (Reiser 2001).

The CNDDB reports 16 occurrences for Moreno currant. Half of these occurrences are from the CNF, and half are located in private land holdings (CDFG 2008). CNDDB occurrences on the CNF include Morena Reservoir, Lyons Peak, Descanso Junction, Lawson Peak, and Skye Valley Road. Additional CNF

occurrences include Morena Butte and Corte Madera Mountain (USDA Forest Service 2005). There are 16 SDNHM Plant Atlas 2008 records, including three from Lake Moreno, three from Lawson/Gaskill Peaks, two from Descanso and one from Featherstone Canyon. Threats to populations on Forest land include potential damage to populations near Corral Canyon OHV Area and a popular shooting area at Lawson Peak. Naturally small population sizes may contribute to the decline of this species in the future (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 67 and MP 104. Moreno current was not observed within the CNF during the 2008 rare plant surveys. During the 2009 rare plant surveys for the Project, one individual of Moreno currant was observed just east of Gaskill Peak, outside the CNF but adjacent to the Project ROW. This location will be avoided by the project ROW. Seventeen known records of Moreno current occur within 10 miles of the Project ROW (Appendix D).

5.1.20 San Miguel Savory (*Satureja chandleri*)

San Miguel savory is a small, aromatic shrub in the Lamiaceae (Mint) Family that occurs in chaparral, and oak woodland communities and shows a high affinity to gabbro or metavolcanic soils (Reiser 2001, Beauchamp 1986). Open chamise chaparral dominated slopes are a common habitat in San Diego County and Baja, California (Reiser 2001). San Miguel savory occurs in the San Miguel and Santa Ana Mountains of the Peninsular Range occurring in Orange, Riverside, San Diego Counties and Baja California, Mexico (Hickman 1993, Reiser 2001).

Known occurrences near the Project ROW include San Vicente Reservoir, McGinty, San Miguel, Otay and the Jamul Mountains (Reiser 2001, Beauchamp 1986). This species is not known to occur within the CNF in San Diego County. All reports of occurrences of this species on the CNF are in Orange and Riverside Counties (USDA Forest Service 2005). There are 10 SDNHM Plant Atlas 2008 collections for this species, and none from the CNF. The closest collections to the CNF and Project ROW are from McGinty Mountain and Barona.

San Miguel savory is threatened by residential development, foot traffic, agriculture, recreational activities, and possibly by horticultural collecting (CNPS 2008). Threats on USFS lands include horticultural collecting and trampling from foot traffic on populations adjacent to hiking trails and recreation areas (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. No individuals of this species were observed within the Project ROW during the 2008 or 2009 focused rare plant surveys, and the species is considered to have a very low potential of occurrence in the Project ROW. Three known records of San Miguel savory occur within 10 miles of the Project ROW (Appendix D).

5.1.21 Hammitt's Clay-cress (*Sibaropsis hammittii*)

Hammitt’s clay-cress is an annual that blooms March through April and is the sole member of the new genus, Sibaropsis within the Brassicaceae (Mustard) Family (CNPS 2001). It is a newly described species discovered recently on three mountains in the Peninsular Ranges of southern California in San Diego and Riverside Counties. The leaf, flower, and fruit characteristics of this species distinguish it from any other mustard species occurring in California, and it occurs at Elsinore Peak in the Santa Ana Mountains and on Poser and Viejas Mountains in the Cuyamaca Range (Boyd and Ross 1997). All occurrences of Hammitt’s clay-cress are located on the CNF.

Hammitt's clay-cress is found on vernally saturated clay soils in patches of purple needlegrass grassland surrounded by chamise chaparral (Boyd and Ross 1997). Occurrences at the Elsinore Peak locale are found on clay soils derived from basalt outcrops or marine sediments; on Poser and Viejas Mountains, occurrences are found on clay soils derived from gabbro. The seven SDNHM Plant Atlas 2008 records are from Poser and Viejas Mountains. It appears that a constant supply of moisture and low levels of competition from other plants are required by Hammitt's clay-cress for successful growth (Boyd and Ross 1997).

Threats to some occurrences on Viejas and Poser mountains include unauthorized OHV activity, unauthorized cattle grazing, trash dumping, and the potential for tocalote (*Centaurea melitensis*), a state designated noxious weed, to spread into Hamitt's clay-cress habitat. All of the known populations of this species burned in the Cedar fire in the fall of 2003. The impact of the fire on the seed bank for this annual plant is unknown, but the species is expected to regenerate after the fire. However, the open ground created by the fire temporarily exacerbates the potential threats from unauthorized activities and the possible spread of tocalote and other invasive plant species on Viejas and Poser mountains (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. Hammitt's clay-cress was not observed during the 2008 or 2009 rare plant surveys, and the species is considered to have a very low potential of occurrence in the Project ROW. Four known records of Hammitt's clay-cress occur within three miles of the Project ROW (Appendix D).

5.1.22 Southern Jewelflower (*Streptanthus campestris*)

Southern jewelflower is restricted to the foothill and desert regions in San Diego and Riverside Counties. This annual is a member of the Brassicaceae (Mustard) Family blooming from March to May. This species occurs in rocky, granitic and sandy microhabitats within chaparral, sage scrub and juniper woodland communities, (Reiser 2001, CNPS 2001) and is also found in streambeds and on steep, rocky slopes (Stephenson and Calcarone 1999).

Within the CNF and near the proposed Project ROW, the CNDDB reports historical occurrences at Live Oak Springs, Descanso, Mt. Laguna, Campo, and Morena Reservoir. Populations of southern jewelflower on private lands are threatened by development and non-native species invasions. On NFS lands, all occurrences are located along roadsides and trails. Trampling and non-native weed invasions may also affect occurrences. In addition, fuel break construction and maintenance along ridges and/or roads where these populations occur may also contribute to non-native weed invasions and trampling, if maintenance activities occur before plants annually set seed (USDA Forest Service 2005).

Suitable habitat for this species occurs within the Project ROW between MP 53 and MP 69. Southern jewelflower was observed in five locations outside of the CNF and USFS lands during the 2008 rare plant surveys. None of these locations will be impacted by the Project. Southern jewelflower was not observed on USFS lands in the CNF during the 2009 rare plant surveys; however, two occurrences were found near the western edge of the CNF, including one location within the ROW area (Chambers Group 2009). These locations will not be impacted by the Project. Thirteen known records of southern jewelflower occur within 10 miles of the Project ROW alignment, including several on and adjacent to the ROW (Appendix D).

5.1.23 Parry's Tetracoccus (*Tetracoccus dioicus*)

Parry's tetracoccus is a deciduous shrub that blooms from April through May (CNPS 2001). It occurs on dry, stony slopes composed of gabbro-derived soils in chaparral and coastal scrub communities at elevations of 485 to 3,250 feet (CNPS 2001, CDFG 2008). Parry's tetracoccus is known from coastal southern California, the Peninsular Range foothills of Orange, Riverside, and San Diego Counties, and Baja California (CNPS 2001). This species is associated with chamise chaparral, and is considered a gabbro endemic (Beauchamp 1986).

One population is recorded from NFS lands and is located near the San Juan Campgrounds, Trabuco Ranger District of the CNF (USDA Forest Service 2005). The CNDDB lists 26 occurrences for Parry's tetracoccus. On NFS lands, there is one recorded occurrence from the CNF located between the upper and lower San Juan Campgrounds (CDFG 2008). Other occurrences on protected federal or preserve lands are on TNC (two sites), BIA (three sites on the Barona and Pala Indian Reservations), and on BLM lands (one site). The remaining occurrences (approximately 74 percent) are on privately owned lands. Many of these occurrences are old and/or unconfirmed records needing current population status reports. Some of the privately owned lands have over 100 to over 10,000 individuals. There are 36 SDNHM Plant Atlas 2008 records, but none from the CNF near the Project. The SDNHM Plant Atlas 2008 occurrences include Barona, Sycuan Peak, and Skyline Truck Trail.

Habitat conversion for agricultural uses and development projects is adversely affecting the species on private lands (CNPS 2001). Known impacts to occurrences on private lands include orchard expansion in the Pala Mesa and disturbance related to residential expansion in the San Marcos Hills (Reiser 2001).

Suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. Parry's tetracoccus was not observed during the 2008 or 2009 rare plant surveys. Thirteen known records of Parry's tetracoccus occur within 10 miles of the Project ROW in the CNF, including one location within one mile (Appendix D).

5.2. WILDLIFE SPECIES ACCOUNTS

Fifteen wildlife species on the RFSS List have the potential to occur within the Project ROW. Potential is based on historic and current species ranges, occurrence data, population trends, relative abundances, life history functions, habitat preferences, and/or observations during 2009 wildlife surveys and habitat assessments. Seven of these species were observed during the 2009 focused wildlife surveys and/or habitat assessments for the Project on lands within and/or adjacent to the CNF in 2009, including California legless lizard, coastal rosy boa, two-striped garter snake, San Diego horned lizard, pallid bat, Townsend's big-eared bat, and western red bat (Appendix D). These observations are detailed in the following species accounts.

5.2.1 Large-blotched Salamander (*Ensatina klauberi*)

The large-blotched salamander is a nocturnal species found within a wide range of mesic habitats from 1,700 feet to 5,400 feet in elevation (Stebbins 2003). Permanent water may or may not be present (Stebbins 2003). Habitat ranges from canyon live oak/Coulter pine-dominated woodlands and yellow pine/incense cedar-dominated coniferous forests to California scrub oak, toyon, and buckwheat-dominated shrubby assemblages (Jennings and Hayes 1994). Important habitat for large-blotched salamander includes moist soil near streams, with debris such as downed logs and leaf litter (USDA Forest Service 2005). Oak logs and organic debris may be favored during drier times of the year. It

breeds in the spring and/or fall, and it lays its grapelike cluster of eggs under rotting wood, bark, or underground. This species is known to hybridize with the Monterey ensatina (*Ensatina escholscholtzii escholscholtzii*) through parts of its range (Stebbins 2003).

Within the CNF, Laguna, Cuyamaca, Volcan, Palomar, and Hot Springs Mountains are known to support occurrences of large-blotched salamanders (Stephenson and Calcarone, 1999). These are all high elevation mountain sites that generally do not reflect the characteristics of the Project ROW, and are located to the north of the Project. Limited suitable habitat exists for this species along the Project ROW and the large-blotched salamander was not observed during the 2009 herpetofauna surveys. Suitable habitats along the Project ROW include stream channels, north-facing slopes with dense vegetation, moist areas, and woodlands with accumulated leaf litter. No published or known records of large-blotched salamander occur within 10 miles of the Project ROW (Appendix D).

5.2.2 California Legless Lizard (*Anniella pulchra*)

The California legless lizard is broadly distributed across the Los Padres, Angeles, San Bernardino, and Cleveland National Forests from sea level to 5,000 feet (Fisher and Case 1997). It is a burrowing species generally associated with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, or pine-oak woodland, or under sycamores, cottonwoods, or oaks on stream terraces (Stephenson and Calcarone 1999). The species also may be found under logs, rocks, and leaf litter (Stephenson and Calcarone 1999), and can be difficult to detect due to its burrowing nature. Soil moisture is necessary for thermal regulation, and animals may die if they are unable to reach a moist substrate. Soil moisture may limit these lizards within the extent of their range (Bury and Balgooyen 1976).

This species is thought to have been extirpated from approximately 20 percent of its known historical range due to urbanization, water diversion, agricultural development, and the spread of exotic plant species (Goldberg and Miller 1985, Jennings and Hayes 1994). Habitat for the California legless lizard is present in the La Posta Valley, Morena Valley, and along the San Diego River near El Capitan Reservoir. During the 2009 biological monitoring efforts for the Project, one individual legless lizard was observed in the La Posta Valley portion of the CNF in a sandy wash south of the Project ROW between MP 60 and MP 61. Additional suitable habitats occur along sandy washes, north-facing slopes, and other areas where leaf litter, logs, and rocks may offer shelter and a source of protective moisture. Two known records of California legless lizard occur within two miles of the Project ROW, including one 2009 observation (Appendix D). No other records were found within 10 miles of the Project ROW.

5.2.3 Coastal Rosy Boa (*Charina trivirgata roseofusca*)

This subspecies of the rosy boa occurs from the foothills of the San Gabriel and San Bernardino Mountains, south through San Diego County, and into the Sierra San Pedro Martir, Baja California. It can be found from sea level to 6,800 feet. Distribution is spotty throughout its range. The coastal rosy boa is associated with rocky coastal sage, inland sage, and chaparral-covered hillsides and canyons from the coast to the desert transition zone. It may be found under rocks, in rock crevices, or in boulder piles (Klauber 1931). It also is an excellent climber that willingly moves through vegetation and branches in search of prey which include small mammals, reptiles, amphibians, and birds that it kills through constriction (Stebbins 2003). Associated vegetation types include coastal sage scrub dominated by California sage and buckwheat, chamise chaparral, and *ceanothus*/manzanita chaparral. The coastal rosy boa is often attracted to oases, intermittent streams, and other sources of water (but does not require them), and even though it is chiefly nocturnal it is regularly seen during the day (Stebbins 2003).

The coastal rosy boa is believed to be declining due to loss of habitat and over-collecting, particularly in coastal areas where it was once common (Fisher and Case 1997). The Angeles, San Bernardino and Cleveland National Forests are all within the historical range of the coastal rosy boa, and all support this species (Klauber 1931, Fisher and Case 1997). Suitable habitat for this species occurs throughout the CNF. One coastal rosy boa was observed within the CNF during the 2009 herpetofauna surveys between trap arrays 109A and 109B, south of the U.S. Border Patrol Station on Old Highway 80. Several additional individuals were recorded to the east and west of the CNF, including El Monte Valley, McCain Valley, and near Jacumba. Seventeen known records of coastal rosy boa occur within 10 miles of the Project ROW, including several observations on and adjacent to the ROW (Appendix D).

5.2.4 Southwestern Pond Turtle (*Actinemys marmorata pallida*)

The southwestern pond turtle occurs along low-gradient streams, lakes, marshes, ditches, and ponds that have permanent or near-permanent water, and may be found in grasslands, woodlands, and open forests that surround such water features (Stebbins 2003). Within its aquatic environment, this species tends to prefer muddy bottoms and a prevalence of aquatic vegetation (Stebbins 2003). It occurs at elevations ranging from sea level to 5,000 feet (Jennings and Hayes 1994). Important habitat for the southwestern pond turtle includes rivers, streams, lakes, and wetlands. In addition, terrestrial habitat for overwintering behavior includes burrows in soil or leaf litter, and nesting sites include upland areas with high silt or clay substrate (USDA Forest Service 2008). During the day, pond turtles bask on rocks, logs, or stream banks. They will escape into the water when disturbed. Most activity is diurnal, although some nocturnal activity has been observed. In colder areas, turtles may hibernate in the mud below the water's surface or on land (Jennings and Hayes 1994). It is an omnivorous species that will take a variety of aquatic plants, fish, worms, insects, crayfish, carrion, and other opportunistic items (Stebbins 2003).

The southwestern pond turtle historically occurred throughout most coastal drainages of southern California. It is declining due to loss of habitat and predation by bass and bullfrogs (Jennings and Hayes 1994). CNDDB and USFS records list 24 occurrences of this species on the CNF. Two large populations of the species occur on the CNF in San Mateo Creek and Pine Valley Creek, with additional populations in appropriate habitat just outside the Forest. Other populations are known from Lake Barrett and Lake Moreno near the Project ROW. The Project ROW is outside of known southwestern pond turtle habitat, but is within the same watersheds as potential and occupied habitat, therefore species movements to and from the Project ROW may potentially occur and/or Project activities may potentially affect this species based on the proximity of occupied and suitable habitat. The southwestern pond turtle was not observed during the 2009 herpetofauna surveys or at any other time in 2009 and 2010. Thirty four known records of southwestern pond turtle occur within 10 miles of the Project ROW, including nine records within two miles of the ROW (Appendix D).

5.2.5 San Diego Ring-necked Snake (*Diadophis punctatus similis*)

This subspecies of the ring-necked snake is confined to mountains and watercourses and is associated with moist woodlands, grassland, chaparral, mixed conifer forest, and riparian areas in southern California. This species is diurnal, but seldom is seen in the open. It usually is found under cover objects, such as rotting logs, bark fragments, boards, and rocks during the day (Stebbins 2003). Prey items include earthworms, salamanders, small frogs, amphibian larvae, slugs, and other mesic-associated organisms. It is active at dusk and at night during warmer periods, and due to its secretive nature, is often difficult to detect. Ring-necked snakes may aggregate at dens for winter hibernation. Home range size is unknown (Zeiner et al. 1988). The San Diego ring-necked snake is believed to be declining due to loss of habitat.

The SBNF and CNF are considered to be within the range of the San Diego ring-necked snake and are likely to have suitable habitat for the species (Lind 1998). However, the San Diego ring-necked snake was not observed during the 2009 herpetofauna surveys. The CNDDB lists three records for this subspecies within 10 miles of the Project ROW, all of which are believed to be extant. One of these records is within one-half mile of the ROW. There are no USFS records of occurrence within 10 miles of the Project ROW (Appendix D).

5.2.6 San Diego Mountain Kingsnake (*Lampropeltis zonata pulchra*)

This California endemic subspecies of the mountain kingsnake is found from 1,640 feet to approximately 5,900 feet of elevation (Stebbins 2003, Jennings and Hayes 1994). The species in the interior mountains is associated with ponderosa, Jeffrey, and Coulter pines and black oak, and is infrequently found below the coniferous forest associations. At lower elevations, it is associated with mixed oak-coniferous forest in riparian woodlands, usually in canyon bottoms, that have western sycamore, Fremont cottonwood, coast live oak, willows, wild rose, and blackberries. It may be found in narrow riparian woodlands in association with chaparral and coastal sage vegetation types (Zweifel 1952). Rocks or rocky outcrops appear to be an important habitat element, providing suitable hibernation, refuge sites and food resources (Jennings and Hayes 1994). It also is an excellent climber and will move through bushes, perhaps to find bird nests (Stebbins 2003). Prey items include bird eggs and chicks, lizards, small mammals, and other prey. This species is primarily diurnal, but becomes more nocturnal during warmer months (Stebbins 2003).

The SBNF and CNF are within the historical range of the San Diego Mountain kingsnake and provide suitable habitat for this species (Fisher and Case 1997). Within the CNF along the Project, limited suitable riparian habitats exist for this species. The San Diego mountain kingsnake was not observed along the Project in 2009. Thirty-eight known records of San Diego mountain kingsnake occur within 10 miles of the Project ROW (Appendix D). These records are largely confined to more northerly, higher elevations than those found along the majority of the Project ROW, and only one record exists within three miles of the ROW.

5.2.7 San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*)

San Diego horned lizards occur in a variety of habitat types, including coastal sage, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest, but are more common in shrub-dominated communities with a limited overstory (Jennings and Hayes 1994, Stephenson and Calcarone 1999). Within these habitats, important elements include loose, fine soils with a high sand content, an abundance of native ants or other insects for prey, and open areas with limited overstories for basking, and low, but relatively dense shrubs for refuge. In the foothill and mountain areas that are covered with dense brush or other vegetation, San Diego horned lizards are largely restricted to areas with pockets of open microhabitat, such as fire breaks and roads (Jennings and Hayes 1994).

The Blainvillii subspecies occurs from the Transverse Ranges in Kern, Los Angeles, Santa Barbara, and Ventura Counties southward throughout the Peninsular Ranges of southern California to Baja California, Mexico as far south as San Vicente. It is found at elevations ranging from approximately 32 feet of elevation at the El Segundo Dunes (Los Angeles County) to approximately 6,988 feet of elevation at Tahquitz Meadow on Mt. San Jacinto (Riverside County). This taxon also occurs at scattered sites along the desert (eastern) slope of the Peninsular Ranges (Jennings and Hayes 1994).

Of the numerous records for San Diego horned lizard, 20 occurrences are thought to be extirpated. This subspecies is thought to be absent from about 45 percent of its former range in southern California due to habitat loss and over-collecting for the pet trade (Jennings and Hayes 1994). The Cleveland, San Bernardino, Angeles, and Los Padres National Forests are within the range of the San Diego horned lizard and provide suitable habitat for this species (Fisher and Case 1997). During the 2009 herpetofauna surveys and incidental observations during biological monitoring for the Project, 19 San Diego horned lizard occurrences were observed in the CNF both within and adjacent to the Project ROW, including access roads. Many of these observations occurred on bare dirt/gravel roads and openings within shrub communities. Approximately 265 known records of San Diego horned lizard occur within 10 miles of the Project ROW, including many observations on and adjacent to the ROW (Appendix D).

5.2.8 Two-Striped Garter Snake (*Thamnophis hammondii*)

This species typically inhabits perennial and intermittent streams with rocky beds bordered by willow thickets or other dense vegetation (Stebbins 2003). It also inhabits large sandy riverbeds, such as the Santa Clara River (Ventura County) when riparian vegetation is present along the stream course. This taxon also utilizes stock ponds and other artificially-created aquatic habitats (e.g., Lake Hemet, Riverside County) when a dense riparian border of emergent vegetation and prey (amphibians and fish) are present. This species is infrequently found in habitats where flooding, overgrazing, burning, or mechanical alteration has removed dense riparian vegetation. Limited data indicate that small mammal burrows are used as overwintering sites (Jennings and Hayes 1994). The life history of this species is poorly known. It is highly aquatic and is rarely seen far from water. It emerges from hibernation in the spring and may be active on warm winter days. It is active at temperatures ranging from 19 to 32 degrees Centigrade (Jennings and Hayes 1994).

This species has disappeared from approximately 40 percent of its historic range on the California mainland during the past century, and most of this has occurred since 1945 (Jennings and Hayes 1994). During the past decade, it has disappeared from numerous localities in Ventura, Santa Barbara, and San Luis Obispo Counties where habitat was once considered to be relatively secure from development. Currently, it is considered relatively common only in eastern San Diego County (Jennings and Hayes 1994). The Los Padres, Angeles, San Bernardino, and Cleveland National Forests are within the range of the two-striped garter snake and provide suitable aquatic habitats for this species (Fisher and Case 1997). Suitable habitat exists for this species along the Project in the form of several stock ponds, intermittent streams, and larger rivers, such as the Sweetwater River. The two-striped garter snake was not observed during the 2009 herpetofauna survey areas; however, three individuals were incidentally observed between MP 73 and MP 74 in March 2009 while the creek at that site (west of Kreutzkamp property) had some water flow. Thirty one known records of two-striped garter snake occur within 10 miles of the Project ROW in the CNF, including several within two miles of the ROW and three records within the ROW (Appendix D).

5.2.9 Coastal (San Diego) Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)

Cactus wrens occur from southern California to southern Baja California, Mexico, southeastward to Texas and Mexico (Rea and Weaver 1990). The coastal population of cactus wren occurs from southern Ventura County southeast to Los Angeles County, east along the lower slopes of the San Gabriel and San Bernardino Mountains and extending south along the coastal slopes and interior valleys west of the Peninsular ranges in western Riverside, Orange, and San Diego counties to northwestern Baja California, Mexico (Harper and Salata 1991 cited in California Partners in Flight website 2002). The subspecies' range has retracted considerably in San Diego County, and overall numbers have declined greatly

(Shuford and Gardali 2008). The eastern limits of the range are located west of the CNF portions of the Project site. The preferred habitat includes sage scrub with co-dominant or dominant succulent scrub, especially coast prickly pear (*Opuntia littoralis*) and coast cholla (*Opuntia prolifera*) from sea level to around 1500 feet. Prey items include a variety of insects and also some vegetation. This species builds a characteristic hollow football-shaped nest in chollas and prickly pears, and pairs maintain territories for life, with natal displacement rarely further than several miles from birthplace (Shuford and Gardali 2008). The primary threat to this subspecies is the loss of its succulent scrub/coastal sage scrub habitat.

The coastal cactus wren is not currently known to occur on the CNF; only potentially suitable habitat has been identified on NFS lands. The surveys conducted in 2009 did not locate additional suitable habitat for this species on the CNF. However, there are about 1,000 acres of potential habitat for this species on the CNF (Winter pers. comm.). The entire potential cactus wren habitat on the CNF in San Diego County was surveyed after 1998. No cactus wrens were detected, although some were found to occur in proximity to the Forest (Winter pers. comm.). Prior to 2009, the nearest known coastal cactus wren habitat is in the San Diego River canyon, on the El Capitan Reservation adjacent to CNF lands (Winter, pers. comm.).

Coastal cactus wren was not detected during the 2009 surveys on the CNF; however, two pair locations were noted just west of the CNF boundary in El Monte Valley between MP 102 and 104 south of the Project route. Chambers Group biologist K. Alberts identified one family group on the west side of a slope just below a proposed structure site, and another nesting pair on the east side of the same slope. Upon this discovery, a search of the area uncovered multiple nests from previous years, two of which were mapped as additional locations. Chambers Group biologist E. LaCoste then continued to monitor these birds during protocol California gnatcatcher surveys. The Project will not remove cactus stands in this area. In addition, noise levels will be monitored with noise meters by biological construction monitors; therefore, the Project would not impact these cactus wren identified outside of the CNF. Twenty-seven records of coastal cactus wren occur within 10 miles of the Project ROW (Appendix D). In addition to these records, the San Diego County Bird Atlas lists 45 occurrences within San Diego County over 10 miles from the Project ROW. The Bird Atlas also lists 17 occurrences within 10 miles of the ROW (Appendix C); some, if not all, of these records are also included as CNDDB records.

5.2.10 Bald Eagle (*Haliaeetus leucocephalus*)

In San Diego, Orange, and Riverside Counties, bald eagles occur primarily as winter residents and are found in the vicinity of reservoirs and along the coast. Within the CNF, bald eagles congregate at winter roost sites during the late fall, winter, and early spring. Currently and historically, bald eagles are found at reservoirs adjoining the Trabuco, Palomar, and Descanso Districts of the CNF. Wintering eagles spend the majority of their time around lakes, such as Lake Henshaw and Lake Morena on the CNF. They have also historically nested near El Capitan Reservoir, Barrett Lake, and the San Vicente Reservoir; City of San Diego staff (Pasek pers. comm.) noted one or two bald eagles at San Vicente Reservoir in 2009. Approximately 20-30 adult and juvenile bald eagles are observed each winter in these areas.

In southern California, bald eagles use a variety of habitat types for wintering activities. While most tend to use mixed conifer forest adjacent to lakes, some use chaparral types and oak/sycamore groves. The primary factor appears to be food availability, with bald eagles adapting to habitat where food is abundant. In addition to feeding on fish and waterfowl, they scavenge in agricultural valleys and wetlands, feeding primarily on carrion normally found in areas of cattle concentration and birthing, or where ranchers dispose of dead animals. Night roost sites are important due to special microclimates that provide shelter from the elements. Typically, night roosts are located on steep lee slopes where

eagles use groves of green trees for roosting, and are often used communally and year after year (USFWS 2007). Since DDT poisoning was identified as harmful to the structural integrity of the eggs and consequently banned from use in the U.S., bald eagles have increased in number nationally, and returned to many former breeding territories. Nests are typically very large, located prominently on a tall tree or cliff, built from sticks, and reused over consecutive breeding seasons.

Historically, bald eagles nested in San Diego County (Unitt 1984), and they have recently returned as a nesting species with at least one pair successfully nesting at Lake Henshaw beginning in 2003 and continuing through 2010 (Wells and Winter pers. comm.). There was no known instance of bald eagle nesting in 2008, and one egg lain in 2009 that did not hatch (Jeff Wells pers. comm.). The Lake Henshaw area, approximately 25 miles from the Project route, is the only known recent nesting site for this species within San Diego County. Given the trend toward population increases, the bald eagle may return to other local reservoirs and lakes located within the CNF to nest, including El Capitan Reservoir, Loveland Reservoir, Barrett Lake and Lake Morena (Winter pers. comm.). Recently, bald eagles were documented to occur on USFS lands at El Capitan Reservoir and Corte Madera Ranch (Winter pers. comm. April 2010) and San Vicente Reservoir (Winter pers. comm. May 2010). Forest staff relocated the bald eagle at Corte Madera on June 30, 2010 (Winter pers. comm. July 2010).

No bald eagles were observed during the 2009 habitat assessments, field surveys, and other site visits. However, suitable nesting habitat exists within the CNF directly adjacent to the Project ROW near Barrett Lake (from MP 79 to MP 81) and the El Capitan Reservoir (from MP 99 to MP 102). Lake Morena and Loveland Reservoirs also could serve to potentially support the nesting of this species in the future. All of these lakes contain ample fish forage, proximity to potential carrion scavenging sites, and have large trees or cliffs for potential nesting sites similar to the Lake Henshaw nesting site. Twenty-seven known records of bald eagle occur within 10 miles of the Project ROW (Appendix D). In addition to these records, the San Diego County Bird Atlas lists 14 occurrences within the County over 10 miles from the ROW, and 15 records within 10 miles (Appendix C); some, if not all, of these records duplicate CNDDB and USFS records.

5.2.11 California Spotted Owl (*Strix occidentalis occidentalis*)

The range of the California spotted owl has historically been limited within southern California due to the low amount of suitable habitat available (Unitt 1984). According to Unitt (1984), spotted owls were observed in San Diego County in Cuyamaca State Park in 1968 and 1974, North Peak in 1974, Mount Laguna in 1968 and 1975 and Palomar Mountain annually. In Orange County, spotted owls were observed in 1975 at Starr Ranch (Bloom pers. comm.). California spotted owls use a wide variety of wooded and forested habitats. They are generally permanent residents within their range, with territory size ranging from 100 to 600 acres (Zeiner et al. 1990). At lower elevations, they occur in coast live oak, alder, and sycamore woodlands along riparian areas. At higher elevations, they occur in mixed conifer/hardwood forests, and are often associated with big cone Douglas-fir and black oak. Nests may be 20-50 feet or more above the ground. Spotted owls do not construct their own nests; instead they rely on natural cavities or nests built by other birds or squirrels. Black oaks are frequently selected as nest trees because they often contain natural cavities. Breeding begins in February or March, and nestlings are seen by April or May with fledging in June or July. Clutch size ranges from one to four eggs, but is usually two (Zeiner et al. 1990). Roosting areas generally occur in dense shade, near water (Zeiner et al. 1990). Any tree species may be used as a roost. Spotted owls typically roost on a horizontal branch throughout much of the day. They often roost in pairs, or an adult owl may roost near its young.

Currently, there are 35 known territories on or adjacent to all three districts of the CNF (USFS 2009). 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 the 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 2009).

The California spotted owl was not observed during the 2009 RFSS surveys or at any other time during this project in 2009 and 2010. However, suitable habitat was observed for the species during the 2009 surveys directly adjacent to and within the Project footprint between MP 80 and MP 84 of the Project ROW. Several southern coast live oak riparian forest (SCLORF) and coast live oak woodland (CLOW) corridors that contain potentially suitable spotted owl habitat were recorded within 1,000 feet of the proposed Project ROW in this vicinity (Appendix A). One hundred and twenty one known records of California spotted owl occur within 10 miles of the Project ROW alignment (Appendix D).

5.2.12 Pallid Bat (*Antrozous pallidus*)

Pallid bats occupy a wide variety of habitats, including grasslands, shrublands, woodlands, desert washes, mixed montane conifer forests, and forests near sea level. This species is most common in open, dry habitats with rocky areas for roosting. The pallid bat is a yearlong resident in most of its range (WBWG 2005a). This species may be more common at elevations below 6,000 feet in both coastal and desert areas (Stephenson and Calcarone 1999, WBWG 2005a). Day roost sites may vary, but the species is commonly found in rock crevices, tree hollows, mines, caves and a variety of human-made structures. Tree roosting has been documented in large conifer snags, inside basal hollows of redwoods and giant sequoias, and bole cavities in oaks. Cavities in broken branches of black oak are very important for this species, and there is a strong association with black oak for roosting. Roosting sites are usually selected near the entrance to the roost in twilight rather than total darkness. The site must protect bats from high temperatures as this species is intolerant of roosts in excess of 40 degrees Celsius. Pallid bats are also very sensitive to roost site disturbance (Zeiner et al. 1990, WBWG 2005a). Night roosts are usually more open sites and may include open buildings, porches, mines, caves, and under bridges (Barbour and Davis 1969, WBWG 2005a).

The Angeles, Cleveland, San Bernardino, and Los Padres National Forests are known to have, or suspected of having, occurrences of pallid bat. Focused surveys for bats conducted on the four Southern California National Forests during 1986 to 1988 found pallid bats on the Los Padres and Angeles National Forests (Stephenson and Calcarone 1999). As recently as 2008, there were no recorded pallid bat occurrences within the Descanso Ranger District of the CNF, although appropriate foraging and roosting habitats exist at Lake Moreno, Boulder Oaks, Cibbets Flat, and Descanso that could support them (Stokes pers. comm.). The pallid bat is found in both the La Posta Creek and Hauser Canyon portions of the CNF, and is previously known from near the Barrett Lake-Alpine and El Capitan-El Monte Valley portions of the CNF. During the 2009 bat surveys, pallid bats were detected foraging in both the La Posta Creek and Hauser Canyon portions of the CNF, as well as the Jacumba/Boulevard area further east of the CNF (Stokes 2009). Although suitable roosting habitats exist on the CNF, no roosts have been identified for this species to date on the CNF. Seventeen known records of pallid bat occur within 10 miles of the Project ROW, including several records of foraging individuals on and adjacent to the ROW (Appendix D).

5.2.13 Townsend's Big-eared Bat (*Corynorhinus townsendii*)

The distribution of Townsend's big-eared bats is strongly correlated with the availability of caves and cave-like roosting habitat, with population centers occurring in areas dominated by exposed, cavity forming rock and/or historic mining areas (Stephenson and Calcarone 1999, WBWG 2005b). Abandoned mines are particularly important in areas where there are not well developed caves (Stephenson and Calcarone 1999). This species may also roost in man-made structures (Barbour and Davis 1969, WBWG 2005b). Roosting site variables are the most important limiting factor for this species, including narrow roosting requirements, and the loss, modification, and disturbance of roosting sites (WBWG 2005b, Gruver et al. 2006). Townsend's big-eared bats prefer mesic habitats, where they glean prey from brush or trees and/or feed along habitat edges (WBWG 2005b, Gruver et al. 2006). Townsend's big-eared bats exhibit a high degree of site fidelity and will return to the same roosts year after year. This species is not known to move over long distances. Townsend's big-eared bats generally stay within a year round radius of 12 to 18 miles, and the longest known seasonal movement in California is 20 miles.

Little is known about the distribution and abundance of this species. In the 2009 survey, the Townsend's big-eared bat was detected at six of 76 sites surveyed from 1996 to 1998 in the mountains and foothills of southern California (one site on SBNF and five sites on CNF) (Stephenson and Calcarone 1999). The Townsend's big-eared bat is previously known from near the Barrett Lake-Alpine and El Capitan-El Monte Valley portions of the CNF. During the 2009 bat surveys, Townsend's big-eared bats were detected foraging in both the La Posta Creek and Hauser Canyon portions of the CNF (Stokes 2009). Although suitable roosting habitats exist on the CNF, no roosts have been identified for this species to date on the CNF. A total of 56 known records of Townsend's big-eared bat occur within 10 miles of the Project ROW alignment, including several records of foraging individuals on and adjacent to the ROW (Appendix D).

5.2.14 Western Red Bat (Lasiurus blossevillii)

The western red bat occurs throughout California in elevations up to 6,000 feet and excluding desert habitat. Populations are scattered and considered rare throughout the state (WBWG, 2005c). The species is found primarily in riparian and wooded habitats, particularly in willows, cottonwoods, and sycamores (WBWG, 2005c). Western red bats are highly migratory between their summer and winter range, although migratory patterns are not well documented and winter behavior is poorly understood. However, it is known to winter in the San Francisco area and to the south, and has been observed hibernating in leaf litter (WBWG 2005c). Although the timing of migration for males and females seems to differ, groups tend to migrate together (Bolster 1998). Western red bats are typically solitary and do not form colonies. Roosting has been observed in caves, but generally these bats roost singly within tree foliage or shrubs, and often along edge habitat adjacent to streams or open fields (WBWG 2005c). Roost sites are generally hidden from view from all directions except from below. The lack of obstruction from below allows the bat to drop downward for flight. Roost sites usually have dark ground cover to minimize solar reflection, have nearby vegetation to reduce wind and dust, and are generally located on the south or southwest side of a tree (Bolster 1998).

In one regional study, mist net capture and/or Anabat acoustic detectors were used to identify the occurrence of western red bats at the following locations: upper Salinas River on the Los Padres National Forest, Sugarloaf Meadows and Big Bear Dam on the San Bernardino National Forest, and Laguna Meadow and Lost Valley on the Cleveland National Forest (Stephenson and Calcarone 1999). Most major riparian areas within the CNF are likely to have some occurrences of roosting and foraging western red bats, although present in low numbers (Stokes pers. comm.). The western red bat is likely to

occur in the Barrett Lake-Alpine and El Capitan-EL Monte Valley portions of the CNF near riparian zones (e.g., Cottonwood Creek, Sweetwater River, San Diego River). During the 2009 bat surveys, western red bats were detected foraging in both the La Posta Creek and Hauser Canyon portions of the CNF (Stokes 2009). The red bat also is known to occur on eastern MCAS Miramar (SDSUF 2001). Suitable deciduous roosting trees are found in many riparian areas of the CNF, and while no roosting individuals were observed in the recent studies, this species likely roosts within the CNF. It is likely present in additional numbers as a migratory species as well (Stokes pers. comm.). Twenty five known records of western red bat occur within 10 miles of the Project ROW in the CNF, including several records of foraging individuals on and adjacent to the ROW (Appendix D).

5.2.15 California Leaf-nosed Bat (*Macrotus californicus*)

California leaf-nosed bats occur within the Lower Sonoran life zone in the deserts of California, southern Nevada, Arizona, and south into Baja and Sonora, Mexico (WBWG 2005d). In California the species is found in Riverside, Imperial, San Diego, and San Bernardino counties (Zeiner et al. 1990). Preferred habitats include desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis (Zeiner et al. 1990). Distribution is limited to below 3,000 feet (WBWG 2005d). California leaf-nosed bats do not hibernate or migrate, and are incapable of lowering their body temperature. To remain active all year, this species depends on warm caves, mines or buildings with temperatures that often exceed 82 degrees Fahrenheit (WBWG 2005d). Consistent features of occupied roost sites include high humidity with no circulating air currents, and many mines used as roost sites appear to be in geothermically-heated rock formations (WBWG 2005d).

The distribution of the California leaf-nosed bat on southern California National Forest System lands is poorly understood, and the 1996 to 1998 bat surveys discussed for the other three bat species above in the four national forests produced no detections (Stephenson and Calcarone, 1999). The California leaf-nosed bat is previously known from near the Barrett Lake-Alpine portion of the CNF, though not known to occur directly on USFS land. While suitable foraging and roosting habitats exist on the CNF, the California leaf-nosed bat was not detected during the 2009 bat surveys (Stokes 2009). Four known records of California leaf-nosed bat occur within 10 miles of the Project ROW in the CNF (Appendix D). Three California leaf-nosed bat were identified by the CNDDB (2009) and one occurrence by Stokes (2009) along the Project ROW.

SECTION 6.0 – EFFECTS ON BIOLOGICAL RESOURCES

6.1. METHODS

6.1.1 Impact Area

The impact areas for the proposed actions were identified as follows:

- Areas of direct impacts were delineated based on the GIS mapping of temporary and permanent impacts areas of the Project as identified in the May 2010 PMR analysis;

- Areas of cumulative impacts were delineated based on the Project direct impact areas, Project ROW, and lands of varying distances from the direct impact areas and ROW depending upon the species at issue, as discussed below.

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 engineering components were grouped together using the following hierarchy:

Permanent Impacts

- Structure Footings
- Helicopter TSAPs (or TSAPs) with a 100' diameter from 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'
- New Access Roads (to be constructed)
- Permanent Maintenance Areas (typically 35'x75')
- Grading
- Structure Pad Areas (for conventional construction; 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
  - Road centerline buffered at: 5'.

6.1.2 Vegetation Impacts

A Geographic Information System (GIS) vegetation impact analysis utilizing the current field-reviewed engineering data for the Project ROW project was conducted. The boundaries of all permanent and temporary project features within and outside of the proposed transmission line alignment within the

Congressional CNF boundary were overlaid on San Diego Geographic Information Source (SANGIS) vegetation layers. Impacts to vegetation communities located on USFS lands were calculated and are presented in this BE. SANGIS vegetation data layers 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 the Project ROW where field studies had been performed.

6.1.3 Species Impacts

All plant and wildlife species source data were projected in State Plane, North American Datum 1983 (NAD 83), California Zone 6, in U.S. feet. Appendix A contains a mapbook displaying the GIS spatial information for all plant and wildlife species analyzed in this BE.

6.2. GENERAL EFFECTS TO BIOLOGICAL RESOURCES

A review of historical and currently known RFSS plant and wildlife species distribution and abundance data within and adjacent to USFS lands as presented in Section 5 (and Appendix D) were analyzed to determine the potential effects to RFSS presented in this BE. These effects include direct, indirect, and cumulative impacts. Direct effects, including loss or alteration of habitat, destruction of vegetation, and/or harassment, injury or mortality of RFSS wildlife species, will result from project construction and O&M activities. 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 and 437.07 acres of Project ROW. Additionally, when including associated ancillary facilities located on CNF owned/managed lands, the total area encompassed by the Project ROW is 541.80 acres. The Project ROW ground disturbance impacts and permanent and temporary Project impacts are discussed in more detail below.

6.2.1 Effects of Loss of Vegetation Communities

Permanent impacts would result from the construction of new Project facilities including lattice towers, permanent work pads, maintenance pads, TSAPs, and new access and spur roads. These direct impacts would total approximately 43.96 acres on USFS-managed lands in the CNF and would result in the removal of a variety of upland vegetation communities including non-native grassland, coastal sage scrub, chaparral, and coast live oak woodland. In addition, the project will result in limited impacts to jurisdictional areas containing ephemeral stream channels and/or riparian woodland habitat. These directly impacted areas may be occupied by RFSS or may potentially provide suitable habitat in the future, and would be permanently lost.

Temporary impacts would result from the construction of new Project facilities including staging areas, wire pulling sites, and guard areas. These direct impacts would total approximately 48.28 acres on USFS-managed lands and would include all of the vegetation communities listed above with the exception of riparian woodland. Vegetation in these areas will be crushed or removed during the construction phase of the project and restored when project construction is completed. The removal of vegetation communities would be limited to a portion of the total project construction period (e.g., less than two years) and habitat functions would be replaced when the community was fully restored. These direct impact areas may also be occupied by RFSS, and would result in a temporal loss of habitat but would not be permanently destroyed.

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.

Direct impacts to vegetation communities and required mitigation for the Project are summarized in the tables below. Table 6 displays the vegetation community impacts resulting from the Project. Table 7 shows the permanent and temporary impact areas by Project feature type within USFS lands. Table 8 presents the corresponding USFS approved mitigation ratios for vegetation impacts resulting from the Project, and proposed onsite and offsite mitigation for each impact. Onsite mitigation includes restoration/revegetation of native vegetation communities following completion of project construction, and offsite mitigation would include lands that contain in-kind vegetation communities for mitigation, and will be acquired and donated to USFS within the congressional CNF boundary, where possible.

6.2.2 Effects of Alteration of Habitat

Project construction will result in direct impacts that remove vegetation communities permanently, as well as temporary direct impacts where vegetation will be removed during the construction period and then restored. Project construction and O&M activities may also result in short- or long-term alteration of habitat for RFSS within and adjacent to the project impact areas. These effects may be direct including vegetation degradation due to increased erosion and modified surface hydrology in graded and developed Project areas, invasion by non-native and invasive weed species, and/or alteration of vegetation community distribution by modifying wildfire cycles (e.g., managed fire suppression, accidental increases in wildfire).

The direct effects of the construction and O&M activities including regular maintenance of access roads as well as the clearing of vegetation around lattice tower footings may cause increased erosion in some areas. These activities may also result in increased densities of non-native and invasive weed species in the cleared areas including non-native grasses and thistles. New areas of disturbance within previously undisturbed USFS lands may also contribute to the creation of corridors for invasive, non-native weeds to spread into areas of the forest that are located well outside of the immediate project impact areas. Although considered unlikely, transmission lines may also increase the risk of wildfire as fires may be started if lines are damaged by falling trees or low-flying aircraft. Depending on the weather conditions when fires start, fires may range in size from just a few acres to 10,000 acres or larger. Wildfires may kill or injure wildlife species, and they may alter vegetation structure and increase erosion. Indirect effects potentially resulting in habitat alteration may include the disturbance of RFSS wildlife species located outside of the project impact areas from noise and dust created during construction and O&M activities.

Table 6 Impacts to Vegetation Communities within the USFS Lands

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 7
Acreage Summary of Ground Disturbance on USFS Lands

Ground Disturbance	Permanent Impacts	Temporary Impacts	Total Impacts
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
Helicopter 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
Pullsite	0.00	18.36	18.36
Total	**43.96**	**48.28**	**92.24**

Table 8 Impacts to Vegetation Communities and Required Mitigation

Vegetation Communities	PERMANENT			TEMPORARY				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Non-Native Vegetation, Developed Areas, and Disturbed Habitat								
Developed	11.44	0:1	0.00	0.21	0:1	0.00	0.00	0.00
Disturbed Habitat	0.10	0:1	0.00	0.00	0:1	0.00	0.00	0.00
Subtotal	**11.54**		**0.00**	**0.21**		**0.00**	**0.00**	**0.00**
Coastal and Montane Scrub Habitats								
Diegan coastal sage scrub	0.61	2:1	1.22	0.0	1:1+1:1	0.0	0.00	1.22
Diegan coastal sage scrub – Inland form	2.04	2:1	4.08	0.85	1:1+1:1	0.85	0.85	4.93
Subtotal	**2.65**		**5.30**	**0.85**		**0.85**	**0.85**	**6.15**
Grasslands and Meadows								
Non-native grassland	0.25	2:1	0.50	1.20	1:1+1:1	1.20	1.20	1.70
Subtotal	**0.25**		**0.50**	**1.20**		**1.20**	**1.20**	**1.70**
Chaparrals								
Chamise chaparral	7.08	2:1	14.16	7.05	1:1+1:1	7.05	7.05	21.21
Chamise chaparral - burned	1.96	2:1	3.92	3.30	1:1+1:1	3.30	3.30	7.22
Northern mixed chaparral	12.43	2:1	24.86	32.08	1:1+1:1	32.08	32.08	56.94
Northern mixed chaparral - disturbed	0.18	2:1	0.36	0.0	1:1+1:1	0.0	0.00	0.36
Scrub oak chaparral	0.41	2:1	0.82	0.00	1:1+1:1	0.00	0.00	0.82
Southern mixed chaparral	6.94	2:1	13.88	2.50	1:1+1:1	2.50	2.50	16.38
Subtotal	**28.99**		**58.00**	**44.93**		**44.93**	**44.93**	**102.93**
Herbaceous Wetlands, Freshwater, and Streams								
Non-vegetated Channel	0.06	3:1	0.18	0.00	1:1+1:1	0.00	0.00	0.18
Subtotal	**0.06**		**0.18**	**0.00**		**0.00**	**0.00**	**0.18**
Woodlands and Forests								
Coast live oak woodland	0.44	3:1	1.32	1.09	1:1+2:1	1.09	2.18	3.50
Subtotal	**0.44**		**1.32**	**1.09**		**1.09**	**2.18**	**3.50**
Riparian Forests and Woodlands								
Southern coast live oak riparian forest	0.03	3:1	0.09	0.00	1:1+1:1	0.00	0.00	0.09
Subtotal	**0.03**		**0.09**	**0.00**		**0.00**	**0.00**	**0.09**
TOTAL	**43.96**		**65.39**	**48.28**		**48.07**	**49.16**	**114.55**

These conditions are similar to the general effects of disturbance (Hobbs and Huenneke 1992) and to the specific effects observed along utility corridors in eastern California (Lathrop and Archbold 1980). All of these direct and indirect effects may make these habitat areas less suitable, or unsuitable, for occupation by RFSS. Some of these areas may have been suitable for or occupied by RFSS prior to project construction, resulting in a direct loss of suitable habitats for RFSS.

6.2.3 Effects of Mortality or Injury

Construction and O&M activities may result in mortality or injury of any of the RFSS plant and wildlife species. Mortality or injury may result from construction vehicle traffic on new and existing access roads and planned work pads in the USFS, or by heavy equipment or personnel during vegetation clearing around the permanent and temporary impact areas (Forman and Alexander 1998). Birds and bats may also be killed or injured due to electrocution when perching on towers or due to collisions with transmission lines or helicopters. Vehicles traveling on roads are also a potential source of toxic chemicals such as motor oil and engine coolant. If these materials were accidentally spilled in the forest, individual plants or animals could be killed or injured. These effects of mortality or injury to RFSS would be anticipated to be greatest during project construction when equipment and personnel would be most active within the USFS lands, and would diminish as the presence of equipment and personnel were reduced and the long-term O&M activities were initiated.

6.2.4 Project Effects on Plants

The impact analysis for RFSS plant species is based on known occurrence data and the results of focused rare plant surveys conducted along the Project ROW in 2008 and 2009. All areas of the final Project ROW, including associated project features, including the Hermes and La Posta reroutes, were surveyed or assessed for RFSS rare plants and/or potential suitable habitat for RFSS rare plants. Suitable habitat was modeled based on vegetation community affinities, species historic known ranges, and in the cases of edaphic endemics, soil affinities.

Construction of the Project as well as the continued O&M of the transmission lines and associated facilities may result in destruction of some individuals of RFSS plant species or their associated vegetation communities and may result in the destruction of individuals of additional plant species as well. However, based on the relatively small acreage affected by the construction of the transmission lines and facilities forest-wide and the relatively low level of routine maintenance activity, continued operation and maintenance of transmission lines and associated facilities may affect individuals of these species, but the effects on populations is expected to be minimal. Impacts to the individual RFSS plant species are addressed below in Section 6.4.

6.2.5 Project Effects on Wildlife

Construction of the Project as well as the continued O&M of the transmission lines and associated facilities may result in the harassment, injury, or mortality of individuals listed as RFSS wildlife species. In addition, the continued use and maintenance of the transmission line and associated facilities including long-term road maintenance and vegetation clearing activities may result in adverse impacts (e.g., harassment, injury or mortality) to RFSS wildlife species. However, based on the relatively small acreage affected by the construction of the transmission lines and facilities forest-wide and the relatively low level of routine maintenance activity, continued O&M of transmission lines and associated facilities may affect individuals of these species, but the adverse effects on wildlife populations is expected to be minimal. Impacts to the individual RFSS wildlife species are addressed in Section 6.4.

6.3. DIRECT, INDIRECT AND CUMULATIVE EFFECTS ON BIOLOGICAL RESOURCES

This section identifies the direct, indirect, and cumulative effects of project activities for each RFSS. These effects are quantified where information is available and includes the duration and intensity of the effect.

Direct and Indirect Effects

Direct effects to RFSS plant and wildlife species 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 RFSS have been determined by an analysis of the project impact areas relative to the known distribution areas of the RFSS within and outside of the USFS. The permanent or temporary loss of potentially suitable habitat areas for RFSS (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 RFSS plant and wildlife species have been determined through a review of project construction and O&M activities likely to occur on USFS lands, and an analysis of the likely 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 through USFS lands, as well as around wire stringing sites, staging yards, and access roads located outside of the transmission line alignment. The total average width of the area analyzed for indirect effects on USFS lands extends about 1,600 feet (approximately 1/3 mile) centered on and including the 200' to 300' ROW for the transmission line. Access roads located outside of and parallel or perpendicular to the ROW also were analyzed with a 660' buffer to either side of the road up to the forest boundary. The indirect impact analysis area as defined above contains approximately 7,559.29 acres.

Cumulative Effects

For both RFSS plant and wildlife species, the Cumulative Effects Analysis (CEA) updates the analysis conducted in the FEIR/EIS and considers the project's direct and indirect effects when added with the direct and indirect effects resulting from past, present, and reasonably foreseeable projects likely to occur over the next ten years. The present and reasonably foreseeable projects were selected from the following sources that are currently available:

1. List of cumulative projects identified in the 2008 Project ROW 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.

To accurately determine a project's status, 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.). Only

cumulative projects that provided enough information to determine potential environmental effects were considered. As a result, any projects whose applications had been withdrawn or had been idle for one year or more were removed from the analysis as they are no longer considered reasonably foreseeable. Additionally, any projects that are partially or wholly complete (i.e., ground disturbing activities completed) were included in the baseline conditions for the cumulative analysis. The remaining list, shown in Appendix G for RFSS plant species and Appendix H for RFSS wildlife species, includes projects that are presently being planned or constructed, as well as those where the initial scoping process has not yet been completed.

For the 23 RFSS plant species discussed below, the cumulative analysis area considered projects located within five miles of the Project ROW both inside and outside of CNF. This analysis area was selected to provide a reasonable level of confidence that RFSS plant species seed dispersal mechanisms including wind and water transport into or away from the Project ROW were included in the analysis to the extent feasible. Several of the RFSS plant species are known to produce seeds specifically adapted for transport by wind (i.e., Tecate tarplant, delicate clarkia), and many species seeds may be deposited in streams and transported in the water column (during seasonal rains in ephemeral streams) to downstream habitats.

All available environmental documents for current and proposed projects were reviewed for RFSS impact and proposed mitigation information, and a GIS database was created for the cumulative analysis. This database contains RFSS location data from the CNDDB, USFS, and 2008 and 2009 focused RFSS survey information for the Project ROW, and extends through the cumulative buffer area of five miles around the Project ROW in both San Diego and Imperial Counties. Where a project location and an RFSS location overlapped, an impact was assumed to occur that would contribute to cumulative impacts. The analysis only considered the results of the direct and indirect effects of the project and not areas of the ROW where no impacts occurred. The resulting analysis focuses on whether the Project will have a substantial incremental cumulative effect on any of the RFSS evaluated or cause a decline in viability of that species within CNF.

Several Project circumstances required special consideration for the RFSS cumulative effects analysis. Note that 2008 and 2009 were periods of lower than average rainfall, which may have affected the ability to detect ephemeral annual species during the focused rare plant surveys. Therefore, all available habitat areas for vanishing buckwheat, mission blue cup, Hammitt's clay-cress, and southern jewelflower (which are ephemeral annuals) are assumed to be occupied until surveyed in an average rainfall year. In addition, portions of the Project ROW in the Descanso District were rerouted during the summer of 2009 to comply with project mitigation measures including USFS requests. These included the La Posta, Lenac, and Hermes Copper reroutes, all of which were designed after the seasonal rare plant survey window. The rerouted Project ROW areas were assessed for potentially suitable habitat (for each of the 23 RFSS plant species) by RECON in August 2009, and potentially suitable habitat within Project reroute impact areas were quantified for each RFSS plant species. In these reroute areas, where potentially suitable habitat exists the RFSS plant species is assumed to potentially occur, and impacts that may contribute to cumulative effects are also assumed to have potential to occur. Very few cumulative projects affecting the RFSS plant species were identified within the 5 mile buffer CEA area around the Project. These are discussed in each plant section, as relevant.

For the RFSS wildlife species discussed below, the cumulative effects analysis considers the dispersal and home ranges of each wildlife species; thus, the analysis area for each species varies. For example, coastal cactus wren rarely occur beyond about 3 miles (5 kilometers) from sites of residency (Unitt 2004); cumulative projects within 6 miles from the CNF and Project boundaries were therefore included in the cumulative analysis to consider potential extreme dispersal distance. In addition, of the dispersal

and home range distances identified for each species, the greater of the two distances was used as the cumulative project distance for the specific species. For example, bald eagle typically nest within 1 mile of a water source and day activities occur within 0.5 mile of the water source in California, but may be found within 10-12 miles of a winter roost (Polite and Pratt 2008); cumulative projects within 15 miles of the nearest large water bodies near the CNF and Project boundaries were therefore considered. Although herpetofauna (e.g., large-blotched salamander, California legless lizard, San Diego ring-necked snake) typically do not have known home ranges or dispersal distances, limiting factors (e.g., elevation, soil moisture, species natural history) were considered in the cumulative effects analysis.

The cumulative projects considered for both plant and wildlife species are identified in the individual discussions. Appendix H provides a matrix demonstrating which projects were used in the cumulative analysis for each wildlife 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.

6.3.1 Direct, Indirect and Cumulative Effects on Plants

An effects discussion for each of the 23 RFSS plant species is presented below. Each discussion begins by describing whether the species would be directly or indirectly affected by the proposed project. If there are direct and/or indirect effects, a discussion follows which describes the potential effects to known occurrences (based on CNF 2009, CNDDB 2009, SDNHM 2008, and SDG&E 2008 and 2009 databases) from projects within the cumulative study area. If there are no direct impacts, the discussion ends with a description of the species' regional status and risk of extirpation.

6.3.1.1 Dean's Milk-Vetch

As identified in Section 5.1.1, Dean's milk-vetch was not observed within the Descanso District during the focused rare plant surveys in 2008 and 2009. Dean's milk-vetch is known to occur within the southern portion of the Descanso District near the San Diego River, Hauser Creek, and Barrett Lake, as well as in adjacent areas outside the CNF including the communities of Lakeside, El Cajon, and Alpine, and near Barrett Lake and Lake Morena Reservoirs. Dean's milk-vetch occurs in open chaparral, coastal sage scrub, sandy riparian washes, exposed slopes, coast live oak understories, on undisturbed slopes in the shade of low-growing shrubs, in roadcuts, and in grazed areas generally occurring between 243 and 2,178 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 69 and MP 104. Recent and historic records document individual occurrences or several plants at each location; no large populations are known to occur within the distribution area. Based on all available information, the species occurs in or immediately adjacent to the Project ROW at four locations totaling eight individuals, from Hauser Creek (MS-052) and Potrero (MS-061), both outside the CNF and outside of Project direct impact areas. Based on the 2009 habitat assessment, approximately 30.82 acres within the rerouted Project ROW may contain suitable habitat for Dean's milk-vetch.

Direct and Indirect Effects

Although no plants were detected within the Project ROW during focused rare plant surveys, there is some potential for the species to be present within the 30.82 acres of potentially suitable habitat within the rerouted Project ROW, so the Project may result in limited direct or indirect effects within the Descanso District.

Potential direct effects to Dean's milk-vetch from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Dean's milk-vetch from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Dean's milk-vetch discussed above is located outside of Project impact areas. However, this species may be present within the potentially suitable habitat within the rerouted ROW so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Dean's milk-vetch on the CNF is considered to have low to moderate vulnerability (USDA 2005) because the species is either preserved in wilderness areas or may tolerate low levels of disturbance likely to occur in other locations in the CNF. Dean's milk-vetch is one of seven disturbance adapted RFSS for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be created by the project within temporary and permanent impact areas in the Project ROW. Based on available information, none of the cumulative projects considered (Appendix G) within the analysis area would result in potential impacts to the species.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from project construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Dean's milk-vetch.

6.3.1.2 Jacumba Milk-Vetch

As identified in Section 5.1.2, many occurrences of Jacumba milk-vetch were observed in the Descanso District during the 2008 and 2009 rare plant surveys. Jacumba milk-vetch is highly endemic and occurs only within the southern portion of the Descanso District of the CNF near La Posta Truck Trail, Buckman Springs Road, Kitchen Creek Road, Cottonwood Valley, and Cameron Valley. The species also occurs in adjacent areas outside the CNF including McCain Valley, Jacumba, and Live Oak Springs. The species occurs on stony hillsides and gravelly or sandy flats in open chamise chaparral, oak woodlands, valley grasslands, pinyon-juniper woodland, and in grazed willow scrub on decomposed granite soils at elevations between 2,900 and 4,500 feet (USDA Forest Service 1998, CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 40 and MP 67. Recent records from the 2008 and 2009 rare plant surveys contain many small populations (generally under 100 individuals) within the distribution area. The species occurs in or immediately adjacent to the Project ROW at approximately 385 individual locations totaling over 2,848 plants from Jacumba (MS-002, MS-011, MS-012) and McCain Valley (MS-015 through MS-28) outside the CNF, and La Posta (MS-031, MS-038, MS-039), Cameron Corners (MS-043), and Buckman Springs (MS-045, MS-046) inside the CNF but outside of Project direct impact areas. Based on the 2009 habitat assessment, approximately 29.0 acres within the rerouted Project ROW may contain suitable habitat for Jacumba milk-vetch.

Direct and Indirect Effects

Jacumba milk-vetch plants have not been detected within the Project impact areas in the Descanso District, but there is some potential for the species to be present within the 29.0 acres of potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects with the Descanso District. The project would also result in permanent direct effects to approximately 29 plants and temporary direct effects to approximately 958 plants on private lands in McCain Valley, outside but adjacent to the Descanso District.

Potential direct effects to Jacumba milk-vetch from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the Project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Jacumba milk-vetch from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after Project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Jacumba milk-vetch discussed above is located outside of Project impact areas, but this species may be present within the potentially suitable habitat within the rerouted ROW, and the Project will result in direct impacts outside the Descanso District. As a result, the Project may contribute to the cumulative effects on this species.

Occurrences of Jacumba milk-vetch on the CNF are considered stable and of low vulnerability to local extirpation due to their ability to thrive in areas with low levels of ground disturbance (USDA 2005). The Project's contribution to cumulative impacts on Jacumba milk-vetch have been minimized by avoiding Jacumba milk-vetch locations on the CNF during the Project design phase, and limiting the area and duration of effect to the species during the project construction and O&M phases adjacent to the Descanso District. Jacumba milk-vetch is one of seven disturbance adapted RFSS, for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be created by the project within temporary and permanent impact areas in the Project ROW. Of the cumulative projects analyzed (Appendix G) only the SDG&E ECO substation project is expected to affect Jacumba milk-vetch, although the full scope of those potential impacts is not yet known as project designs and evaluation are still ongoing.

Effects to habitat and plants from the Project outside the forest may be adverse, but permanent effects would be limited to approximately one percent of all plants located within and adjacent to the Project ROW, and temporary effects would occur primarily within one construction yard, would be limited in duration, and habitat for the species would be restored after project construction is completed. Although the Project would have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Jacumba milk-vetch.

6.3.1.3 Descanso Milk-Vetch

As identified in Section 5.1.3, Descanso milk-vetch was detected in the Descanso District during the 2008 focused rare plant surveys but not within or adjacent to the Project ROW. Descanso milk-vetch occurs within the Descanso District near Cuyamaca Peak, the San Diego River Valley, Cedar Creek Falls, and the Loveland Reservoir. The species occurs in cismontane chaparral edges at the periphery of meadows (Reiser 2001) and in chaparral openings and cismontane woodlands at elevations between 2,000 and 5,000 feet (CNPS 2001). Suitable habitat for this species occurs within the Project ROW between MP 87 and MP 104. Historic and recent records document small, widely scattered occurrences with generally one plant present at each location within the distribution area. The species does not occur in or immediately adjacent to the Project ROW, and the closest recorded location is approximately 1.4 miles from the Project ROW on El Cajon Mountain. Based on the 2009 habitat assessment, approximately 29.0 acres within the rerouted Project ROW may contain suitable habitat for Descanso milk-vetch.

Direct and Indirect Effects

Although no plants were detected within the Project ROW during focused rare plant surveys, there is some potential for the species to be present within the 29.0 acres of potentially suitable habitat within the rerouted Project ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Descanso milk-vetch from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections is expected to reduce the overall ground disturbance associated with the project within USFS lands and prevent direct effects on Descanso milk-vetch.

Potential indirect effects to Descanso milk-vetch from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Descanso milk-vetch discussed above is located outside of Project impact areas, but this species may be present within the potentially suitable habitat within the rerouted Project ROW, so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Occurrences of Descanso milk-vetch throughout its range including on the CNF are considered threatened due to loss of habitat (USDA 2005). Descanso milk-vetch is one of seven disturbance adapted RFSS, for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be created by the project within temporary and permanent impact areas in the Project ROW. Based on available information none of the cumulative projects considered (Appendix G) within the 5 mile cumulative effects analysis area would result in potential direct or indirect impacts to the species.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect within the Descanso District and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Descanso milk-vetch.

6.3.1.4 Orcutt's Brodiaea

As identified in Section 5.1.4, Orcutt's brodiaea was observed in the Descanso District during the 2008 focused rare plant surveys but not within or adjacent to the Project ROW. Orcutt's brodiaea occurs in various locations throughout the Descanso District and in adjacent areas outside the CNF. The species is associated with drainages and vernally wet areas in needlegrass grasslands, openings in closed-cone coniferous forest, cismontane woodlands, chaparral, and meadow habitats below 5,300 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 61 and MP 118. Recent and historic records contain many locations with one individual, and several small and large populations (20 plants to over 5,000 plants) within the relatively broad distribution area for this species. The Project ROW contains or is immediately adjacent to two occurrences of this species including a large population east of the Loveland Reservoir in Carveacre (MS-075) and a single plant south of San Vicente Reservoir in Lakeside (MS-107). Both of these locations are outside of the Descanso District and Project impact areas. Based on the 2009 habitat assessment, approximately 31.54 acres within the rerouted Project ROW may contain suitable habitat for Orcutt's brodiaea.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the 31.54 acres of potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects within the Descanso District.

Potential direct effects to Orcutt's brodiaea from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the Project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Orcutt's brodiaea from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed

control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Orcutt's brodiaea discussed above is located outside of Project impact areas in the Descanso District, but this species may be present within potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects, and therefore would be expected to contribute to the cumulative effects on this species.

Approximately 38 percent of the occurrences of Orcutt's brodiaea are on privately owned land and 43 percent are on locally protected lands on the CNF, Department of Defense lands, Cuyamaca State Park, The Nature Conservancy (TNC) lands, and local municipalities. Therefore, the species has a low vulnerability for extinction throughout its range (USDA 2005). Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Orcutt's brodiaea.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect within the Descanso District and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have only a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Orcutt's brodiaea.

6.3.1.5 Dunn's Mariposa Lily

As identified in Section 5.1.5, Dunn's mariposa lily was observed in the Descanso District southwest of Barrett Lake during the 2008 and 2009 focused rare plant surveys. Dunn's mariposa lily occurs in the Descanso District from the San Vicente and Loveland Reservoirs east to Barrett Lake and Lake Morena Reservoirs. The species also occurs in adjacent areas outside the Descanso District including Poway, Ramona, El Cajon, Dulzura, and Jamul. Dunn's mariposa lily is associated with gabbro and metavolcanic soils or sandstone, in closed-cone coniferous forest, rocky openings in chaparral, and grassland/chaparral ecotones at elevations of 1,220 to 5,950 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 61 and MP 118. Recent and historic records contain many locations with one individual, and several small and moderate populations (25 plants to 2,000 plants) within the distribution area for this species. A total of four occurrences of this species are located within the Project ROW outside the Descanso District in Jamul (MS-067) totaling over 40 individuals, but all of these occurrences are outside of Project impact areas. Based on the 2009 habitat assessment, approximately 31.46 acres within the rerouted Project ROW may contain suitable habitat for Dunn's mariposa lily.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the 31.46 acres of potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Dunn's mariposa lily from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Dunn's mariposa lily from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Dunn's mariposa lily discussed above is located outside of Project impact areas in the Descanso District, but this species may be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Dunn's mariposa lily receives protection in the CNF through the established management of other Gabbro endemic species. This species is low to moderately vulnerable across its range because of its restricted habitat requirements, limited occurrences, and low population numbers (USDA 2005). Dunn's mariposa lily is one of seven disturbance adapted RFSS, for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be created by the project within temporary and permanent impact areas in the Project ROW. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Dunn's mariposa lily.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Dunn's mariposa lily.

6.3.1.6 Payson's Jewelflower

As identified in Section 5.1.6, many occurrences of Payson's jewelflower were observed in the southeastern portion of the Descanso District during the 2008 focused rare plant surveys, but none were observed during the 2009 rare plant surveys. Payson's jewelflower occurs near Mt. Laguna, Kitchen Creek, and La Posta Creek. The species also occurs in adjacent areas outside the Descanso District including La Posta and McCain Valley. Payson's jewelflower occurs in rocky, granitic and sandy microhabitats within chaparral, sage scrub and juniper woodland communities (Reiser 2001, CNPS 2001), and in streambeds and on steep, rocky slopes (Stephenson and Calcarone 1999), and suitable habitat for this species occurs within the Project ROW between MP 45 and MP 63. Recent and historic records contain many locations with small to moderate populations (20 to 2,000 plants) within the distribution area. The Project ROW contains or is immediately adjacent to approximately 90 occurrences of this species totaling over 14,227 plants. The occurrences are near McCain Valley (MS-014, MS-020, MS-021, MS-023 through MS-027), Thing Valley (MS-032, MS-034 through MS-037), and La Posta Road (MS-039, MS-041, MS-042) within the CNF. Based on the 2009 habitat assessment, none of the rerouted ROW areas contain potentially suitable habitat for Payson's jewelflower.

Direct and Indirect Effects

The Project will result in temporary direct effects to approximately 1,350 Payson's jewelflower plants in the construction yard near Thing Valley (MP 56) in the Descanso District.

Potential direct effects to Payson's jewelflower from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species. Direct effects to those populations located in the temporary impact areas near MP 56 will be minimized by implementing pre-construction mitigation including avoidance (where feasible) and seed collection and replanting after Project construction activities are completed.

Potential indirect effects to Payson's jewelflower from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPsand increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of

applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species. Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Project surveys indicate that approximately 1,350 individuals of Payson's jewelflower will be temporarily affected by Project activities, so the Project will contribute to the cumulative effects on this species. Because Payson's jewelflower is a fire follower, observations are tied to stochastic events and may serve as an underestimate of the potential population size (USDA 2005). The number of Payson's jewelflower affected by the Project is thus a relatively small subset of a potentially larger population throughout the species range and available habitat within the forest. Impacts are anticipated to be limited to the temporal duration of project construction activities, and the habitat for the species will be replaced after Project construction activities are completed.

Regionally, populations of Payson's jewelflower on private lands are threatened by development and non-native species invasions. Based on available information only one project analyzed for the cumulative impacts analysis has potential to result in indirect impacts to Payson's jewelflower; the La Posta Mountain Warfare Training Facility may result in indirect impacts to an undisclosed number of Payson's jewelflower plants, but none are located in direct impact areas of the proposed Project. These impacts are expected to be temporary and indirect due to construction activities, and would not reduce habitat for species. None of the remaining cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Payson's jewelflower.

Effects to habitat and plants from the Project inside the Descanso District would be temporary, occur within one construction yard, be limited in temporal duration, and habitat for the species would be restored after project construction is completed. Although the Project will have a temporary cumulative effect, the overall effects are not expected to cause a decline in the population of Payson's jewelflower.

6.3.1.7 Lakeside Ceanothus

As identified in Section 5.1.7, Lakeside ceanothus was not observed on the Descanso District during the 2008 and 2009 focused rare plant surveys. Lakeside ceanothus occurs in the western portion of the Descanso District on El Cajon Mountain, and in adjacent areas outside the Descanso District including Crest and the foothills of Lakeside. Lakeside ceanothus occurs in chaparral and closed-cone conifer habitats at elevations of 770 to 2,500 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 96 and MP 114. All recent and historic records have locations with one or several individuals, except one record of a small population (50 plants). The Project ROW is within or immediately adjacent to six occurrences of Lakeside ceanothus with approximately 58 individuals including locations south of El Capitan Reservoir (MS-090) outside the CNF, on El Cajon Mountain (MS-096) in the CNF, and at High Meadow Ranch south of San Vicente Reservoir (MS-104) outside the CNF. Based on the 2009 habitat assessment, approximately 28.20 acres within the rerouted Project ROW may contain suitable habitat for Lakeside ceanothus.

Direct and Indirect Effects

The Project will result in permanent direct effects to a total of five Lakeside ceanothus plants on private land (High Meadow Ranch) outside of the Descanso District. Although no plants were detected within the Project ROW on the forest, there is some potential for the species to be present in the potentially suitable habitat within the rerouted ROW, so the Project also may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Lakeside ceanothus from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Lakeside ceanothus from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Lakeside ceanothus has not been recorded in the Project ROW in the Descanso District, but this species may be present within the potentially suitable habitat within the rerouted ROW and the Project will result in permanent direct effects to five plants on private lands outside of the Descanso District. As a result, the Project would contribute to the cumulative effects on this species.

Lakeside ceanothus is considered to have a low vulnerability on USFS lands, with known populations that are currently stable (USDA 2005). Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Lakeside ceanothus.

Although the Project will affect five plants outside the Descanso District, these impacts are not expected to result in a decline of the species or removal of a population of Lakeside ceanothus adjacent to the

Descanso District. Direct or indirect effects to small areas of potentially suitable habitat for this species may result from project construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Lakeside ceanothus.

6.3.1.8 Long-Spined Spineflower

As identified in Section 5.1.8, this species was observed within the Descanso District near Barber Mountain during the 2008 rare plant surveys. Long-spined spineflower occurs west of Barrett Lake on Barber Mountain in the Descanso District, and in adjacent areas outside the Descanso District including the community of Descanso and Corte Madera Valley. Long-spine spineflower occurs in needlegrass grasslands, coastal scrub and chaparral habitats, and at the edges of vernal pools in grasslands and mountain meadows (Reiser 2001, USDA Forest Service 2005). Recent and historic records in the Descanso District contain locations with one individual or small populations (up to 300 plants) within the distribution area. The Project ROW contains or is immediately adjacent to one occurrence of this species with one plant near Barber Mountain (MS-067) within the Descanso District, but this occurrence is outside of Project impact areas. Based on the 2009 habitat assessment, approximately 32.51 acres within the rerouted Project ROW may contain suitable habitat for long-spined spineflower.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects within the Descanso District.

Potential direct effects to Long-spined spineflower from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Long-spined spineflower from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

The long-spined spineflower occurrence on Barber Mountain will not be affected by the Project, but this species may be present within the potentially suitable habitat within the rerouted ROW so the Project may result in limited direct or indirect effects, and therefore would be expected to contribute to the cumulative effects on this species.

Long-spined spineflower on Barber Mountain in the Descanso District may be threatened by OHV use and non-native plant invasion. Threats to long-spined spineflower on private lands include grazing, recreational use, and development (USDA Forest Service 2005). Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of long-spined spineflower.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of long-spined spineflower.

6.3.1.9 Delicate Clarkia

As identified in Section 5.1.9, delicate clarkia was observed in the Descanso District during the 2008 and 2009 focused rare plant surveys, but none of these locations intersect with the project impact areas. Delicate clarkia occurs within the Descanso District near the upper San Diego River, south of Morena Reservoir, at Corte Madera Mountain, El Capitan Reservoir, Featherstone Creek, Lyons Valley, Potrero and Viejas Mountains. Outside the Descanso District, it occurs at several localities near the Project ROW in Campo, Harbison Canyon, Deerhorn Valley, and Alpine. The species is associated with oak woodlands and chaparral communities between 760 and 3,250 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 67 and MP 104. Recent and historic records contain many individuals and small populations within the distribution area with few large populations exceeding 1,000 plants. The Project ROW contains or is immediately adjacent to approximately 37 individual locations of this species with approximately 3,420 plants at locations including Sycamore Canyon east of Miramar (MS-109, MS-110), High Meadow Ranch east to El Capitan Reservoir (MS-094, MS-100, MS-103, MS-104), and south of Japatul Road in Carveacre (MS-075). All but one of these occurrences is located outside of the Project impact areas. Based on the 2009 habitat assessment, approximately 32.82 acres within the rerouted Project ROW may contain suitable habitat for delicate clarkia.

Direct and Indirect Effects

The Barber Mountain occurrence of delicate clarkia, which is based on USFS data, is located within and adjacent to a temporary Project impact area. Each of the other locations discussed above is outside of

project impact areas. The Project will result in direct or indirect effects to one plant at Barber Mountain inside the CNF, but no plants located outside the CNF would be affected. In addition, there is some potential for the species to be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects within the Descanso District.

Potential direct effects to delicate clarkia from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to delicate clarkia from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPsand increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

The delicate clarkia occurrence on Barber Mountain will be temporarily affected by the Project, but this species may be present within the potentially suitable habitat within the rerouted ROW so the Project may result in limited direct or indirect effects, and therefore would be expected to contribute to the cumulative effects on this species.

Populations of delicate clarkia on private lands lack protection and are declining because of increased urban and rural development, and those on the CNF may be threatened by non-native species invasions, facilitated by high fire-return intervals (USDA Forest Service 2005). Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of delicate clarkia.

The Project's contribution to cumulative impacts on delicate clarkia have been minimized by avoiding known locations during the Project design phase, and limiting the area and duration of effect during the project construction phase within and adjacent to the Descanso District. As a result, although the Project

may contribute a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of delicate clarkia.

6.3.1.10 Tecate Tarplant

As identified in Section 5.1.10, new occurrences of Tecate tarplant on the CNF have been documented along the southern boundary of the Descanso District near Hauser Canyon and Big Potrero Truck Trail during the 2008 and 2009 focused rare plant surveys. Tecate tarpant is highly endemic and occurs only within the southern portion of the Descanso District near La Posta Truck Trail, Buckman Springs Road, Kitchen Creek Road, Cottonwood Valley, and Cameron Valley. The species also occurs in adjacent areas outside the CNF including McCain Valley, Jacumba, and Live Oak Springs. Tecate tarplant grows along narrow drainages and sandy washes in chaparral at elevations to 4,000 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 69 and MP 80. Recent and historic records contain many small populations (generally under 100 individuals) within the distribution area. The species occurs in or immediately adjacent to the Project ROW at approximately 116 individual locations totaling over 6,411 individuals from Boulevard (MS-012), McCain Valley (MS-023, MS-024), and Hauser Creek and Potrero (MS-053 through MS-055, MS-057 through MS-059, MS-061). Several of these occurrences inside and outside the Descanso District are located within Project impact areas. Based on the 2009 habitat assessment, none of the rerouted Project ROW contains suitable habitat for Tecate tarplant.

Direct and Indirect Effects

The Project will temporarily affect approximately eight Tecate tarplants along existing access roads in the Descanso District near Potrero on MS-055. The Project will also result in permanent effects to four plants and temporary effects to an additional 35 plants on BLM managed and private lands in the Potrero area on MS-055, MS-057, and MS-058.

Potential direct effects to Tecate tarplant from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Tecate tarplant from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

As noted, the Project will result in direct effects to approximately eight plants inside the Descanso District and 39 plants total outside and adjacent to the Descanso District, and therefore may contribute to the cumulative effects on this species.

Occurrences of Tecate tarplant on the CNF are considered stable and of low vulnerability to local extirpation due to their ability to thrive in areas with low levels of ground disturbance (USDA Forest Service 2005). Throughout its range, Tecate tarplant appears to be stable. However, threats related to grazing and development exist. Additional threats could come from vehicular traffic, but given its common occurrence on roads, disturbance may also be a factor in its persistence. Of the cumulative projects analyzed (Appendix G), only the Tule Wind Energy Project has the potential to affect Tecate tarplant, although the scope of those impacts has not yet been quantified, given that the EIR for that project has not yet been finalized.

Tecate tarplant is one of seven disturbance adapted RFSS, for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be created by the project within temporary and permanent impact areas in the Project ROW. The Project's effects on the Tecate tarplant have been minimized by avoiding known locations during the Project design phase, and limiting the area and duration of effect during the Project construction phase. As a result, although the Project will result in temporary impacts to approximately eight individuals within the Descanso District (out of a population estimated at over 400 on the Descanso District) and impacts (both permanent and temporary) to an additional 39 plants (out of over 6,400 plants mapped along the ROW, or less than 1%), the Project will not result in a decline of Tecate tarplant or otherwise affect its viability in the CNF.

6.3.1.11 Vanishing Buckwheat

As identified in Section 5.1.11, this species was not observed in the Descanso District during the 2008 and 2009 focused rare plant surveys. Vanishing buckwheat historically occurred within the Descanso District of the CNF in Pine Valley. This species occurs in sandy or gravelly flats and slopes in sagebrush, oak woodland, and montane conifer woodlands between 3,600 and 6,900 feet (CNPS 2001), and suitable habitat for vanishing buckwheat occurs within the Project ROW between MP 53 and MP 62. Historic records are few and document single plant locations. The Project ROW is within approximately 0.25 mile of one historic location of this species in Alpine (MS-087). Based on the 2009 habitat assessment, approximately 2.58 acres of the rerouted Project ROW contains suitable habitat for vanishing buckwheat. As a result of potential low detectability during the 2008 and 2009 focused surveys, vanishing buckwheat is assumed to occur in all appropriate habitats (approximately 50 acres) within the Project ROW in the Descanso District.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the rerouted portions of the Project ROW and is assumed to be present in all potentially suitable habitat within the ROW, so the Project may result in limited direct or indirect effects within the Descanso District.

Potential direct effects to vanishing buckwheat from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to vanishing buckwheat from the Project are primarily associated with short-term construction activities and may include increased human disturbance increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

The recorded locations of vanishing buckwheat are located outside of Project impact areas in the Descanso District, but this species is assumed to be present within the potentially suitable habitat within the ROW, so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Potential cumulative threats to vanishing buckwheat include alteration of fire regimes, recreational activity and non-native invasive species. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of vanishing buckwheat.

Given that the distribution of the species is extremely limited, the loss of approximately 52.58 acres of potentially occupied habitat from the Project would represent an adverse effect, albeit a limited one that may not result in actual loss of individual plants. Based on the known species distribution and

abundance data, vanishing buckwheat would likely occur as a few individual plants within this 52.58 acres, if it present at all. Therefore, the likely effects to the species would be minimal. The anticipated direct or indirect effects due to the proposed Project would therefore likely be minimal, as well as the Project's contribution to cumulative effects, so the Project is not expected to cause a decline in the population of vanishing buckwheat.

6.3.1.12 Mission Canyon Bluecup

As identified in Section 5.1.12, Mission Canyon bluecup was not observed in the Descanso District during the 2008 and 2009 focused rare plant surveys. The only known occurrence in the Descanso District (and the CNF) is on Viejas Mountain. Outside the CNF, the species is known to occur in the vicinity of Harbison Canyon, Featherstone Creek, El Cajon Mountain on BLM land, and Silverwood Wildlife Sanctuary. Mission Canyon bluecup grows in open, sandy areas in chaparral at elevations of 1,475 to 2,300 feet (CNPS 2001), and suitable habitat for the species occurs within the Project ROW between MP 97 and MP 110. Recent and historic records are few and document individual plant occurrences only. The Project ROW is not adjacent to and does not contain any documented occurrences of Mission Canyon bluecup; the nearest documented occurrence is approximately 1.75 miles from the Project ROW near San Vicente Reservoir. Based on the 2009 habitat assessment, approximately 28.20 acres of the rerouted Project ROW contains suitable habitat for Mission Canyon bluecup. Additionally, as a result of potential low detectability during the 2008 and 2009 focused surveys, this species is assumed to occur in all appropriate habitats (approximately 40 acres) within the Project ROW in the Descanso District.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the 28.20 acres of potentially suitable habitat within the rerouted ROW, and the species is assumed to be present within approximately 40 acres of the Project ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Mission Canyon bluecup from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and

work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Mission Canyon bluecup from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed

control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have no effect on this species on USFS lands.

Cumulative Effects

The recorded locations of Mission Canyon bluecup are located outside of Project impact areas in the Descanso District, but this species is assumed to be present within the potentially suitable habitat within the ROW, so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Mission Canyon bluecup is threatened by development (CNPS 2008) though it is presumed to be stable in San Diego County. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Mission Canyon bluecup.

Given that the distribution of the species is extremely limited, the loss of approximately 68.20 acres of potentially occupied habitat from the project would represent an adverse effect, albeit a limited one that may not result in actual loss of individual plants. Based on the known distribution and abundance data for Mission Canyon bluecup, the species would likely occur in low density and low population numbers, if present at all, within these potentially suitable Project ROW areas. Therefore, the anticipated direct or indirect effects due to the proposed Project would likely be minimal, as well as the Project's contribution to cumulative effects, so the Project is not expected to cause a decline in the population of Mission Canyon bluecup.

6.3.1.13 Ramona Horkelia

As identified in Section 5.1.13, Ramona horkelia was observed in the Descanso District during the 2008 focused rare plant surveys. Occurrences in the Descanso District near the Project ROW include Viejas Mountain, Boulder Creek and El Cajon Mountain. Additional occurrences outside the CNF and near the Project ROW include McGinty Mountain, Gaskill Peak, Iron Mountain, and Featherstone Creek. Ramona horkelia occurs on clay soils derived from gabbro along vernal streams and disturbed areas in mixed chaparral and cismontane woodlands at elevations of 1,300 to 4,225 feet (CNPS 2001), and suitable habitat for the species occurs within the Project ROW between MP 79 and MP 104. Recent and historic records document many individual plant occurrences, as well as several small (50 to 100 plants) and moderate (500 to 1,000 plants) populations. The Project ROW is adjacent to or contains five occurrences with approximately 30 plants, all of which occur near Lyons Valley (MS-072) in the Descanso District. Each of these occurrences is located outside of Project impact areas. Based on the 2009 habitat assessment, approximately 30.82 acres of the rerouted Project ROW contains suitable habitat for Ramona horkelia.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the rerouted portions of the Project ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Ramona horkelia from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Ramona horkelia from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Ramona horkelia may be present within the potentially suitable habitat within the rerouted ROW so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Regionally, several locations of Ramona horkelia are impacted by recreational use such as mountain climbing and hiking. The majority of the CNF occurrences are along roads. However, Ramona horkelia tolerates fire and moderate soil disturbances and appears to colonize openings and disturbed areas. Ramona horkelia is considered to have low vulnerability on NFS lands and the populations are stable on the CNF. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Ramona horkelia.

Ramona horkelia is one of seven disturbance adapted RFSS, for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be

created by the project within temporary and permanent impact areas in the Project ROW. As noted, however, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect within the Descanso District and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Ramona horkelia.

6.3.1.14 Heart-leaved Pitcher Sage

As identified in Section 5.1.14, this species is not known to occur in the Descanso District, and the one location in San Diego County is from Iron Mountain, outside the Descanso District north of San Vicente Reservoir. Heart-leaved pitcher sage grows in chaparral and woodland habitats (Reiser 2001), and potential habitat for the species is estimated to be present within the Project ROW between MP 79 and MP 104. The Project ROW is not adjacent to and does not contain any occurrences of heart-leaved pitcher sage; the nearest documented occurrence is approximately 3.0 miles from the Project ROW at Iron Mountain. Based on the 2009 habitat assessment, none of the rerouted ROW areas contain potentially suitable habitat for heart-leaved pitcher sage.

Direct and Indirect Effects

Potential direct effects to heart-leaved pitcher sage from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to heart-leaved pitcher sage from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have no effect on this species within the Descanso District.

Cumulative Effects

The Project is not expected to result in direct or indirect impacts to heart-leaved pitcher sage inside or outside of the CNF, and therefore would not contribute to cumulative effects on the species. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of heart-leaved pitcher sage.

Given that there are no anticipated direct or indirect impacts due to the proposed Project, the Project would not contribute to cumulative effects and is not expected to cause a decline in the population of heart-leaved pitcher sage.

6.3.1.15 Laguna Linanthus

As identified in Section 5.1.15, this species is known to occur in the Descanso District of the CNF but was not observed during the focused surveys in 2008 and 2009. Many occurrences of Laguna linanthus are on Laguna Mountain in the Descanso District, with additional locations in the Cuyamaca Mountains, Pine Valley, and Corte Madera Mountain. Recent and historic records document individual plant occurrences, although the species can occur in large populations. Laguna linathus grows in openings in chaparral, lower montane coniferous forest, and pinyon-juniper woodland at elevations of 3,000 to 7,050 feet (CNPS, 2001), and suitable habitat for the species occurs within the Project ROW between MP 53 and MP 56. The Project ROW is not adjacent to and does not contain any occurrences of Laguna linanthus; the nearest documented occurrence is over 4.6 miles from the Project ROW in Descanso. Based on the 2009 habitat assessment, none of the rerouted ROW areas contain potentially suitable habitat for Laguna linanthus.

Direct and Indirect Effects

Potential direct effects to Laguna linanthus from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Laguna linanthus from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have no effect on this species on USFS lands.

Cumulative Effects

The Project is not expected to result in direct or indirect impacts to Laguna linanthus inside or outside of the Descanso District, and therefore would not contribute to cumulative effects on the species.

Cumulatively, there is little risk of extirpation of this species as the majority of the known occurrences are within protected publicly owned lands and no occurrences were recorded within the Project ROW during the focused rare plant surveys. On USFS lands in the CNF, documented impacts to this species include trampling by hikers at occurrences in the Laguna Mountains Recreation Area. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Laguna linanthus.

Laguna linanthus is one of seven disturbance adapted RFSS, for which the Project may result in a beneficial effect within the Descanso District; ground disturbance and openings in chaparral would be created by the project within temporary and permanent impact areas in the Project ROW. Given that there are no anticipated direct or indirect adverse effects expected due to the proposed Project, the Project would not contribute to cumulative effects and is not expected to cause a decline in the population of Laguna linanthus.

6.3.1.16 Felt-Leaved Monardella

As identified in Section 5.1.16, felt-leaved monardella was observed within the Descanso District during the 2008 and 2009 focused rare plant surveys. Approximately 50 percent of the occurrences of felt-leaved monardella occur in CNF with locations at Barber Mountain, east of gaskill Peak, near Lyons Peak, Chiquito Peak, El Cajon Mountain, Poser Mountain, and Viejas Mountain in the Descanso district. The species is also widely distributed outside the CNF including locations from as far west as Otay Mountain and San Vicente Reservoir, and east to Dulzura, Alpine, Barrett Lake, and Tecate. Recent and historic records document many individual plant occurrences, as well as several moderate sized populations with 200 or more plants. Felt-leaved monardella grows in the understory of mixed chaparral, chamise chaparral, and southern oak woodland at elevations between 975 to 5,118 feet (CDFG 2008), and suitable habitat for felt-leaved monardella occurs within the Project ROW between MP 67 and MP 104. The Project ROW is adjacent to or contains 32 occurrences of felt-leaved monardella containing over 1,308 plants including locations west of Barrett Lake (MS-066, MS-067) and Lyons Valley (MS-072) inside the CNF, west of Japatul Valley along Bell Bluff Truck Trail (MS-081) outside the CNF and (MS-082) inside the CNF, and near Alpine (MS-085, MS-087) outside the CNF. All but one of these occurrences is located outside of Project impact areas. Based on the 2009 habitat assessment, none of the rerouted ROW areas contain potentially suitable habitat for felt-leaved monardella.

Direct and Indirect Effects

The Project would not result in direct or indirect effects to felt-leaved monardella within the CNF, however, the felt-leaved monardella occurrence on MS-081 near the disturbance footprint of the

Suncrest Substation, occurs within a Project direct impact area and is adjacent to the Descanso District; approximately 106 felt-leaved monardella plants will be permanently affected at this location.

Potential direct effects to felt-leaved monardella from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to felt-leaved monardella from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

As noted, the Project will result in direct effects to approximately 106 plants adjacent to the Descanso District on private lands and will therefore contribute to the cumulative effects on this species.

Felt-leaved monardella populations both within the CNF and within San Diego County as a whole appear stable and are relatively well protected due to their tendency to occur on peaks and ridgelines. This species is documented to be threatened by OHV activity on Viejas, Poser, and Barber Mountains. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of felt-leaved monardella.

Cumulatively, throughout its range, the risk of extirpation to this species due to Project related activities is minimal as populations are stable and well protected with over 50 percent of the known occurrences located within CNF lands. Direct effects to felt-leaved monardella resulting from the Project on private lands adjacent to the Descanso District may be adverse, but would be limited to approximately eight percent of the plants occurring within or adjacent to the Project ROW. These impacts would be mitigated through translocation of affected plants and/or preservation of additional occurrences in the

Project ROW. As a result, although the Project will contribute to cumulative effects on felt-leaved monardella, it would not cause a decline in the population of felt-leaved monardella.

6.3.1.17 Chaparral Beargrass

As identified in Section 5.1.17, chaparral beargrass was not observed in the Descanso District during the 2008 or 2009 focused rare plant surveys. Chaparral beargrass occurs on Viejas Mountain in the Descanso District, as well as the Cuyamaca Mountains. Outside the Descanso District, the species is primarily known to occur in Ventura, Orange, and Riverside Counties. The species occurs in xeric coastal sage scrub and open chaparral on gabbro and sandstone soils feet (Reiser 2008, CNPS 2008), and suitable habitat for chaparral beargrass occurs within the Project ROW between MP 79 and MP 104. Recent and historic records for San Diego County document several individual plant occurrences, as well one small population (90 plants) at Viejas Mountain. The Project ROW is adjacent to three occurrences of chaparral beargrass containing approximately 92 plants at Viejas Mountain (MS-084 and MS-085) inside the CNF, but each of these occurrences is located outside of Project impact areas. Based on the 2009 habitat assessment, none of the rerouted ROW area contains potentially suitable habitat for chaparral beargrass.

Direct and Indirect Effects

Potential direct effects to chaparral beargrass from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to chaparral beargrass from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have no effect on this species on USFS lands.

Cumulative Effects

The Project is not expected to result in direct or indirect impacts to chaparral beargrass inside or outside the Descanso District, and therefore would not contribute to cumulative effects on this species.

Occurrences of this species on private lands are distributed in areas with high potential for impacts associated with urbanization. Proximity to urban areas and a natural "patchy" distribution may result in comprised habitat quality and reduced population occurrences for this chaparral species in the future (Reiser 1994). However, based on available information none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of chaparral beargrass.

Given that there are no anticipated direct, indirect, or cumulative effects, the Project will not cause a decline in the population of chaparral beargrass.

6.3.1.18 Gander's Ragwort

As identified in Section 5.1.18, Gander's ragwort was documented in the Descanso District during the 2008 and 2009 focused rare plant surveys. Gander's ragwort occurs at Lawson's Peak, Barber Mountain, and El Cajon Mountain in the CNF, and on private and BLM lands outside the CNF. The species occurs primarily in the under-story of chaparral at elevations of 1,300 to 3,900 feet (CNPS 2001), and suitable habitat for Gander's ragwort occurs within the Project ROW between MP 79 and MP 104. Recent and historic records document many individual plant occurrences, as well as several moderate sized populations with 1,000 plants or more. The Project ROW is adjacent to or contains 16 occurrences of Gander's ragwort containing over 2,860 plants including Potrero (MS-061) outside the CNF, and Barber Mountain (MS-066 and MS-067) and Lyons Valley (MS-070 through MS-072) inside the CNF. All of these occurrences are located outside of Project impact areas. Based on the 2009 habitat assessment, approximately 28.20 acres within the rerouted Project ROW may contain suitable habitat for Gander's ragwort.

Direct and Indirect Effects

Although no plants detected within the Project ROW will be directly or indirectly affected, there is some potential for the species to be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Gander's ragwort from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Gander's ragwort from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles,

equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Gander's ragwort discussed above is located outside of Project impact areas in the Descanso District, but this species may be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Cumulatively, some occurrences of Gander's ragwort on USFS lands may be subject to disturbance by OHV use and increased recreation pressures at mountaintops and peaks where plants occur. In addition, road maintenance activities may also threaten existing occurrences. On private lands, habitat loss from development is a threat to some populations of Gander's ragwort. However, based on available information none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Gander's ragwort.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Gander's ragwort.

6.3.1.19 Moreno Currant

As identified in Section 5.1.19, Moreno currant was observed south of the the Descanso District boundary in the vicinity of the project alignment during the 2009 focused rare plant surveys. Moreno currant occurs throughout the Descanso District including Morena Reservoir and Morena Butte, Corte Madera Mountain, Descanso Junction, El Cajon Mountain, and Lawson and Lyons Peaks. Outside the Descanso District the species is also known to occur near Alpine and Dulzura. The species occurs in small riparian pockets of chaparral associated with gabbro soils and large granite boulders (Stephenson and Calcarone 1999), and suitable habitat for Moreno currant occurs within the Project ROW between MP 67 and MP 104. Recent and historic records document individual plant occurrences and small populations with 20 or fewer plants at scattered locales in San Diego County. The Project ROW is adjacent to or contains five occurrences of Moreno currant including Potrero (MS-58) and Barber Mountain (MS-064) outside the CNF, and several occurrences near Lyons Valley (MS-072) in the CNF. However, all of these occurrences are located outside of Project impact areas. Based on the results of

the 2009 habitat assessment, approximately 30.79 acres of the rerouted ROW may contain potentially suitable habitat for Moreno currant.

Direct and Indirect Effects

Although none of the plants detected within the Project ROW will be directly or indirectly affected by the Project, there is some potential for the species to be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects within the Descanso District.

Potential direct effects to Moreno currant from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Moreno currant from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Moreno current discussed above is located outside of Project impact areas in the Descanso District, but this species may be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects, and therefore may contribute to the cumulative effects on this species.

Regionally, Moreno currant is vulnerable to localized extirpations because of naturally small population sizes. Potential threats to populations on CNF land include potential damage near Corral Canyon OHV Area and a popular shooting area at Lawson Peak. However, based on available information none of the

cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Moreno currant.

As noted, the Project may result in direct or indirect effects to small areas of potentially suitable habitat for this species from construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Moreno currant.

6.3.1.20 San Miguel Savory

As identified in Section 5.1.20, San Miguel Savory is not known to occur in the Descanso District of the CNF. San Miguel savory occurs within the CNF outside of the Descanso District, and in locations outside the CNF in San Diego County including San Vicente Reservoir, McGinty, San Miguel, Otay and the Jamul Mountains. The species occurs in areas of chamise chaparral, coastal scrub, oak woodlands, riparian woodlands, and grasslands at elevations of 390 to 3,525 feet (CNPS 2001), and suitable habitat for San Miguel savory occurs within the Project ROW between MP 79 and MP 104. Recent and historic records document individual plant occurrences at very few locations. The Project ROW is not adjacent to and does not contain any occurrences of San Miguel savory, and the nearest known location of the species is approximately 3.2 miles from the Project ROW near San Vicente Reservoir. Based on the 2009 habitat assessment, none of the rerouted ROW areas contain potentially suitable habitat for San Miguel savory.

Direct and Indirect Effects

Potential direct effects to San Miguel savory from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to San Miguel savory from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts

and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have no effect on this species on USFS lands.

Cumulative Effects

The Project is not expected to result in direct or indirect impacts to San Miguel savory inside our outside the Descanso District, and therefore would not contribute to cumulative effects on this species.

San Miguel savory is threatened by residential development, foot traffic, agriculture, recreational activities and by horticultural collecting. However, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of San Miguel savory.

As noted above, the species is not known to occur within the Descanso District of the CNF and, therefore, is highly unlikely to be found within or adjacent to the Project alignment. This determination is supported by lack of observation of this species on USFS lands in the CNF during the 2008 and 2009 focused rare plant surveys. Given that there are no anticipated direct, indirect, or cumulative effects, the Project would not cause a decline in the population of San Miguel savory.

6.3.1.21 Hammitt's Clay-cress

As identified in Section 5.1.21, Hammitt's clay-cress was not observed within the Descanso District during the 2008 or 2009 focused rare plant surveys. Hammitt's clay-cress occurs within the Descanso District of the CNF at Poser and Viejas Mountains in the Cuyamaca Range. The species occurs on saturated clay soils in patches of purple needlegrass grassland surrounded by chamise chaparral (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. Recent records document widely scattered individual plant occurrences at very few locations. The Project ROW is not adjacent to and does not contain any occurrences of Hamitt's clay-cress, and the nearest known location of the species is approximately 0.75 mile from the Project ROW on Viejas Mountain. Based on the results of the 2009 habitat assessment, approximately 31.51 acres of the rerouted ROW may contain potentially suitable habitat for Hammitt's clay cress. As a result of potential low detectability during the 2008 and 2009 focused surveys, this species is assumed to occur in all appropriate habitats (approximately 50 acres) within the Project ROW in the Descanso District.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the rerouted Project ROW and the species is assumed to be present within potentially suitable habitat within the ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Hammitt's clay-cress from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities.

Potential indirect effects to Hammitt's clay cress from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs

and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

The recorded locations of Hammitt's clay-cress are located outside of Project impact areas in the Descanso District, but this species is assumed to be present within the potentially suitable habitat within the ROW, so the Project may result in limited direct or indirect effects, and therefore would be expected to contribute to the cumulative effects on this species.

Cumulatively, occurrences may be threatened at Viejas and Poser mountains because of unauthorized OHV activity, unauthorized cattle grazing, trash dumping, and habitat damage due to noxious weeds. However, based on available information none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Hamitt's clay-cress.

Given the likelihood that the distribution of the species is extremely limited, the loss of approximately 81.51 acres of potentially occupied habitat from the Project would be an adverse effect, but the Project may not result in actual loss of individual plants. Based on the distribution and abundance data for Hamitt's clay cress, the species would likely occur as individual plants at any location within the ROW, if present at all. Therefore, Project effects, if any, would be expected to be limited to one or several plants. Anticipated direct or indirect effects due to the proposed Project are likely be minimal, as is the Project's contribution to cumulative effects, so the Project is not expected to cause a decline in the population of Hamitt's clay-cress.

6.3.1.22 Southern Jewelflower

As identified in Section 5.1.22, southern jewelflower was observed in the Descanso District during the 2008 rare plant surveys. Southern jewelflower occurs within the Descanso District of the CNF at the south end of the Laguna Mountains, and adjacent areas including Descanso, Campo, and Morena Reservoir. The species occurs on rocky soils in chaparral (including high desert transitional chaparral), conifer forest, and pinyon-juniper woodlands (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 53 and MP 69. Recent and historic records are few and document widely scattered individual plant occurences. The Project ROW contains or is directly adjacent to three occurrences of southern jewelflower including locations near Beeler Canyon (MS-115), Wildcat Canyon (MS-104), and Buckman Springs (MS-50), all of which are located outside the CNF and Project impact areas. Based on the results of the 2009 habitat assessment, approximately 30.79 acres of the rerouted ROW may contain potentially suitable habitat for southern jewelflower. As a result of potential low

detectability during the 2008 and 2009 focused surveys, this species is assumed to occur in all appropriate habitats (approximately 40 acres) within the Project ROW in the Descanso District.

Direct and Indirect Effects

Although none of the plants located within the Project ROW will be directly or indirectly affected by the Project, there is some potential for the species to be present within the rerouted Project ROW, and the species is assumed to be present within approximately 40 acres of potentially suitable habitat in the ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to southern jewelflower from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to southern jewelflower from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures the Project is anticipated to have a minimal effect on this species on USFS lands.

Cumulative Effects

The recorded locations of southern jewelflower are located outside of Project impact areas in the Descanso District, but this species is assumed to be present within the potentially suitable habitat within the ROW, so the Project may result in limited direct or indirect effects, and therefore would be expected to contribute to the cumulative effects on this species.

Cumulatively, populations of southern jewelflower on private lands are threatened by development and non-native species invasions. Trampling and non-native weed invasions also may affect occurrences. In addition, fuel break construction and maintenance along ridges and/or roads where these populations occur also may contribute to non-native weed invasions and trampling. Based on available information,

only one project analyzed for the cumulative impacts analysis has potential to result in indirect impacts to southern jewelflower; the La Posta Mountain Warfare Training Facility may result in indirect impacts to an undisclosed number of southern jewelflower plants, but none were located in direct impact areas of the proposed project. These impacts are expected to be temporary and indirect due to construction activities, and would not reduce habitat for species.

Given the likelihood that the distribution of the species is limited, the loss of approximately 70.79 acres of potentially occupied habitat from the Project would result in an adverse effect, however, the Project may not result in the actual loss of individual plants. Based on the distribution and abundance data for southern jewelflower, the species would likely occur as individual plants at any location within the ROW, if present at all. Therefore, any potential effects resulting from the Project would likely occur to one or several individual plants, if any at all. The anticipated direct or indirect effects due to the proposed Project is likely to be minimal, as is the Project's contribution to cumulative effects, so the Project is not expected to cause a decline in the population of southern jewelflower.

6.3.1.23 Parry's Tetracoccus

As identified in Section 5.1.23, Parry's tetracoccus was not located within the Descanso District during the 2008 and 2009 focused rare plant surveys. Parry's tetracoccus is not known to occur within the Descanso District of the CNF, but the Descanso is within the potential distribution area for the species which ranges from coastal San Diego and Orange Counties to the peninsular foothills in San Diego, Orange, and Riverside Counties. The species occurs on dry, stony slopes composed of gabbro-derived soils in chaparral and coastal scrub communities at elevations of 485 to 3,250 feet (CNPS 2001), and suitable habitat for this species occurs within the Project ROW between MP 79 and MP 104. Recent and historic records are few and document widely scattered individual plant occurences. The Project ROW is not adjacent to and does not contain any occurrences of Parry's teracoccus; the nearest recorded location is based on CNDDB data and is approximately 0.7 mile from the ROW in Jacumba. Based on the results of the 2009 habitat assessment, approximately 30.74 acres of the rerouted ROW may contain potentially suitable habitat for Parry's tetracoccus.

Direct and Indirect Effects

Although no plants were detected within the Project ROW, there is some potential for the species to be present within the rerouted portions of the Project ROW, so the Project may result in limited direct or indirect effects with the Descanso District.

Potential direct effects to Parry's tetracoccus from the Project may include occasional mortality of individuals from vehicles or equipment that are accessing project construction areas, direct removal by equipment or personnel clearing vegetation around the facilities, and/or by accidental or unintentional trampling or unearthing during project construction or O&M activities. Implementation of mitigation measures such as the presence of biological monitors during all construction, ground disturbing, and maintenance activities, as well as limiting equipment and personnel access to pre-determined roads and work sites, and use of helicopters to construct towers and perform O&M inspections will greatly reduce the overall ground disturbance associated with the project within USFS lands and risk of unwanted destruction of individuals of this species.

Potential indirect effects to Parry's tetracoccus from the Project are primarily associated with short-term construction activities and may include increased human disturbance and increased dust from heavy equipment operating on dry unimproved roads and helicopter rotor wash at towers and TSAPs and

increased competition from non-native, invasive plant species. The creation of dust from vehicles, equipment, and helicopters during the project construction and O&M activities, especially near roadsides, TSAPs, and other impact areas where soil will be disturbed, may decrease plant vigor (i.e., reduced photosynthesis) and potentially cause mortality of individual plants. Implementation of applicable mitigation measures including the presence of biological monitors during construction and O&M activities, use of water trucks to reduce construction-related dust, and implementation of a weed control plan during and after project construction are anticipated to greatly reduce the potential for indirect impacts to this species.

Loss, reduction, and/or fragmentation of potentially suitable habitat for this species may occur within the proposed Project ROW, but mitigation measures including onsite restoration of temporary impacts and offsite mitigation for permanent vegetation community impacts will be implemented per the Project FEIR/EIS requirements. With the successful implementation of these mitigation measures, the Project is not anticipated to have indirect effects on this species on USFS lands.

Cumulative Effects

Each of the recorded locations of Parry's tetracoccus discussed above is located outside of Project impact areas in the Descanso District, but this species may be present within the potentially suitable habitat within the rerouted ROW, so the Project may result in limited direct or indirect effects, and therefore would be expected to contribute to the cumulative effects on this species.

Cumulatively, the majority (74 percent) of recorded occurrences of Parry's tetracoccus are on privately owned lands, making them vulnerable when their habitat is destroyed through conversion to agricultural or residential uses. Based on available information, none of the cumulative projects considered for this analysis (Appendix G) are known to threaten occurrences of Parry's tetracoccus.

Direct or indirect effects to small areas of potentially suitable habitat for this species may result from project construction and O&M activities. The effects may be adverse, but would be very limited in the total area of effect and may be minimized or avoided through the successful implementation of the proposed mitigation measures. Although the Project would potentially have a small incremental cumulative effect, the overall effects are not expected to cause a decline in the population of Parry's tetracoccus.

6.3.2 Direct, Indirect and Cumulative Effects on Wildlife

Construction, operation and maintenance activities associated with the Project have the potential to directly and indirectly affect wildlife in or near the Project Area. Direct effects to wildlife species that could result from Project activities include disturbance from increased human presence, dust, and noise associated with construction activities (e.g., installation and/or construction of towers through ground equipment and helicopter use, access roads, fly yards, substations, associated infrastructure, and substations). Direct effects to wildlife during the O&M phase could include injury due to collision with towers and transmission lines, noise generated by operation of O&M equipment, and disturbance of wildlife due to the presence of maintenance personnel, equipment, and vehicles.

Indirect effects could include habitat loss, alteration and fragmentation due to construction activities or the introduction of invasive exotic plant species that can replace native plants and habitat. Implementation of the mitigation measures outlined in Appendix F during the pre-construction, construction, and O&M phases of the Project will ensure that the Project's contribution to direct,

indirect, and cumulative effects on RFSS wildlife species is minimal. A discussion of the effects on each of the 15 RFSS wildlife species is presented below and is based upon all available observation and known occurrence data (Appendix D).

6.3.2.1 Large-blotched Salamander

As identified in Section 5.2.1, limited suitable habitat for the large-blotched salamander is widely dispersed throughout the CNF and adjacent to and within the Project ROW and no individuals were observed in the CNF during the 2009 herpetofauna survey/assessment.

Direct and Indirect Effects

Direct effects to the large-blotched salamander include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities near water crossings or moist areas. Implementation of mitigation measures such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect large-blotched salamander through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). These indirect impacts are expected to be minimal because Project activities will occur during the day and the large blotched salamander is a nocturnal species. In addition, all areas of impact will be restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to the large-blotched salamander are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 2 miles of the CNF and the Project ROW, based on the potential dispersal and limited home range of the species of up to 135 feet (USDA Forest Service 2005).

The USFS considers threats to large-blotched salamander in the CNF to include habitat loss as a result of development of private lands. Development in the less accessible mountainous terrain of San Diego County can result in substrate disturbance, which affects large-blotched salamander habitat. Cumulative projects identified that may affect the species include residential subdivisions (e.g., Harbison Canyon and Volli), the Conejos Road Special Use Permit, and the La Posta Mountain Warfare Training Facility. These cumulative projects, both inside and outside the CNF, would be expected to avoid impacts to large-blotched salamanders; potential impacts of these cumulative projects would therefore be limited.

Based on a lack of known occurrences of the large blotched salamander in or near the CNF and Project boundaries identified in the CNDDB (2009), the lack of observations during the 2009 surveys, limited preferred habitats within the Project ROW (e.g., densely vegetated north-facing slopes and woodlands), and that the species occurs at higher elevation sites than the Project ROW, species presence within the Project ROW is anticipated to be infrequent or unlikely. Indirect effects to habitat may be adverse, but the area of effect would be limited based on Project design and minimization measures. Therefore, the proposed Project may contribute some cumulative effect on the large-blotched salamander, given that the Project may have some direct or indirect effects. However, the Project's contribution to cumulative impacts has been minimized by limiting the area and duration of construction and O&M activities to minimize human disturbance. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.2 California Legless Lizard

As identified in Section 5.2.2, suitable habitat is present within the Project ROW and one individual was observed in the La Posta Valley portion of the CNF south of the Project ROW between MP 60 and MP 61 during monitoring activities for the Project.

Direct and Indirect Effects

Direct effects to the California legless lizard include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities. Implementation of mitigation measures such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect California legless lizard through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). All areas of impact will be restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to California legless lizard are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 2 miles of CNF and the Project ROW, as the species appears to have high site fidelity of up to 33 feet, but also is known to wander long distances (USDA Forest Service, 2006). A full list of cumulative projects considered with potential to impact the California legless lizard is included as Appendix H.

The USFS considers threats to California legless lizard to include off-road vehicle use and factors that affect soil moisture, such as wildfire and the introduction of nonnative undesirable plants (USDA Forest

Service, 2006). Cumulative projects identified include some residential subdivisions (e.g., Harbison Canyon and Volli), the Conejos Road Special Use Permit, and a military facility at the La Posta Mountain Warfare Training Facility. These projects, both inside and outside the CNF, would be expected to avoid impacts to California legless lizard; therefore, potential impacts of these cumulative projects would be limited.

Based on the one California legless lizard observation during the 2009 surveys, the two occurrences identified in the CNDDB (2009) in or near the CNF and the Project ROW, the fact that soil moisture may limit these lizards within the extent of their range, and given that the species was thought to be extirpated from approximately 20 percent of its known historical range, species presence within the Project ROW is anticipated to be infrequent or unlikely. Regardless, any adverse impacts from the Project will be minimized or avoided through the use of mitigation measures. Given that the Project may result in some direct or indirect effects to California legless lizard, the Project may contribute to cumulative effects on the species. The Project's contribution to cumulative impacts has been minimized, however, by limiting the area and duration of construction and O&M activities to minimize human disturbance. Based on the above assessment, the Project is not expected 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.

6.3.2.3 Coastal Rosy Boa

As identified in Section 5.2.3, suitable habitat for the coastal rosy boa is present throughout the majority of the CNF, including adjacent to and within Project ROW, and individuals were observed within and outside of the CNF during 2009 surveys and monitoring activities for the Project.

Direct and Indirect Effects

Direct effects to the coastal rosy boa include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities. Implementation of mitigation measures such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect coastal rosy boa through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). These indirect impacts are expected to be minimal because Project activities will occur during the day and the coastal rosy boa is chiefly a nocturnal species. In addition, all areas of impact will be restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to coastal rosy boa are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 2 miles of the CNF and the Project ROW, based on the potential dispersal and home range of this species (USDA Forest Service 2005). A full list of cumulative projects considered with potential to impact the coastal rosy boa is included as Appendix H.

The USFS considers threats to coastal rosy boa to include poaching, habitat loss, increased fire frequency, and urban light pollution (USDA Forest Service 2005). The cumulative projects considered for the coastal rosy boa would mainly involve the development of the project sites. Habitat within these areas would either be lost to development or reduced in quality because of the addition of non-native vegetation or hardscaping, addition of domestic animals (i.e., dogs and cats) or other animals associated with human development that may prey on or harass the rosy boa. Habitat also may become fragmented through impediments, such as structural barriers. Cumulative projects identified include residential and local improvements projects, Harbison Canyon and Volli, Conejos Road Special Use Permit, and a military training facility at the La Posta Mountain Warfare Training Facility. These cumulative projects, both inside and outside the CNF, would be expected to avoid impacts to coastal rosy boas; therefore, potential impacts of these cumulative projects would be limited.

Cumulative projects that may have a positive effect on the coastal rosy boa include fuel modification projects, as frequent fires and conversion of coastal sage scrub and chaparral to grass can negatively impact the suitable habitat for the species (USDA Forest Service 2005); however, no fuel modification cumulative projects were identified within 2 miles of the CNF and the Project ROW.

Given that the Project may result in some direct or indirect impacts to the coastal rosy boa, the Project may contribute to cumulative effects on the species. The Project's contribution to cumulative impacts has been minimized, however, by limiting the area and duration of construction and O&M activities to minimize human disturbance. Based on the above assessment, the Project is not expected to result in a substantial incremental cumulative effect on the coastal rosy boa, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.4 Southwestern Pond Turtle

As identified in Section 5.2.4, although the Project ROW is outside of known suitable habitat and no turtles were observed during 2009 surveys, turtle movements from adjacent suitable habitat across the Project route may occur.

Direct and Indirect Effects

Direct effects to the southwestern pond turtle include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities near water crossings. Implementation of mitigation measures such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect southern pond turtle through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Potential Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). All areas of impact will be restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative effects to the southwestern pond turtle are considered over a reasonably foreseeable timeframe of ten years. Southwestern pond turtles are capable of traveling long distances of at least 1 mile to find water, but usually have a restricted home range. The projects considered in this cumulative analysis occur within 5 miles of the CNF and the Project ROW, based on the potential long-distance dispersal and home range of the southwestern pond turtle (USDA Forest Service 2005). A full list of cumulative projects considered with potential to impact the southwestern pond turtle is included as Appendix H.

Cumulative Effects

The USFS considers threats to southwestern pond turtle in the CNF to include loss of habitat associated with agricultural activities, urbanization, and water diversion projects. Other threats include introduced species, collecting, and mortality from ingestion of baited hooks. Cumulative projects identified include local improvement projects, residential subdivisions, vegetation management projects, and testing and analysis projects. These include Old Highway 80 and Pine Creek Road Intersection Improvements, the Caltrans Maintenance Building Project, Temporary Wind Measurement Testing, the Sweetwater and Viejas Creek Fuels Treatment Project, the La Posta Mountain Warfare Training Facility, and the expansion of the existing Golden Acorn Casino and Travel Center. These projects, both inside and outside the CNF, would be expected to avoid impacts to southwestern pond turtle; therefore, potential impacts of these cumulative projects would be limited.

Although suitable habitat exists on and adjacent to the CNF in the form of several stock ponds and the Sweetwater River, presence within the Project ROW is expected to be unlikely or infrequent based on recent survey results. Additionally, impacts of the cumulative projects would be expected to be limited to the immediate area of that individual project. While indirect effects to habitat may be adverse and may therefore contribute to cumulative effects, the area of effect would be limited based on Project design and minimization measures. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.5 San Diego Ring-necked Snake

As discussed in Section 5.2.5, habitat for the San Diego ring-necked snake likely is present and widely dispersed throughout the CNF, adjacent to and within the Project ROW; however, no observations of San Diego ring-necked snake occurred within the Project ROW during the 2009 surveys. Based on the identification of only three individuals by CNDDB (2009), the lack of observations of San Diego ring-necked snake within the Project ROW during the 2009 surveys and the lack of USFS records near the Project ROW, species presence within the Project ROW is anticipated to be infrequent or unlikely.

Direct and Indirect Effects

Direct effects to the San Diego ring-necked snake include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities. Implementation of mitigation measures, such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect San Diego ring-necked through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). These indirect impacts are expected to be minimal because the San Diego ring-necked is usually found under cover and is active at dusk and night during warmer periods. In addition, all areas of impact will be avoided, restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to San Diego ring-necked snake are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 2 miles of the CNF and the Project ROW, based on the potential dispersal and home range of the ring-necked snake, which is thought to be relatively small (USDA Forest Service 2005). A full list of cumulative projects considered with potential to impact the San Diego ring-necked snake is included as Appendix H.

The USFS considers threats to San Diego ring-necked snake habitat to include development of foothill and mountain regions, increased recreational use of National Forest System lands, road construction, and other activities that degrade suitable habitat in the CNF, which create fragmentation of habitat and fragmentation of populations of the species (USDA Forest Service 2006). Cumulative projects identified include residential subdivisions (Harbison Canyon and Volli), the Conejos Road Special Use Permit, and a military facility at the La Posta Mountain Warfare Training Facility. These projects, both inside and outside the CNF, would be expected to avoid impacts to San Diego ring-necked snake; therefore, potential impacts of these cumulative projects would be limited.

While some indirect Project effects to habitat may be adverse, the Project's contribution to cumulative impacts has been minimized by limiting the area and duration of construction and O&M activities to minimize human disturbance. The Project is not expected to cause any substantial incremental effect on the San Diego ring-necked snake and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.6 San Diego Mountain Kingsnake

As identified in Section 5.2.6, limited suitable habitat for the San Diego mountain kingsnake is present and widely dispersed throughout the CNF, adjacent to and within the Project ROW; however no,

observations of San Diego mountain kingsnake occurred within the Project ROW during the 2009 surveys.

Direct and Indirect Effects

Direct effects to the San Diego mountain kingsnake include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities. Implementation of mitigation measures, such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters, will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect San Diego mountain kingsnake through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). All areas of impact will be avoided, restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to San Diego mountain kingsnake are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 5 miles of the Project, based on the expected potential dispersal and home range of the San Diego mountain kingsnake (estimated due to a lack of available information for this species). While the species tends to exhibit site tenacity (USDA Forest Service 2005), cumulative projects within 5 miles of the CNF and the Project ROW were included in the analysis to provide a conservative estimate of dispersal. A full list of cumulative projects considered with potential to impact the San Diego mountain kingsnake is included as Appendix H.

Within the CNF along the Project ROW, limited suitable riparian habitats exist for this species. The USFS considers poaching by collectors and destruction of microhabitat by poachers to be the biggest threat to the San Diego mountain kingsnake in the CNF. Cumulative projects identified include the Old Highway 80 & Pine Creek Road Intersection Improvements, residential subdivisions, local improvement projects, the La Posta Mountain Warfare Training Facility, and the expansion of the existing Golden Acorn Casino and Travel Center. The majority of the residential projects involve individual improvements and occur within already developed areas. Cumulative projects, both inside and outside the CNF, would be expected to avoid impacts to San Diego mountain kingsnakes; therefore, potential impacts of these cumulative projects would be limited.

The Project's indirect effects to habitat may be adverse, and thus the Project may contribute to cumulative effects, but the area of effect would be limited based on available habitat, Project design, and minimization measures. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect on the San Diego mountain kingsnake, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.7 San Diego Horned Lizard

As identified in Section 5.2.7, habitat for the San Diego horned lizard is present throughout the upland areas of the CNF including areas adjacent to and within the Project ROW, and San Diego horned lizards have been observed within and adjacent to the Project ROW during the 2009 Project surveys and monitoring efforts.

Direct and Indirect Effects

Direct effects to the San Diego horned lizard include being run over by vehicles or equipment accessing Project sites, being killed or injured by equipment, and/or by accidentally trampling them during Project construction activities. Implementation of mitigation measures such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters will greatly reduce the risk of injury or fatality to individuals of this species.

Indirect effects to the San Diego horned lizard include the loss or fragmentation of habitat and the progressive elimination of its food base by exotic ant species that can invade upland habitats because of development. Argentine ants build nests in disturbed soils (such as around building foundations, roads, and landfills) and expand into adjacent areas, eliminating native ant colonies (Ward 1987, Suarez *et al*. 2000). Horned lizards are particularly vulnerable to the effects of an Argentine ant invasion as their range is declining and they have a specialist diet consisting of native ant species.

The likelihood of attracting a population of Argentine ants is low due to the minimal permanent impacts and development for this Project as compared to large development projects (e.g., housing developments, roadways). Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect San Diego horned lizard through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). All areas of impact will be restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to San Diego horned lizard are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 2 miles of CNF and the Project ROW, based on the fact that horned lizards utilize limited home ranges that overlap between individuals (USDA Forest Service 2005). A full list of cumulative projects considered with potential to impact the San Diego horned lizard is included as Appendix H.

The USFS considers threats to San Diego horned lizard habitat to include alteration by development, agriculture, off-road vehicle use, or flood control structures, which create fragmentation of habitat, fragmentation of populations of the species, and added stress to populations from a number of other factors, including fire, grazing, off-road vehicles, and domestics cats (USDA Forest Service 2005). Cumulative projects identified within the CNF that potentially may impact the species include residential subdivisions (such as Harbison Canyon and Volli), and the Conejos Road Special Use Permit. Cumulative

projects identified outside the CNF include residential and local improvement projects, as well as a military facility at the La Posta Mountain Warfare Training Facility. The majority of residential projects involves individual improvements and occurs within already developed areas. These projects both inside and outside the CNF would be expected to avoid impacts to San Diego horned lizard; potential impacts of these cumulative projects would therefore be limited.

The Project's contribution to cumulative impacts has been minimized by limiting the area and duration of construction and O&M activities to minimize human disturbance. Given the above assessment, the Project is not expected to have a substantial incremental cumulative effect on the San Diego horned lizard, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.8 Two-striped Garter Snake

As identified in Section 5.2.8, the Project ROW is located within the same watersheds as potential and occupied habitat, and three observations of the two-striped garter snake occurred in 2009 within the Project ROW.

Direct and Indirect Effects

Direct effects to the two-striped garter snake include being run over by vehicles or equipment accessing the Project ROW, being killed or injured by equipment, and/or by accidentally trampling or unearthing them during Project construction activities near water crossings. Implementation of mitigation measures, such as the use of a biological monitor during all construction activities, ground disturbing activities, and maintenance activities, as well as limiting access to pre-determined access roads, public roads, and helicopters, will reduce the risk of injury or fatality to individuals of this species.

Indirect effects may include loss or fragmentation of habitat from construction and O&M activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect two-striped garter snake through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters may decrease direct impacts, but would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). These indirect impacts are expected to be minimal because the two-striped garter snake is highly aquatic and is rarely seen far from water and Project activities avoid or minimize disturbance to these areas. In addition, all areas of impact will be restored or mitigated and, therefore, would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to two-striped garter snake are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 2 miles of CNF and the Project ROW within areas that potentially may provide habitat, based on a potential dispersal and home range of no more than 2.5 acres (USDA Forest Service 2005). A full list of cumulative projects considered with potential to impact the two-striped garter snake is included as Appendix H.

The USFS considers threats to two-striped garter snake to include increases in recreational use, habitat conversion and degradation resulting from urbanization, construction of reservoirs, and cement-lining of stream channels (USDA Forest Service 2005). Cumulative projects identified for the two-striped garter snake include residential subdivisions and local improvement projects, including Volli, Chocolate Mountain, and Viejas Hills Estates. Cumulative projects identified outside the CNF include a military training facility at the La Posta Mountain Warfare Training Facility. These cumulative projects have the potential to contribute to habitat degradation that could affect the quality and quantity of two-striped garter snake habitat. These types of projects and the proposed Project would be expected to avoid or temporarily affect the streams and rivers where two-striped garter snakes would be found, however, and any impacts of the cumulative projects would be expected to be limited to the immediate area of that individual project.

The Project's contribution to cumulative impacts has been minimized by limiting the area and duration of construction and O&M activities to minimize human disturbance. The implementation of mitigation measures and the use of helicopters also would reduce the potential direct and indirect Project impacts to the snake. Given the above assessment, the Project is not expected to have a substantial incremental cumulative effect on the two-striped garter snake, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.9 Coastal (San Diego) Cactus Wren

As identified in Section 5.2.9, habitat for the coastal cactus wren is not present in the portions of the CNF where the Project is proposed and coastal cactus wren currently is not known to occur on the CNF.

Direct and Indirect Effects

The coastal cactus wren is not likely to occur within the Project ROW on the CNF, and would not likely be affected during implementation of the proposed Project activities. There would be no direct or indirect effects to the coastal cactus wren on the CNF.

Cumulative Effects

Cumulative effects to coastal cactus wren are considered over a reasonably foreseeable timeframe of ten years. Coastal cactus wrens occur at elevations below 1,500 feet and are closely associated with coastal sage scrub vegetation that contains patches of cholla or prickly pear cactus. They do not migrate and rarely move more than 6 miles.

Because of their limited home range, cumulative projects for coastal cactus wrens were considered within 6 miles of the CNF and the Project ROW (USDA Forest Service 2005). A full list of cumulative projects considered with potential to impact the coastal cactus wren is included as Appendix H. Coastal cactus wrens are vulnerable to wildland fire, grazing, clearing for agriculture, and fragmentation and loss of habitat due to suburban industrial and housing developments.

There are no known locations of coastal cactus wren on the CNF and no coastal cactus wrens were observed during the 2009 surveys. Based on a lack of suitable habitat and lack of occurrences of coastal cactus wren along the Project ROW within the CNF, presence of cactus wren in this area would be unlikely. Because there are no anticipated direct or indirect effects to the coastal cactus wren, there are no anticipated cumulative effects.

6.3.2.10 Bald Eagle

As identified in Section 5.2.10, while bald eagles are known to occur in the Project vicinity (K. Winter pers. comm.) and suitable nesting habitat exists within the CNF directly adjacent to the Project ROW, this species was not detected during Project-related surveys in 2009 and is not known to nest within the Project ROW.

Direct and Indirect Effects

No direct effects to bald eagles (nesting or wintering) are anticipated as a result of Project activities involving conventional construction methods (e.g., graders, boom cranes, cement trucks, crew trucks) or helicopter. Project impacts are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts), and implementation of all applicable biological mitigation measures would seek to avoid any direct impacts due to construction.

During the O&M phase, collisions with transmission line structures, including lines, is possible; however, the Project components have been designed to incorporate measures to increase visibility of lines in an effort to reduce the likelihood of collisions. Regarding the potential for electrocution due to contact with Project transmission lines, electrocution in raptors occurs when an electric circuit is completed by two points of contact of flesh with energized parts (e.g., wrist-to-wrist contact with separated conductors). The Project components have been designed in consideration of avian protection, with the 230 kV and 500 kV conductors spaced wider than the wing span of a bald eagle (i.e., greater than 96 inches, more than the recommended wrist-to-wrist distance of 60 inches), which avoids the potential for an electrical connection to occur. Thus, electrocution is not expected to occur. In an effort reduce the risk of injury or fatality to individual bald eagles, 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 (Appendix F).

There is a potential for indirect effects to wintering bald eagles from construction and O&M activities (both conventional and helicopter). Indirect effects may include increased numbers of structures in foraging habitat and noise resulting from construction and O&M equipment and activities. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect wintering bald eagle through increased human disturbance and noise in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters would be expected to have similar indirect effects as conventional methods, with the addition of wind due to helicopters landing and taking off at TSAPs. These indirect impacts are expected to be minimal because the wintering bald eagles are opportunistic and would be expected to forage in other nearby suitable areas.

Cumulative Effects

Cumulative effects to bald eagle are considered over a reasonably foreseeable timeframe of ten years. The projects reasonably considered in the cumulative analysis occur within 15 miles of large water bodies near the Project ROW within and outside of the CNF, to account for the known dispersal distance of the species in San Diego County (USDA Forest Service 2005). The full list of cumulative projects considered with potential to impact the bald eagle is included as Appendix H.

Cumulative projects identified in or near both the CNF and the Project ROW include residential, local improvement, research, and alternative energy projects. Residential projects involve mainly individual improvements and occur within already developed areas. Local improvement projects include road improvements at Old Highway 80 and Pine Creek Road. Research projects include the gold spotted oak borer study and Laguna and Laguna Meadow allotments range analysis. Although these residential, local improvement, and research projects occur within 15 miles of a large water body in the Project area, these cumulative projects are not anticipated to directly impact the bald eagle; these projects would not contribute to adverse cumulative effects. Bald eagles would be expected to fly over the project areas at altitude, moving between nest(s) and foraging area(s). None of the projects will construct tall buildings or other large stationary objects that may present a potential flight hazard to the bald eagle, so direct effects and therefore a contribution to cumulative effects would not be anticipated to occur. Cumulative projects that may introduce new structures that pose a collision or electrocution risk to bald eagle include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, and ENPEX Power Plant. These projects potentially may contribute to adverse cumulative effects on wintering bald eagle if impacts cannot be avoided or minimized by the individual projects.

Given that the Project may result in some direct or indirect effects to bald eagle, the Project may contribute to cumulative effects on the species. The Project's contribution to cumulative impacts has been minimized, however, by designing the Project to avoid the potential for bald eagle electrocution and limiting the area and duration of construction and O&M activities to minimize human disturbance. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect, and the overall effects are not expected to cause a decline in the population of this species.

6.3.2.11 California Spotted Owl

As identified in Section 5.2.11, suitable habitat was observed for the species within the Project ROW between MP 80 and MP 84; however, this species was not detected during the 2009 surveys.

Direct and Indirect Effects

The California spotted owl is not expected to nest within or adjacent to the Project ROW. There is a low potential that California spotted owl would be found foraging along the Project ROW. No direct effects to California spotted owl are anticipated as a result of Project activities involving conventional construction methods (e.g., graders, boom cranes, cement trucks, crew trucks). During the O&M phase, there is a potential for collisions with structures and transmission lines, and potential for electrocution due to contact with transmission lines; although electrocution would be unlikely due to the Project design and the lack of known occurrences and observations within the CNF along the Project ROW. The Project components have been designed in consideration of avian protection, with the 230 kV and 500 kV conductors spaced wider than the wing span of a spotted owl, which avoids the potential for an electrical connection to occur. In an effort to reduce the risk of 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 (Appendix F).

Helicopter use for construction or O&M activities would not be expected to injure or kill California spotted owl due to the limited duration and use of helicopters within the Project ROW during daylight hours when the owl's activity level is low. Project activities are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). However, there is potential for direct impacts if a transient California spotted owl were to pass through the Project ROW during construction or O&M activities. Implementation of all applicable biological mitigation measures would successfully minimize these impacts.

While spotted owl presence in the vicinity of the Project ROW is transitory in nature, there is a potential for indirect effects, including potential disturbance through construction activities and construction noise. Indirect effects would be unlikely due to the lack of known occurrences and observations within the CNF along the Project ROW. In order to greatly reduce the risk of injury or fatality to individual spotted owls, 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 power transmission facilities according to the 2006 APLIC Guidelines to conform to the latest practices to protect birds from electrocution and collision (Appendix F). Other indirect effects could include loss or fragmentation of habitat from construction and O&M activities. With the successful implementation of mitigation measures, the Project would not be expected to have any overall indirect effect on the species.

Cumulative Effects

Cumulative effects to California spotted owl are considered over a reasonably foreseeable timeframe of ten years. 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 considered with potential to impact the California spotted owl is included as Appendix H.

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 ROW are mainly residential and local improvements projects. Cumulative projects that may affect California spotted owl, if owls were to occur in the cumulative project area, include the Conejos Road Special Use Permit, Old Highway 80 and Pine Creek Road Intersection Improvements, Sweetwater and Viejas Creek Fuels Treatment Project. These cumulative projects may decrease suitable habitat for the species or increase the noise and human disturbance.

Given that there may be some direct or indirect effects from the Project, the Project may contribute to the cumulative effects on the California spotted owl. However, based on all available distribution data the species is unlikely to be found in or adjacent to the Project ROW, the Project is not expected to have a substantial incremental cumulative effect, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.12 Pallid Bat

As identified in Section 5.2.12, although suitable roosting habitats exist on the CNF, no roosts have been identified for this species to date on the CNF; however, pallid bats were detected foraging during 2009 surveys.

Direct and Indirect Effects

Given the fact that pallid bats sometimes fly at canopy level and may not always be actively echo-locating while foraging, potential direct effects include a moderate potential for collisions with structures and transmission lines (Stokes pers. comm., Davenport pers. comm.). Implementation of mitigation measures, such as the installation of spherical marker balls at strategic locations on powerlines to increase their acoustic signature for echo-locating bats, may reduce the risk of bat collisions with wires. Acoustic deterrents may also be installed on the towers to reduce the potential for collision (Stokes pers. comm.).

Indirect effects could include loss or fragmentation of foraging or roosting habitat from construction and O&M activities; roost site disturbance may lead to abandonment of roosts in some bat species. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect pallid bat through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project activities are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). Indirect effects also may occur if humans approach an active nursery colony, if entrances to nursery colony sites become blocked, if construction involves blasting or drilling that causes substantial vibration of the earth/rock surrounding an active nursery colony, or if a structure such as a bridge is disturbed by construction. Implementation of applicable biological mitigation measures, such as surveying for bat colonies, prohibiting approach and entrance to an active nursery colony site, and minimization of substantial vibration, would minimize these indirect impacts.

Cumulative Effects

Cumulative effects to pallid bats are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 10 miles of the CNF and Project boundaries, based on the fact that pallid bats are known to commute up to 2.5 miles (USDA Forest Service 2005), but also may travel over 7 miles (Stokes pers. comm.). The full list of cumulative projects considered with potential to impact the pallid bat is included as Appendix H. Because of its wide distribution, the pallid bat has the potential to occur near all of these projects.

The USFS considers the greatest threat to pallid bats in the CNF to be loss or disturbance of roost sites. Low reproductive potential, high longevity and high roost fidelity make populations highly sensitive to roost threats, which could possibly lead to local extirpation. Although no roosting sites have been identified on the CNF and the Project would not directly eliminate roosting sites, construction activities potentially could disturb roosts if they become established and, in a worst case, lead to abandonment of a roost. Cumulative projects identified outside the CNF in or near both the CNF and the Project ROW include residential and local improvement projects. Cumulative projects identified within the CNF in or near the Project ROW include mainly residential, local improvement, and research projects. Cumulative

projects within the CNF that potentially could directly eliminate roost sites include the Descanso Ranger District Mine Safety Closure Project and vegetation removal projects that would remove mature trees that could provide roosting habitat. Like the Project, all of the cumulative projects that involve construction near trees, canyons, bridges, or abandoned structures have some potential to indirectly affect pallid bats by disturbance to roosting habitat. As described above, implementation of applicable biological mitigation measures would minimize impacts of the Project on pallid bat roosting sites and, thus, the Project is not expected to have a substantial incremental cumulative effect on pallid bat roosting sites.

Although the Project has little potential to contribute to cumulative impacts on pallid bat roosting sites, the Project could contribute to cumulative effects on foraging pallid bats, which have been observed in the Project vicinity. As described above, the Project has a moderate potential to have a direct impact on foraging pallid bats by collision with structures and transmission lines. Cumulative projects that may construct new structures that pose a collision or electrocution risk to pallid bats include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, the CAISO wind power plants, and ENPEX Power Plant. These cumulative projects potentially may contribute to adverse cumulative effects on pallid bats if impacts cannot be avoided or minimized by the individual projects.

Based on the types of cumulative projects in and near the CNF along the Project ROW, lack of roosts along the Project ROW in the CNF, and the limited time frame of Project activities, cumulative impacts may potentially occur to only foraging bats that are in the Project ROW during Project activities. Given the nature of Project activities and with the proposed mitigation measures, however, the Project is not expected to have a substantial incremental cumulative effect on the pallid bat, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.13 Townsend's Big-eared Bat

As identified in Section 5.2.13, although suitable roosting habitats exist on the CNF, no roosts have been identified for this species to date on the CNF; however, Townsend's big-eared bats were detected foraging during 2009 surveys.

Direct and Indirect Effects

Based on the fact that Townsend's big-eared bat usually flies at low levels, appears to have keen eyesight and echolocation, and is highly maneuverable, potential direct effects during continued operations and maintenance of the Project include low potential for collisions of foraging and/or migrating individuals with structures and transmission lines (Stokes pers. comm., Davenport pers. comm.). Implementation of mitigation measures, such as the installation of spherical marker balls at strategic locations on powerlines to increase their acoustic signature for echo-locating bats may reduce the risk of bat collisions with wires. Acoustic deterrents may also be installed on the towers to reduce the potential for collision (Stokes pers. comm.).

Indirect effects could include loss or fragmentation of foraging or roosting habitat from construction and O&M activities; roost site disturbance may lead to abandonment of roosts in some bat species. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect Townsend's big-eared bat through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters would be expected to have similar indirect effects as conventional methods, with the

addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project activities are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). Indirect effects also may occur if humans approach an active nursery colony, if entrances to nursery colony sites become blocked, if construction involves blasting or drilling that causes substantial vibration of the earth/rock surrounding an active nursery colony, or if a structure such as a bridge is disturbed by construction. Implementation of applicable biological mitigation measures, such as surveying for bat colonies, prohibiting approach and entrance to an active nursery colony site, and minimization of substantial vibration, would minimize these indirect impacts.

Cumulative Effects

Cumulative effects to Townsend's big-eared bats are considered over a reasonably foreseeable timeframe of ten years. Cumulative projects considered for Townsend's big-eared bats are those within 20 miles of the CNF and the Project ROW, based on the longest known seasonal movement in California (20 miles) and the typical home range which is between 12 and 19 miles (USDA Forest Service 2005). The full list of cumulative projects considered with potential to impact Townsend's big-eared bat is included as Appendix H.

The Townsend's big-eared bat is most critically threatened in the CNF by human disturbance to habitats that may support maternity roosts. The distribution of Townsend's big-eared bats is strongly correlated with the availability of caves and cave-like roosting habitat. There are no known Townsend's big-eared bat roosts along the Project ROW.

Based on the types of cumulative projects in and near the CNF along the Project ROW, lack of roosts along the Project ROW in the CNF, and the limited time frame of Project activities, cumulative impacts may potentially occur to only foraging bats that are in the Project ROW during Project activities. Cumulative projects identified in or near both the CNF and the Project ROW include mainly residential, local improvement, and research projects. As described above, the Project has a low potential to have a direct impact on foraging Townsend's big-eared bats by collision with structures and transmission lines. Cumulative projects that may construct new structures that pose a collision or electrocution risk to bats include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, the CAISO wind power plants, and ENPEX Power Plant. These cumulative projects potentially may contribute to adverse cumulative effects on pallid bats if impacts cannot be avoided or minimized by the individual projects. Given the nature of the Project activities and the proposed mitigation measures, however, the Project is not expected to have a substantial incremental cumulative effect on the Townsend's big-eared bat, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.14 Western Red Bat

As identified in Section 5.2.14, although suitable habitat is present in the CNF, no roosting individuals were observed in recent studies, but foraging bats were detected during 2009 surveys and roosting likely occurs within the CNF.

Direct and Indirect Effects

Based on the fact that western red bats often fly at high speeds and in groups at or above canopy level during migration, potential direct effects to this species include a moderate potential for collisions of

individuals with structures and transmission lines (Stokes, pers. comm.; Davenport, pers. comm.). Collision potential would be highest during migration and reduced at other times of the year. Implementation of mitigation measures, such as the installation of spherical marker balls at strategic locations on powerlines to increase their acoustic signature for echo-locating bats may reduce the risk of bat collisions with wires. Acoustic deterrents may also be installed on the towers to reduce the potential for collision (Stokes pers. comm.).

Indirect effects could include loss or fragmentation of foraging or roosting habitat from construction and O&M activities; roost site disturbance may lead to abandonment of roosts in some bat species. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect western red bat through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Project activities are expected to occur during a limited time frame (e.g., 3 to 6 weeks at each tower site for construction impacts, several hours per year for O&M site visits and/or maintenance). Indirect effects also may occur if construction involves blasting or drilling that causes substantial vibration of the earth/rock surrounding an active roost. Implementation of applicable biological mitigation measures, such as surveying for bats and minimization of substantial vibration would minimize these indirect impacts.

Cumulative Effects

Cumulative effects to western red bats are considered over a reasonably foreseeable timeframe of ten years. The projects considered in the cumulative analysis occur within 10 miles of the CNF and Project boundaries, based on the species typical foraging distance of less than 1 mile from the colony (USDA Forest Service 2005), but dispersal potentially may be similar to the pallid bat (Stokes pers. comm.). Cumulative projects identified outside the CNF in or near both the CNF and the Project ROW include residential and local improvement projects. Cumulative projects identified within the CNF in or near the Project ROW include mainly residential, local improvement, and research projects. The full list of cumulative projects considered with potential to impact the western red bat is included as Appendix H. Because of its wide distribution, the western red bat has the potential to occur near all of these projects.

Major threats to western red bats in the CNF include disruption of habitat connectivity by development, disturbance to roost sites, agricultural spraying, water impoundments, fire and predation. Although no roosting individuals were observed during the 2009 surveys, most major riparian areas within the CNF are likely to have some occurrences of roosting western red bats (Stokes, pers. comm.), as well as additional migratory individuals. Western red bats are typically solitary and highly migratory between their summer and winter range. Project activities could cause some loss or fragmentation of foraging or roosting habitat, particularly during construction. Many of the cumulative projects also have potential to fragment habitat or disturb roosting western red bats. Fuel modification projects, including the Sweetwater and Viejas Creek Fuels Treatment Project, may remove potential western red bat roosting sites. Most of the cumulative projects that involve residential development are in already developed areas and would not be likely to affect western red bat roosting. Other construction projects may temporarily fragment habitat and potentially disturb western red bat roosting during construction, including the various power and energy projects that occur over 10 miles from CNF Lands. Because Project construction activities would occur during a limited timeframe, cumulative impacts to western red bat habitat are unlikely to occur. As described above, implementation of applicable biological mitigation measures, such as surveying for bats and minimization of substantial vibration, would

minimize the indirect impacts of the Project on western red bats and, thus, the Project is not expected to have a substantial incremental cumulative effect on western red bat habitat.

As described above, the Project has a moderate potential to have a direct impact on migrating or foraging western red bats by collision with structures and transmission lines. Cumulative projects that may construct new structures that pose a collision or electrocution risk to western red bats include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, the CAISO wind power plants, and ENPEX Power Plant. Installation of mitigation measures, such as spherical marker balls on powerlines and acoustic deterrents on towers would reduce the potential for western red bats to collide with wires and towers constructed for the Project.

These cumulative projects potentially may contribute to adverse cumulative effects on pallid bats if impacts cannot be avoided or minimized by the individual projects. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect by disturbance to roosting sites, habitat fragmentation or collision with structures. The overall effects are not expected to cause a decline in the population of this species within the CNF.

6.3.2.15 California Leaf-nosed Bat

As identified in Section 5.2.15, suitable foraging and roosting habitats exist on the CNF, although the California leaf-nosed bat was not detected during the 2009 surveys.

Direct and Indirect Effects

Based on the fact that California leaf-nosed bats usually fly at low levels, appear to have keen eyesight and echolocation, and are highly maneuverable, potential direct effects include a low potential for collisions of individuals with structures and transmission lines (Stokes pers. comm., Davenport, pers. comm.). Implementation of mitigation measures, such as the installation of spherical marker balls at strategic locations on powerlines to increase their acoustic signature for echo-locating bats may reduce the risk of bat collisions with wires. Acoustic deterrents may also be installed on the towers to reduce the potential for collision (Stokes pers. comm.).

Indirect effects could include loss or fragmentation of foraging or roosting habitat from construction and O&M activities; roost site disturbance may lead to abandonment of roosts in some bat species. Project activities involving conventional construction equipment (e.g., graders, boom cranes, cement trucks, crew trucks) may indirectly affect California leaf-nosed bat through increased human disturbance, noise, and dust in the immediate vicinity of access roads and permanent and temporary tower pads. Use of helicopters would be expected to have similar indirect effects as conventional methods, with the addition of localized ground vibration and wind due to helicopters landing and taking off at TSAPs. Indirect effects also may occur if humans approach an active nursery colony, if entrances to nursery colony sites become blocked, if construction involves blasting or drilling that causes substantial vibration of the earth/rock surrounding an active nursery colony, or if a structure such as a bridge is disturbed by construction. Implementation of applicable biological mitigation measures, such as surveying for bat colonies, prohibiting approach and entrance to an active nursery colony site, and minimization of substantial vibration, would minimize these indirect impacts.

Cumulative Effects

Cumulative effects to California leaf-nosed bats are considered over a reasonably foreseeable timeframe of ten years. Cumulative projects for California leaf-nosed bats were considered to be projects within 7 miles of the CNF and the Project ROW because the typical dispersal distance is between 6 and 7 miles (Stokes pers. comm.), although foraging typically occurs between 0.9 and 1.9 miles of roosts. The presence of California leaf-nosed bat within the Project ROW in the CNF is anticipated to be infrequent or unlikely over the life of the Project. The full list of cumulative projects considered with potential to impact the California leaf-nosed bat is included as Appendix H.

The USFS considers the biggest threat to California leaf-nosed bats in the CNF to be loss or disturbance of roost sites. Cumulative projects identified in or near the CNF and Project ROW are mainly residential, local improvements, and research projects. Because California leaf-nosed bats are primarily a desert species with limited dispersal, and given the lack of any data confirming any roosting sites in the Project ROW, the Project is unlikely to contribute to cumulative loss or disturbance of roost sites. Similarly, none of the cumulative projects involve warm caves, mines or buildings with temperatures that often exceed 82 degrees Fahrenheit and, thus, would not be likely to affect their roosting habitat. For the Project, implementation of applicable biological mitigation measures, such as surveying for bat colonies, and minimization of substantial vibration, would minimize the slight potential for indirect cumulative impacts.

As described above, the Project has a low potential to have a direct impact on California leaf-nosed bats by collision with structures and transmission lines. Cumulative projects that may construct new structures that pose a collision or electrocution risk to bats include the La Rumorosa Wind Project, Crestwood Wind Project, Stirling Energy Systems and SDG&E Solar Power Project, the CAISO wind power plants, and ENPEX Power Plant. Installation of mitigation measures for the Project, such as spherical marker balls on powerlines and acoustic deterrents on towers, would reduce the potential for bats to collide with wires and towers constructed for the Project. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect, and the overall effects are not expected to cause a decline in the population of this species within the CNF.

SECTION 7.0 – DETERMINATIONS

The Project ROW within the CNF contains known or suitable habitat for 23 plant species and 15 wildlife species (three birds, four mammals, one amphibian, and seven reptiles) on the RFSS List. Each of the 38 species therefore may be minimally affected by direct and indirect effects from the construction, operations, and maintenance of the Project, which can include human disturbance, noise, vibration, dust, and invasion by exotic species. The Project will potentially cause direct effects to approximately 92.24 acres (43.96 acres of permanently impacted area and 48.28 acres of temporarily impacted area) on the CNF. Some of the area covered by the proposed facilities may be occupied by RFSS list species.

Potential direct and indirect adverse impacts to plants and wildlife would result primarily from loss of habitat, avoidance and temporary disturbance from noise and light (mainly during construction), and incidental impact to or mortality of individuals during construction (especially clearing, grading, earth-moving, and excavation activities) and O&M phases (e.g., birds and bats may collide with towers and other Project facilities during the operations phase). To offset any potential deleterious impacts to any RFSS, a broad-sweeping range of mitigation measures has been developed and approved for implementation over the life of the Project and is detailed in the Mitigation Monitoring, Compliance, and Reporting Program (Appendix F). Cumulative impacts of the Project will be reduced through the implementation of a number of mitigation measures, such as utilizing water trucks to wet roads during construction activities to reduce dust dispersal, use of biological monitors to ensure compliance of the mitigation measures during construction activities (e.g., avoid and minimize disturbance to nesting birds), noise restrictions on nesting birds, proper covering of open trenches, and a 15-mile-per-hour speed limit to be observed on dirt access roads to reduce dust and allow wildlife to disperse. A complete list of mitigation measures is found in Appendix F.

Adverse Project effects are considered minor with respect to the overall sustainability of plant and wildlife species within the analysis area, including adjacent areas outside of the Project ROW. Individual species impacts will generally be temporary as the majority of adverse impacts will occur during the construction phase of the Project. Temporary impacts may also occur during O&M activities. Certain impacts to plant and wildlife habitats are considered permanent as the loss or alteration of vegetation structure/habitat (e.g., fragmentation) for Project facilities (e.g., access roads) will not allow for natural or artificial revegetation or restoration during the life of the Project. These new conditions may create more suitable areas to be occupied by RFSS or may cause species to be more vulnerable to other landscape events (e.g., wildfires, erosion).

Positive indirect impacts for some species as related to the Project may occur through the creation of suitable habitat for species such as the San Diego horned lizard and disturbance-adjusted RFSS plant species. For example, the creation of disturbed open soil areas through construction activities (temporary impact) and maintenance of access roads (permanent impact) will create open areas suitable for basking and dispersal, native ant colonies and thus, provide a prey base for the San Diego horned lizard.

7.1. DETERMINATIONS FOR PLANT SPECIES

Project activities (construction and continued O&M of the Project and associated facilities) may have direct and indirect adverse affects to plant species based on the literature review of home ranges and known occurrences/observations (Appendix D) for each species. Two RFSS plant species, felt-leaved monardella and Gander's ragwort, were originally identified within Project impact areas, but potential impacts by Project activities were successfully avoided by routing modifications within CNF (i.e., the

Hermes Copper and La Posta reroutes). Direct impacts to approximately 1,350 individuals of Payson's jewelflower, eight individuals of Tecate tarplant, and one individual of delicate clarkia are estimated to occur on the CNF. Although no individual plants for the other 20 RFSS plant species were identified within the Project impact areas on USFS lands in the CNF, direct and/or indirect impacts may potentially occur to 14 of these species based on known occurrence/observation data (Appendix D) and/or availability of suitable habitat if the species exists in the Project impact area; these species include Dean's milk-vetch, Jacumba milk-vetch, Descanso milk-vetch, Orcutt's brodiaea, Dunn's mariposa lily, Lakeside ceanothus, long-spined spineflower, vanishing buckwheat, Ramona Horkelia, felt-leaved monardella, ganders' ragwort, Moreno currant, Hammitt's clay-cress, and southern jewelflower.

Project activities may positively affect individuals of the following seven RFSS plant species: Dean's milk-vetch, Jacumba milk-vetch, Descanso milk-vetch, Dunn's mariposa lily, Tecate tarplant, Ramona horkelia, and Laguna linanthus. Positive indirect impacts for these species as related to the Project may occur through the creation of suitable habitat for disturbance-adjusted RFSS plant species. For example, the creation of disturbed open soil areas through construction activities (temporary impact) and maintenance of access roads (permanent impact) will create open areas suitable for pioneer and other sun-loving plant species, which like disturbed habitats.

Based on permanent and temporary direct and indirect effects from the Project and the infrequent need for routine maintenance activity, it has been determined conservatively that the construction and continued O&M of Project facilities may affect individuals of all the plant species listed above. However, with the implementation of mitigation measures (Appendix F), construction and O&M activities are not likely to result in a trend toward federal listing or a loss of viability for these plant species.

7.2. DETERMINATIONS FOR WILDLIFE SPECIES

Project activities (construction and continued O&M of the Project and associated facilities) may have direct and indirect adverse affects to wildlife species based on the literature review of home ranges and known occurrences/observations (Appendix D) for each species. Individuals of the following 15 RFSS wildlife species may potentially be impacted by Project activities: large-blotched salamander, California legless lizard, coastal rosy boa, southwestern pond turtle, San Diego ring-necked snake, San Diego mountain kingsnake, San Diego horned lizard, two-striped garter snake, coastal cactus wren, bald eagle, California spotted owl, pallid bat, Townsend's big-eared bat, western red bat, and California leaf-nosed bat.

Project activities may positively affect individuals of the following two RFSS wildlife species: San Diego horned lizard and coastal rosy boa. Positive indirect impacts for these wildlife species as related to the Project may occur through the creation of suitable habitat for disturbance-adjusted RFSS wildlife species. For example, the creation of disturbed open soil areas through construction activities (temporary impact) and maintenance of access roads (permanent impact) will create open areas suitable for basking and dispersal, native ant colonies and thus, provide a prey base for the San Diego horned lizard. In addition, the coastal rosy boa will benefit from the edge effect created near roads and other open areas as they may inhabit these edge areas after construction occurs.

Based on permanent and temporary direct and indirect effects from the Project and the infrequent need for routine maintenance activity, it has been determined that the construction and continued O&M of facilities may affect individuals of all the wildlife species listed above. However, with the implementation of mitigation measures (Appendix F), construction and O&M are not likely to result in a trend toward federal listing or a loss of viability for these wildlife species.

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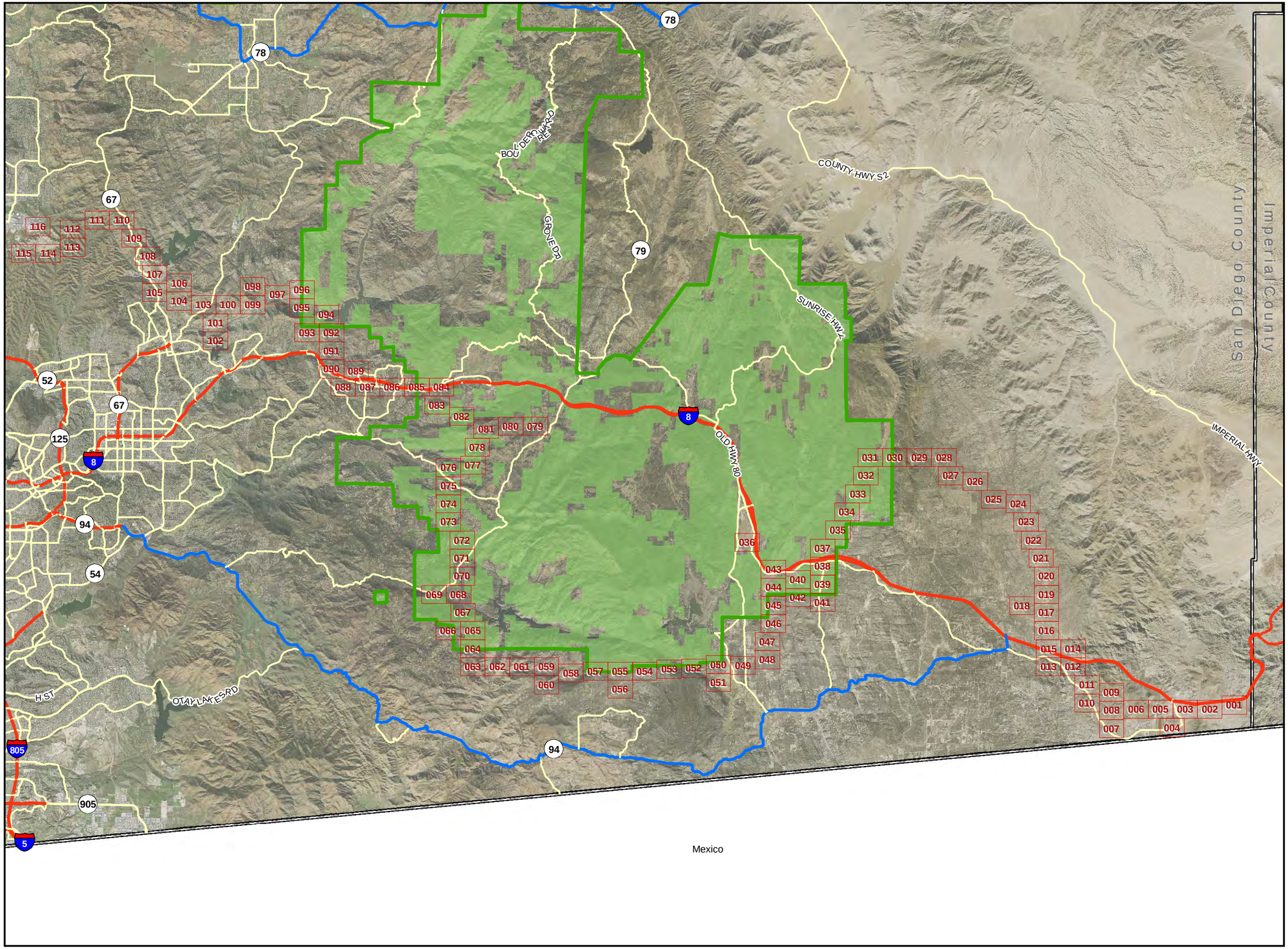
APPENDIX A – COMPREHENSIVE MAP BOOK FOR RFSS OCCURRENCES



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)

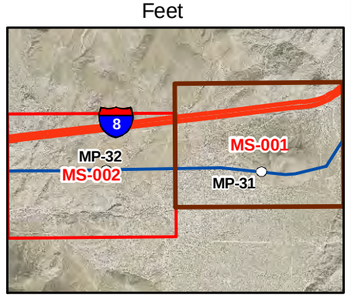
Appendix A
USFS Sensitive
Species Occurrences
Legend - 5/24/2010

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

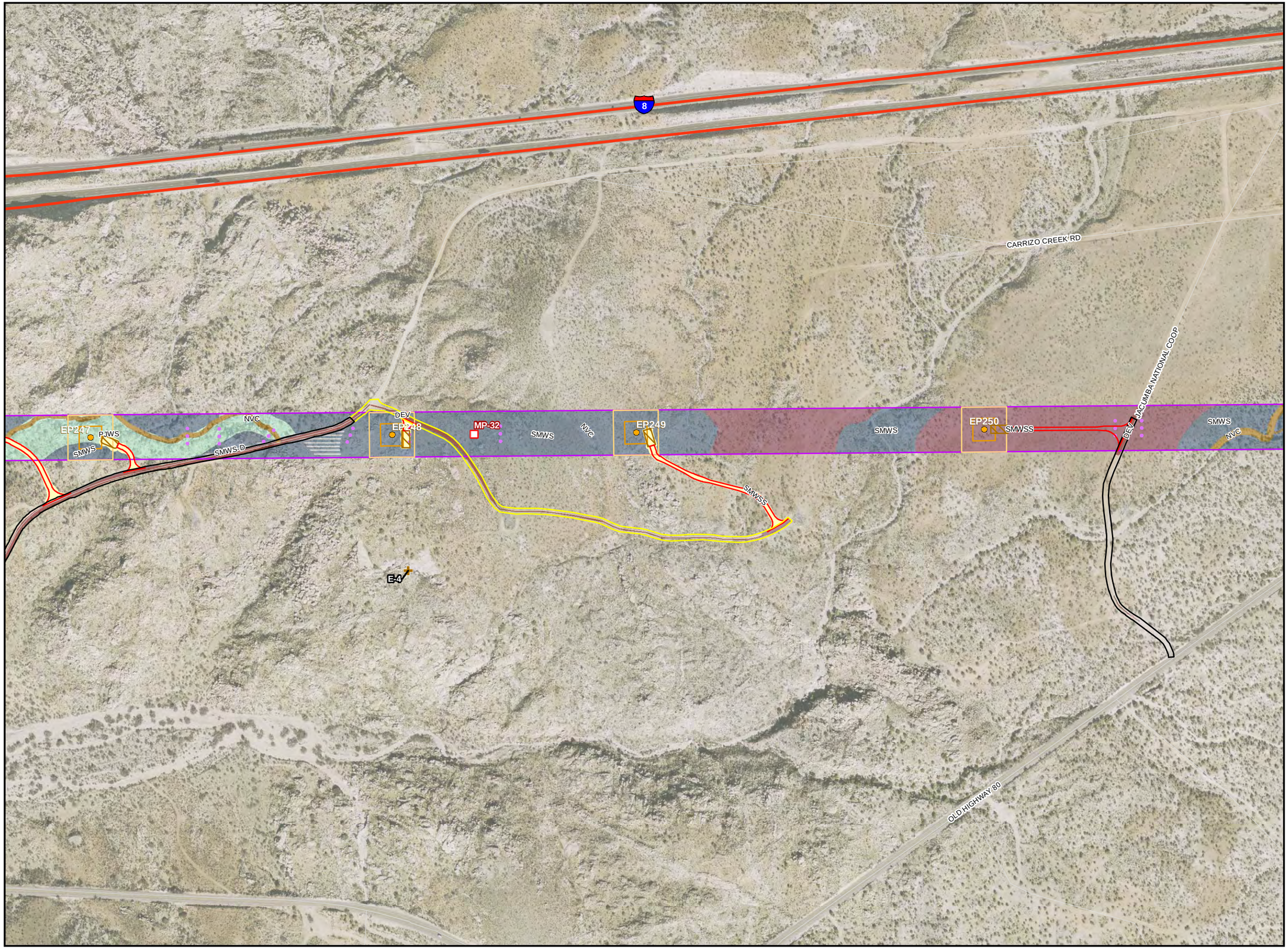
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-001 - 5/24/2010



SUNRISE POWERLINK℠

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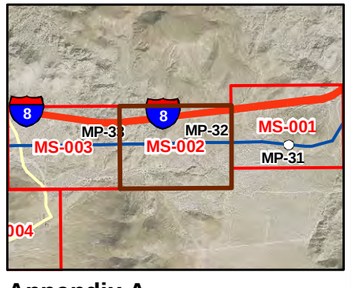
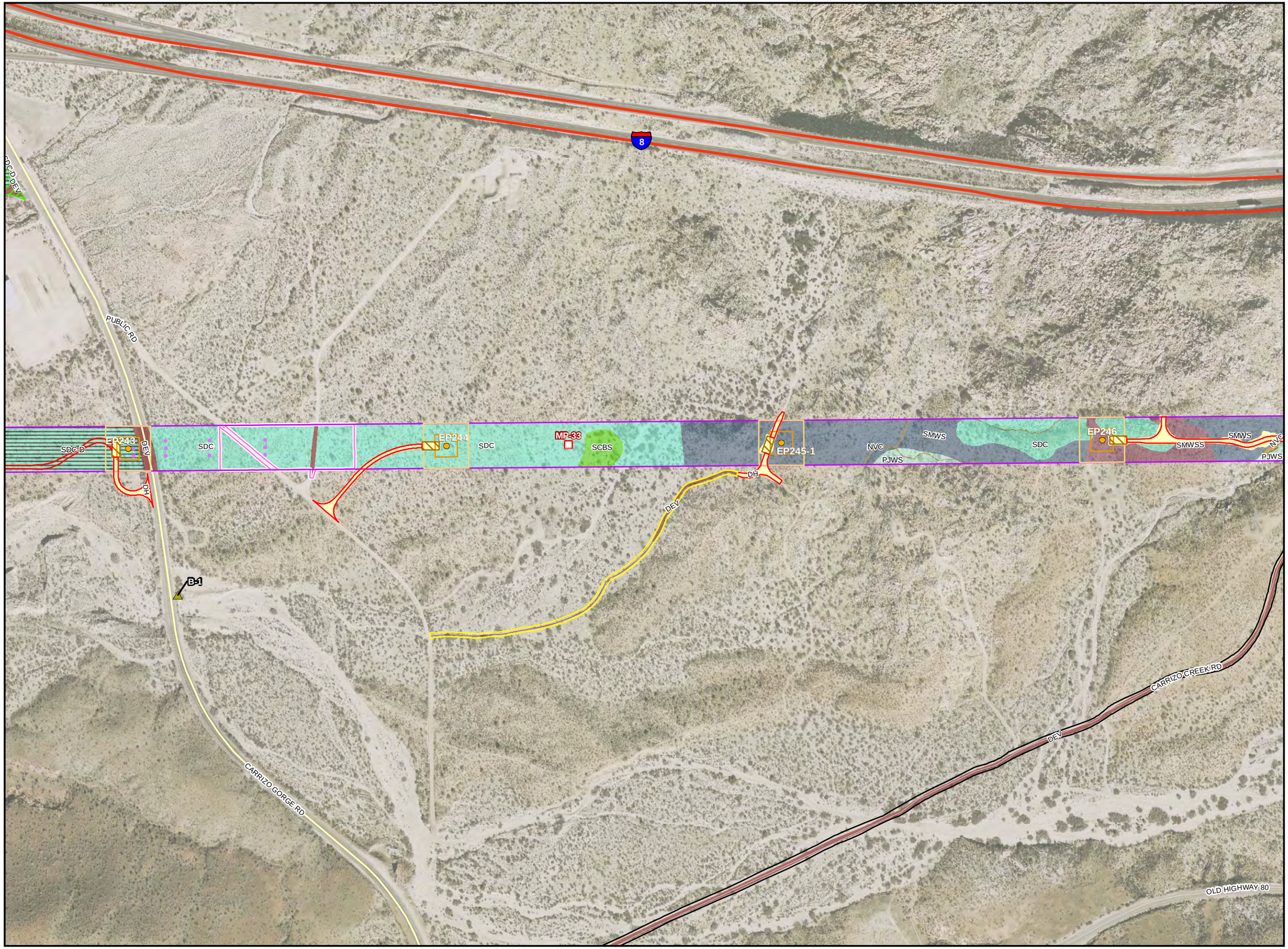


Appendix A

USFS Sensitive Species Occurrences

MS-002 - 5/24/2010



SUNRISE POWERLINK℠

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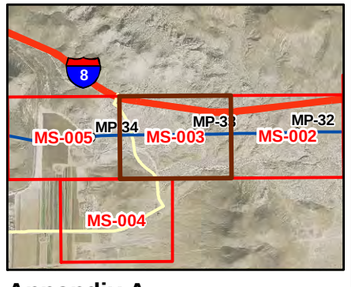

Appendix A

USFS Sensitive Species Occurrences

MS-003 - 5/24/2010

SUNRISE POWERLINK℠

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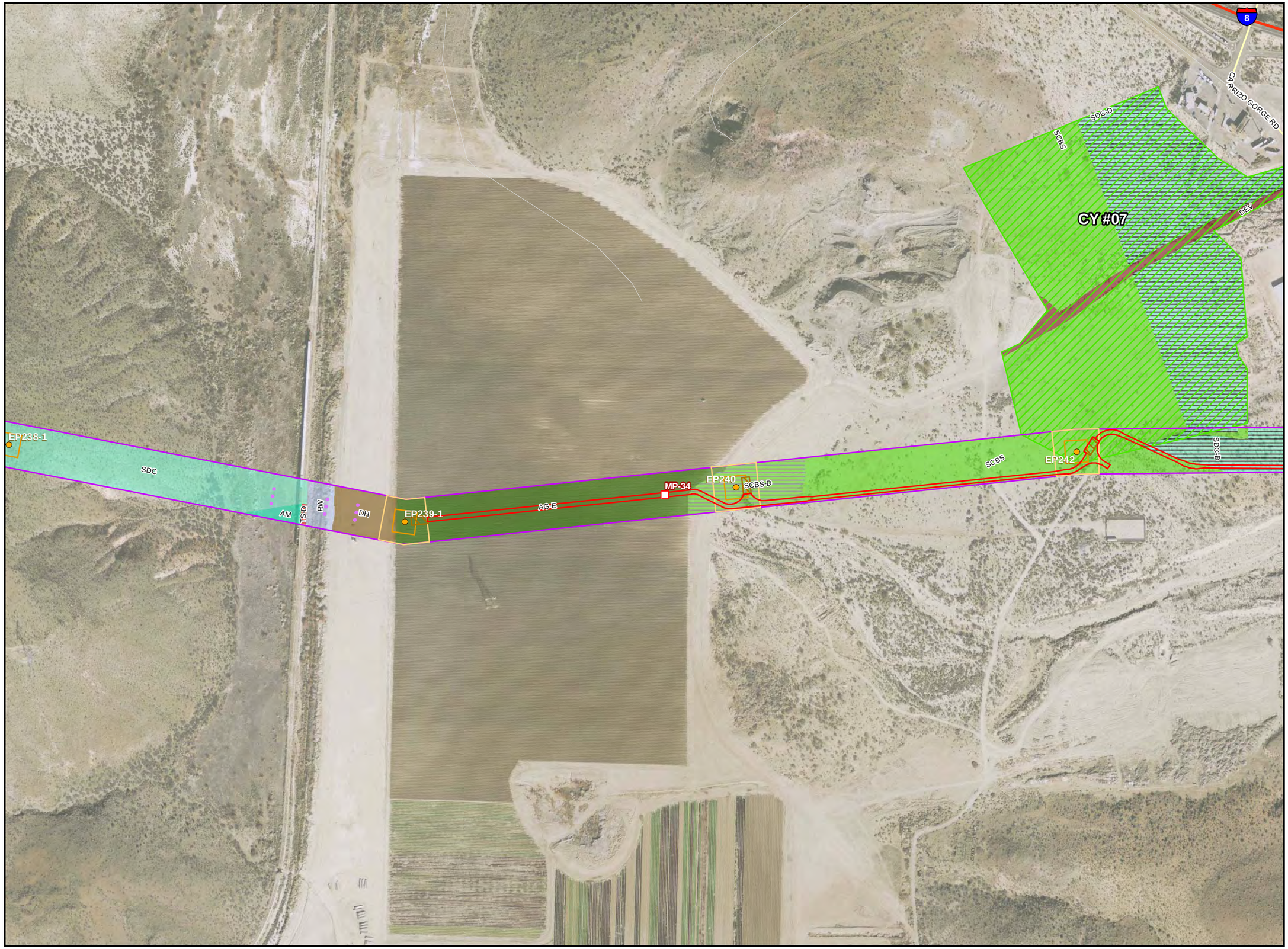
Appendix A

USFS Sensitive Species Occurrences

MS-004 - 5/24/2010



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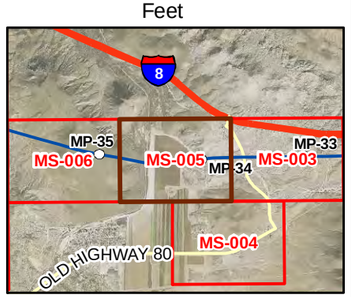
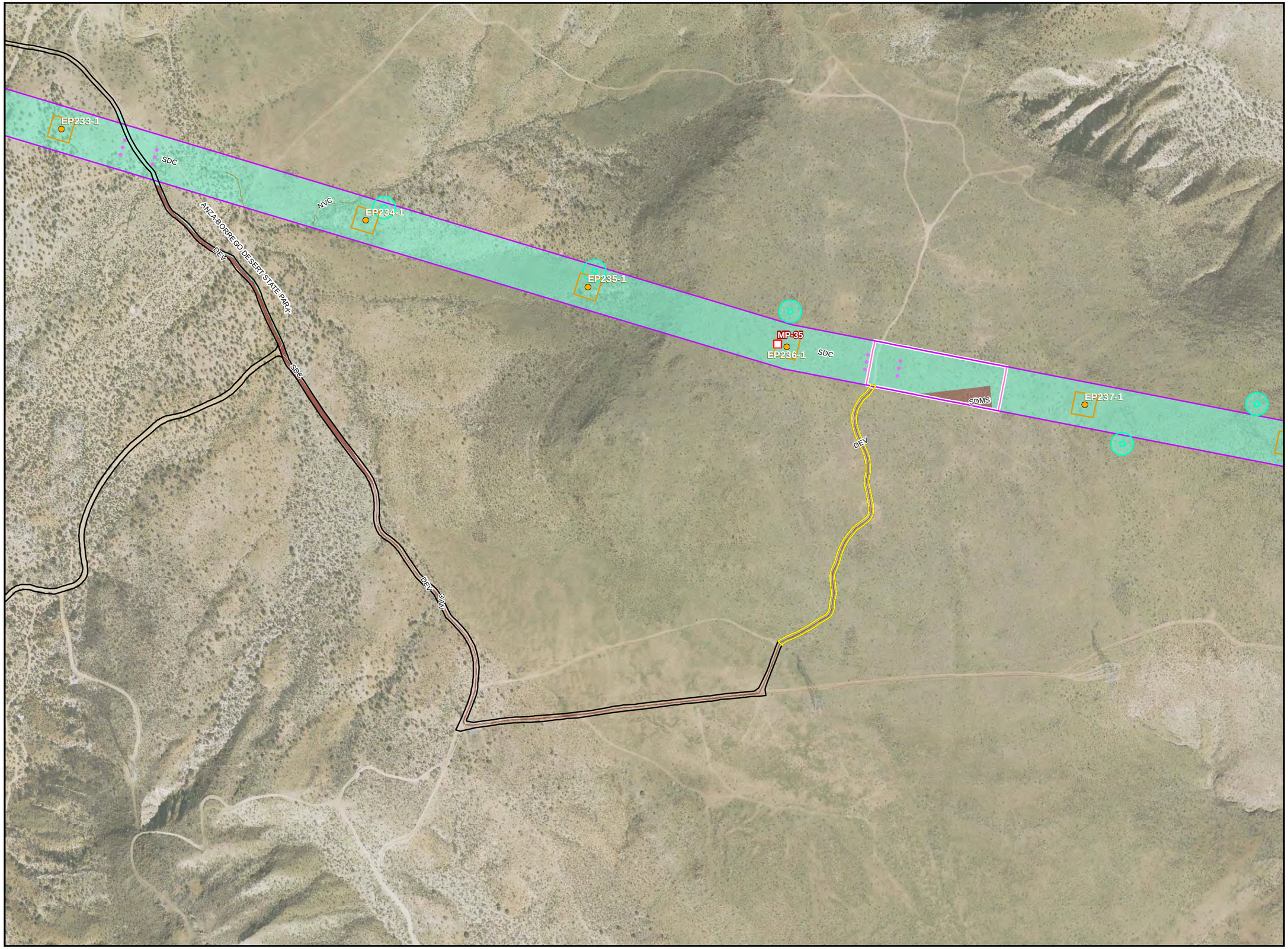


Appendix A

USFS Sensitive Species Occurrences

MS-005 - 5/24/2010



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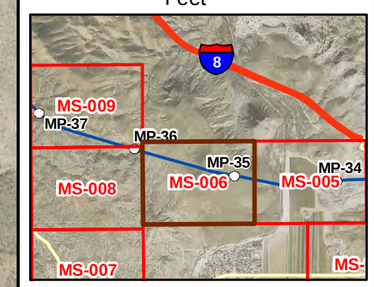

Appendix A

USFS Sensitive Species Occurrences

MS-006 - 5/24/2010

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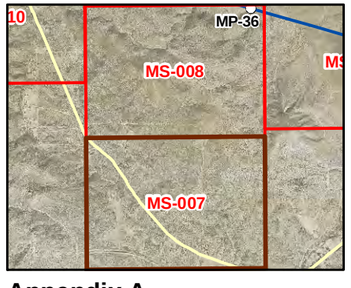

Appendix A

USFS Sensitive Species Occurrences

MS-007 - 5/24/2010

SUNRISE POWERLINK℠

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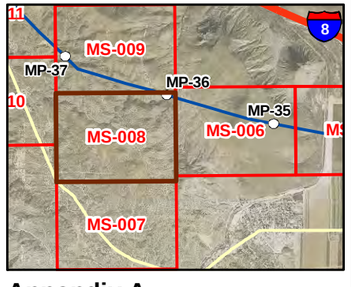

Appendix A
USFS Sensitive
Species Occurrences
MS-008 - 5/24/2010

SUNRISE POWERLINK℠

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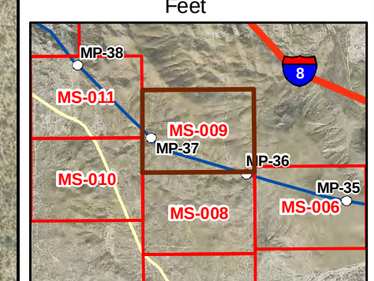

Appendix A
USFS Sensitive
Species Occurrences
MS-009 - 5/24/2010

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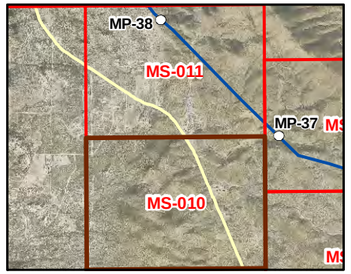
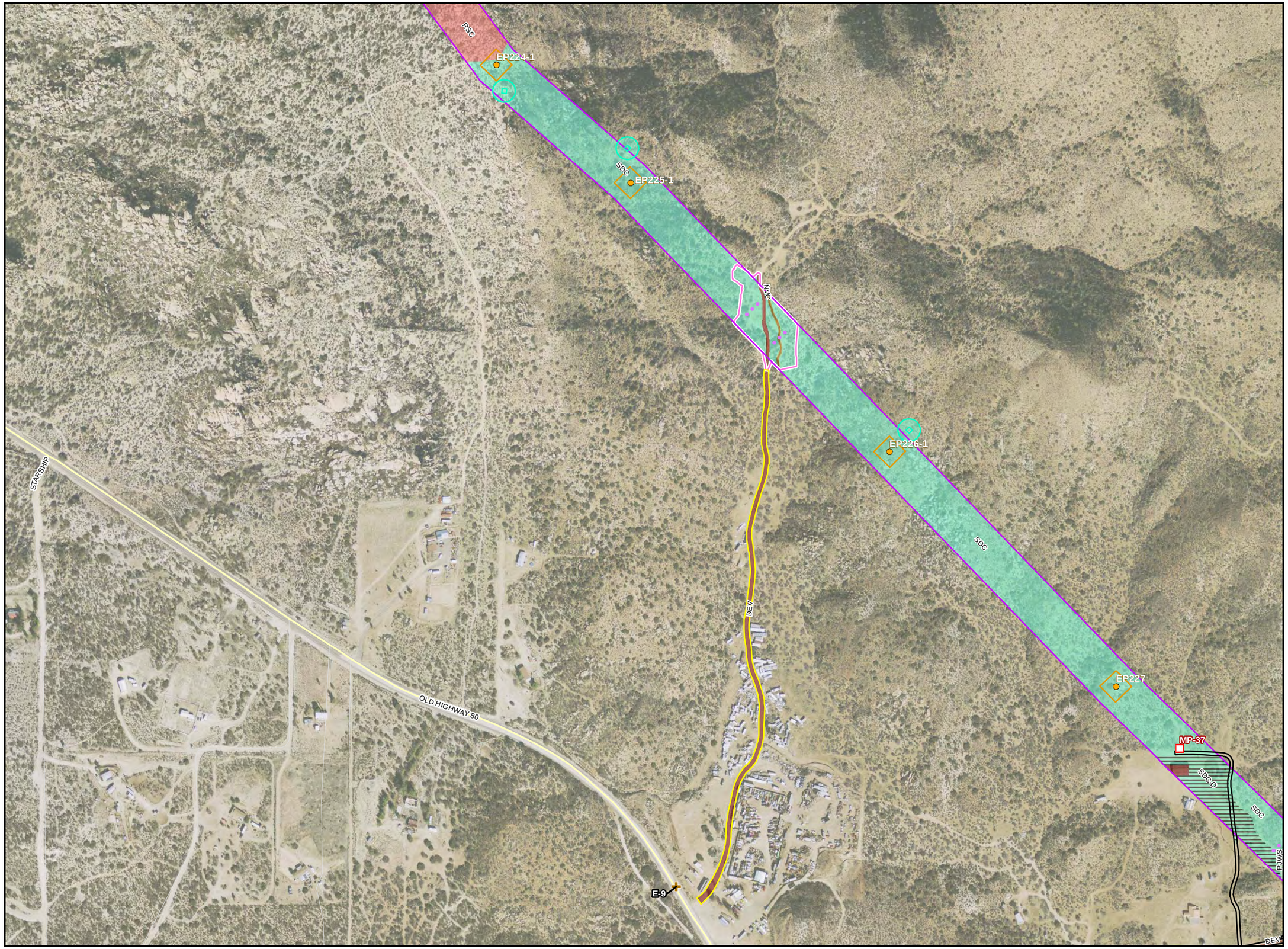


Appendix A

USFS Sensitive Species Occurrences

MS-010 - 5/24/2010



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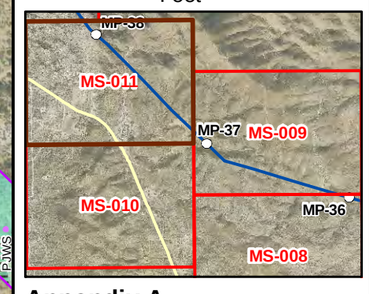
0 400 800

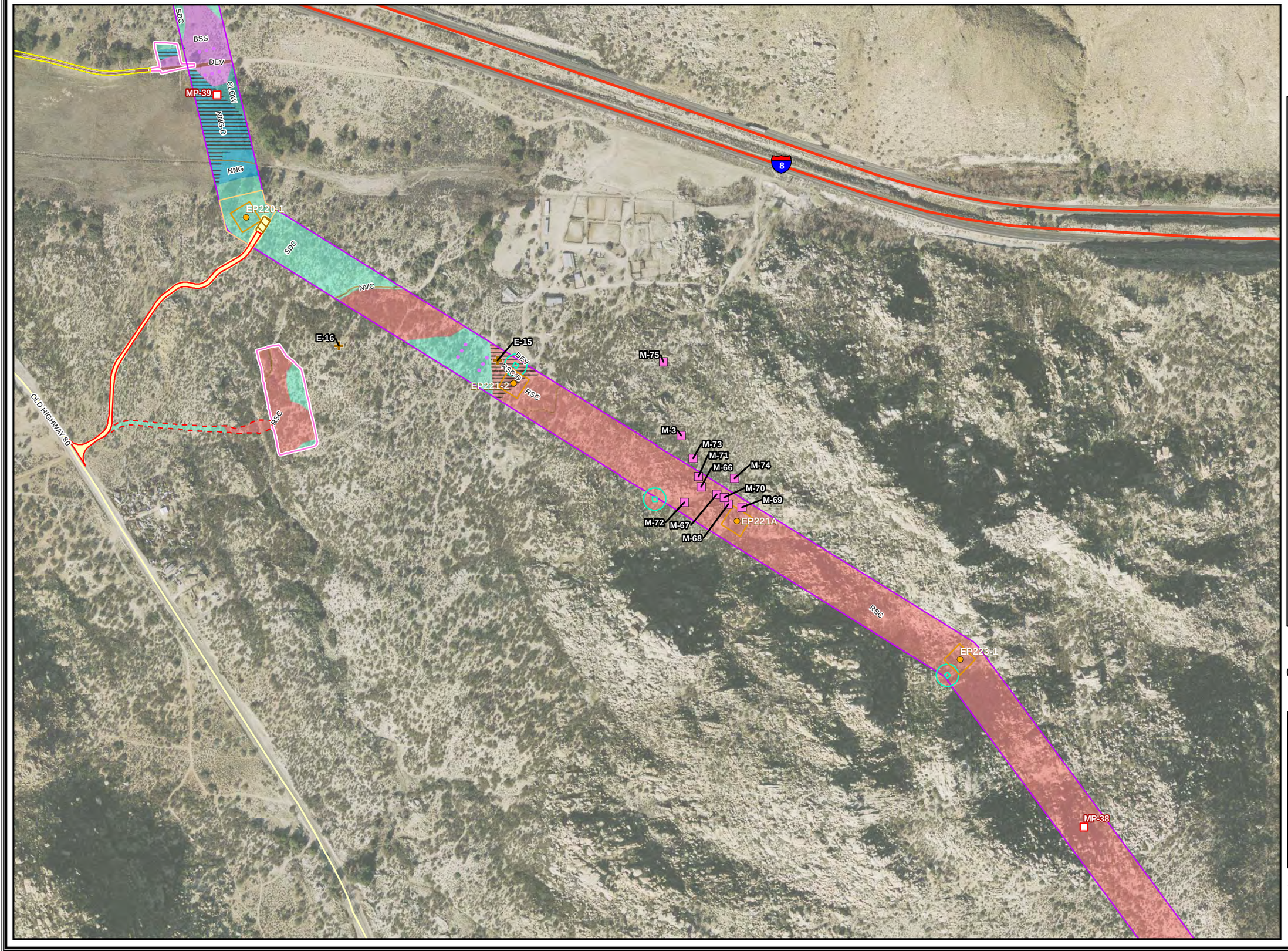
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-011 - 5/24/2010

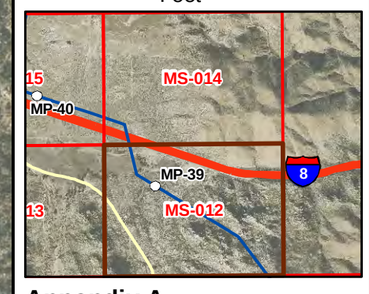


SUNRISE POWERLINK℠

- 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

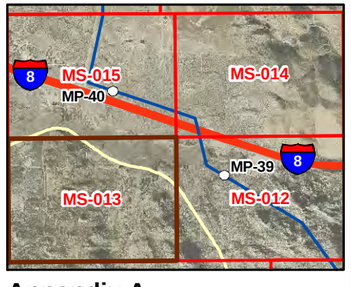
MS-012 - 5/24/2010

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

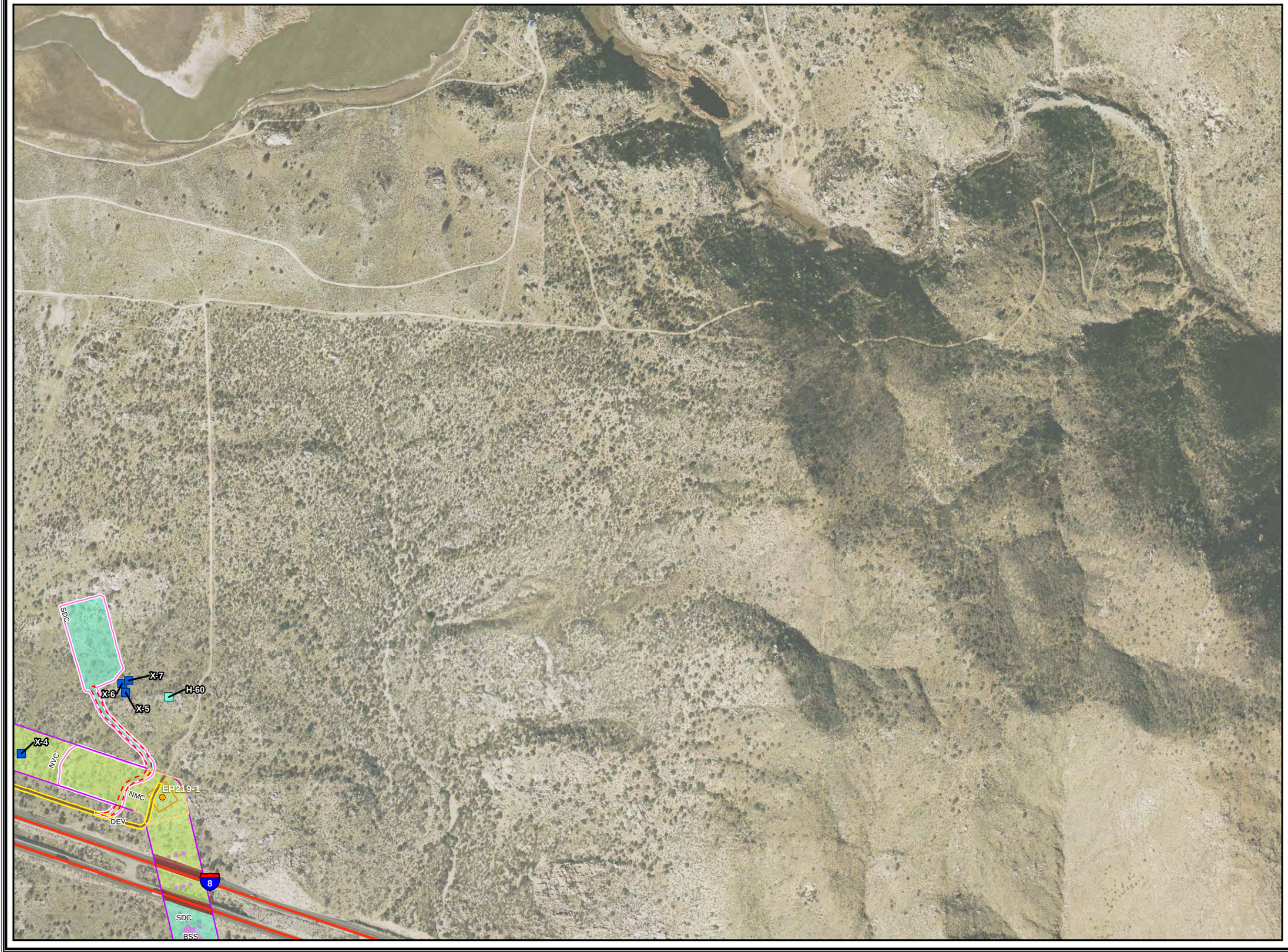
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-013 - 5/24/2010

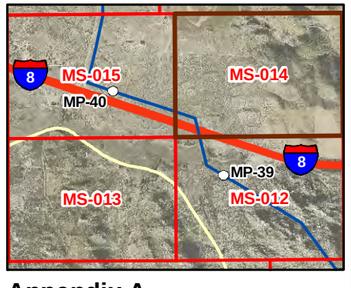


SUNRISE POWERLINK℠

- 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

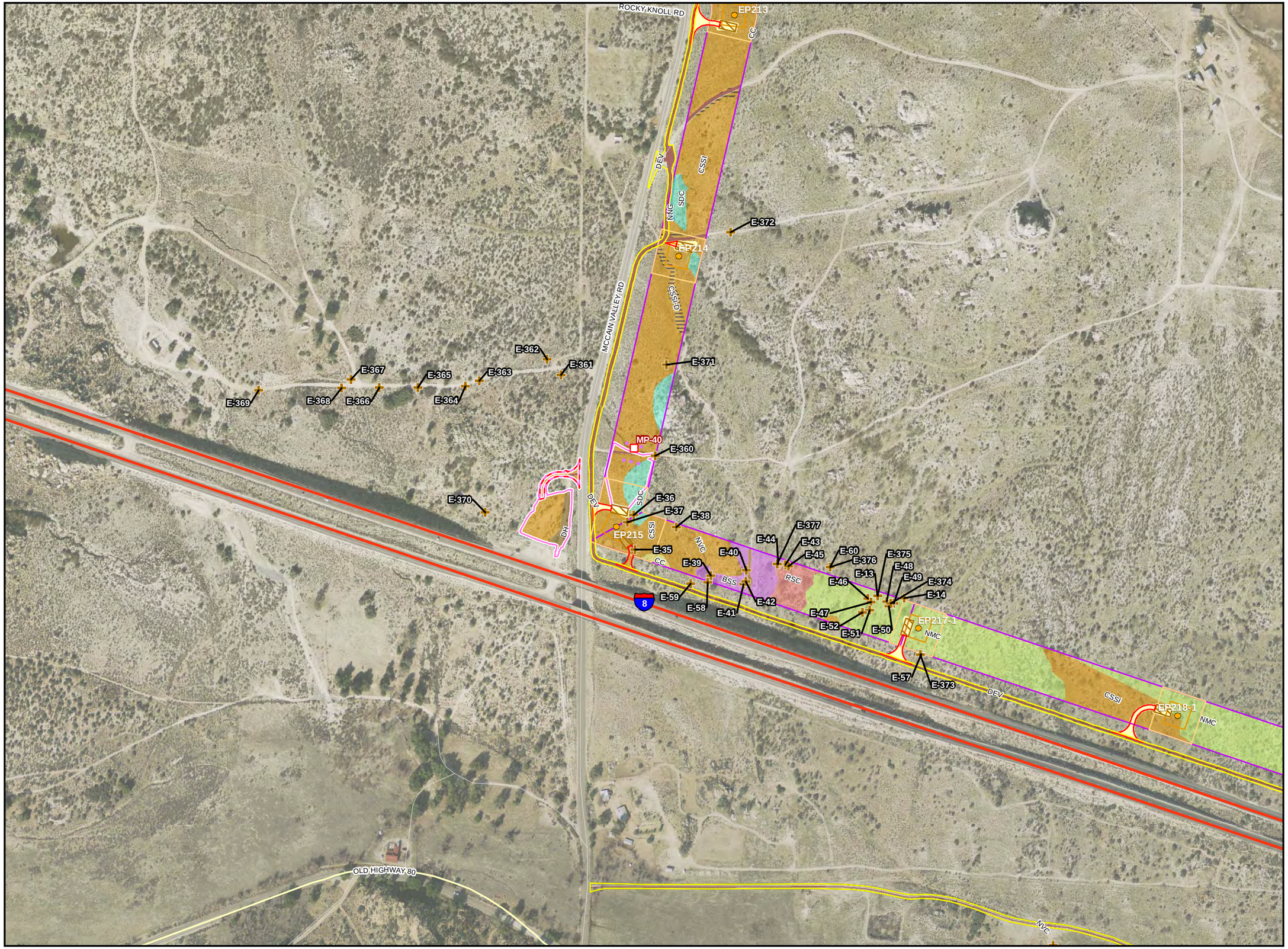
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-014 - 5/24/2010



SUNRISE POWERLINK℠

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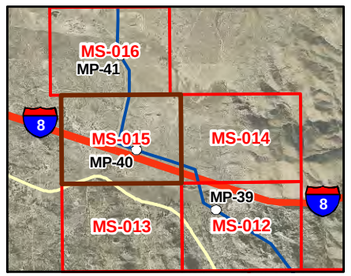
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

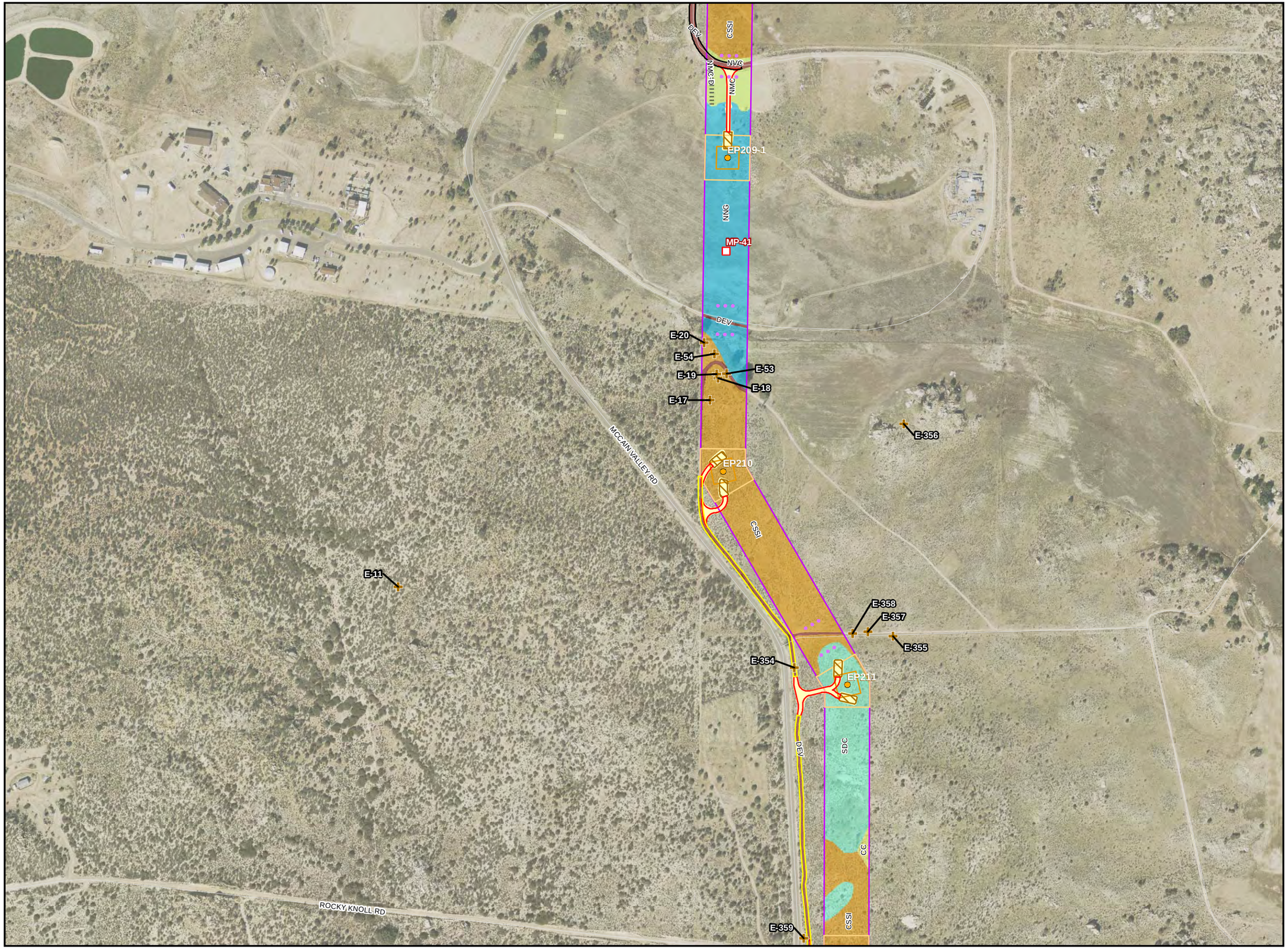
Feet



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
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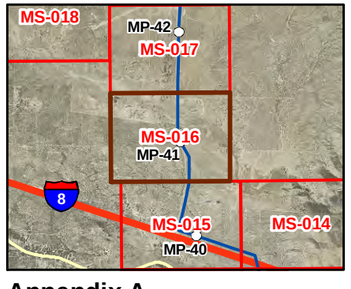
- Temporary Access Road
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

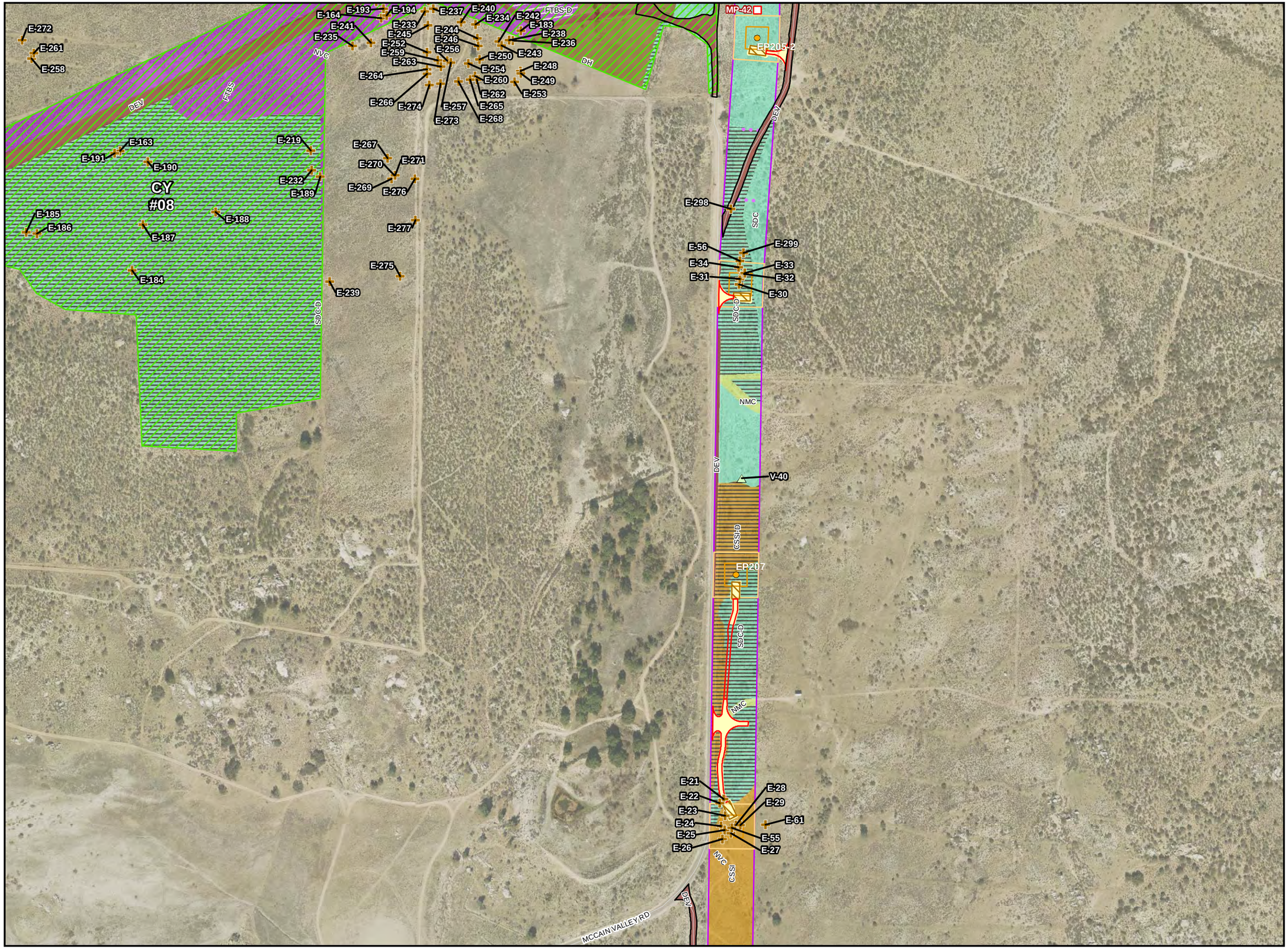
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-016 - 5/24/2010

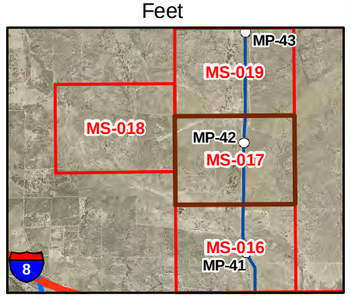


SUNRISE POWERLINK℠

- 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

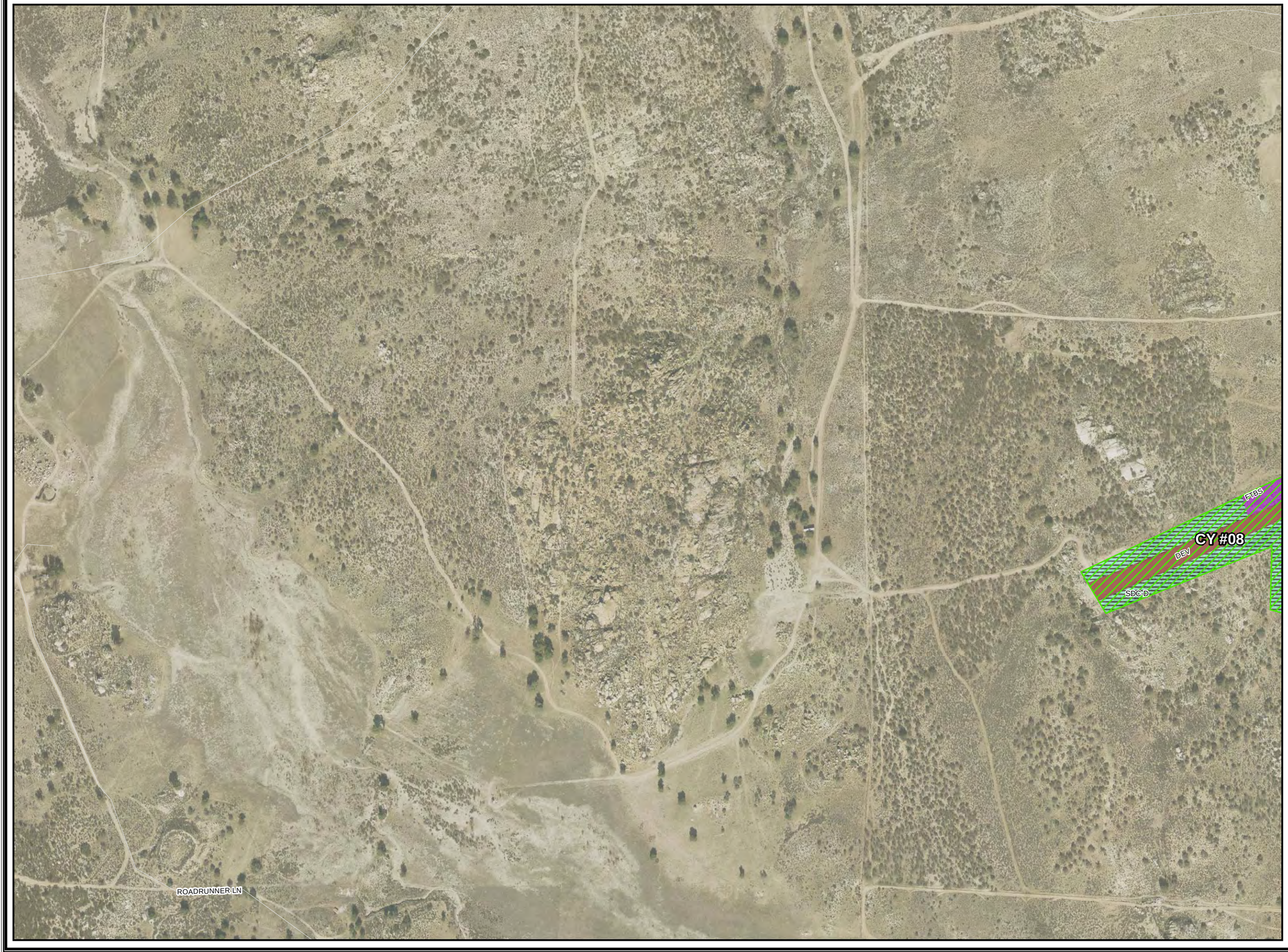
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-017 - 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
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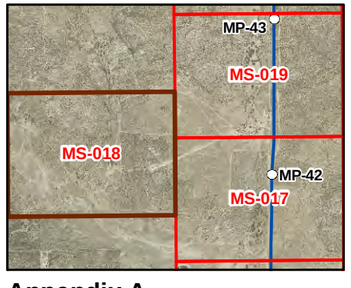
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

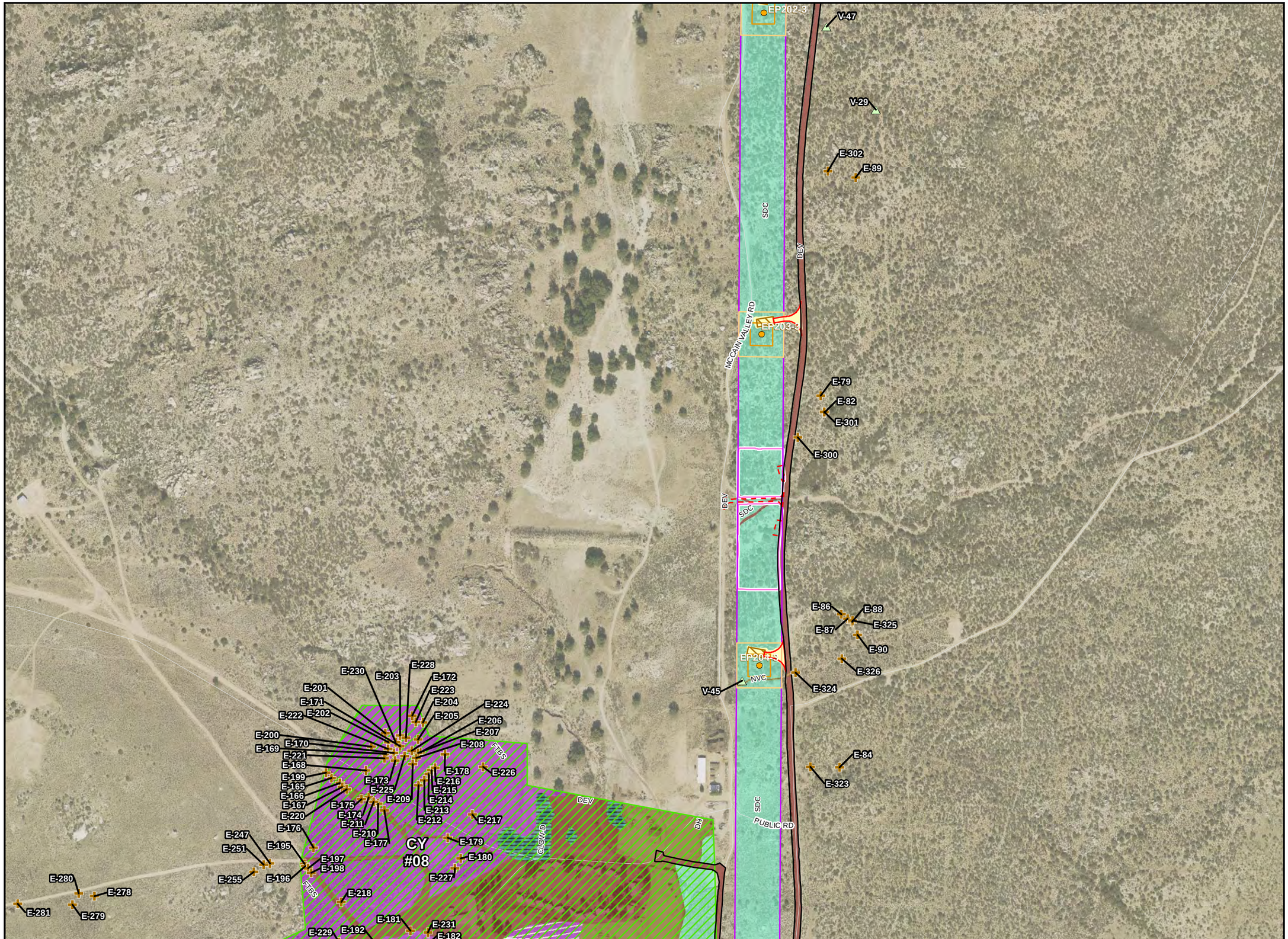
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-018 - 5/24/2010

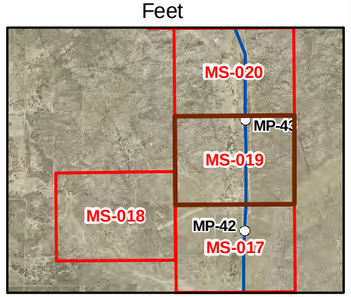


SUNRISE POWERLINK℠

- 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

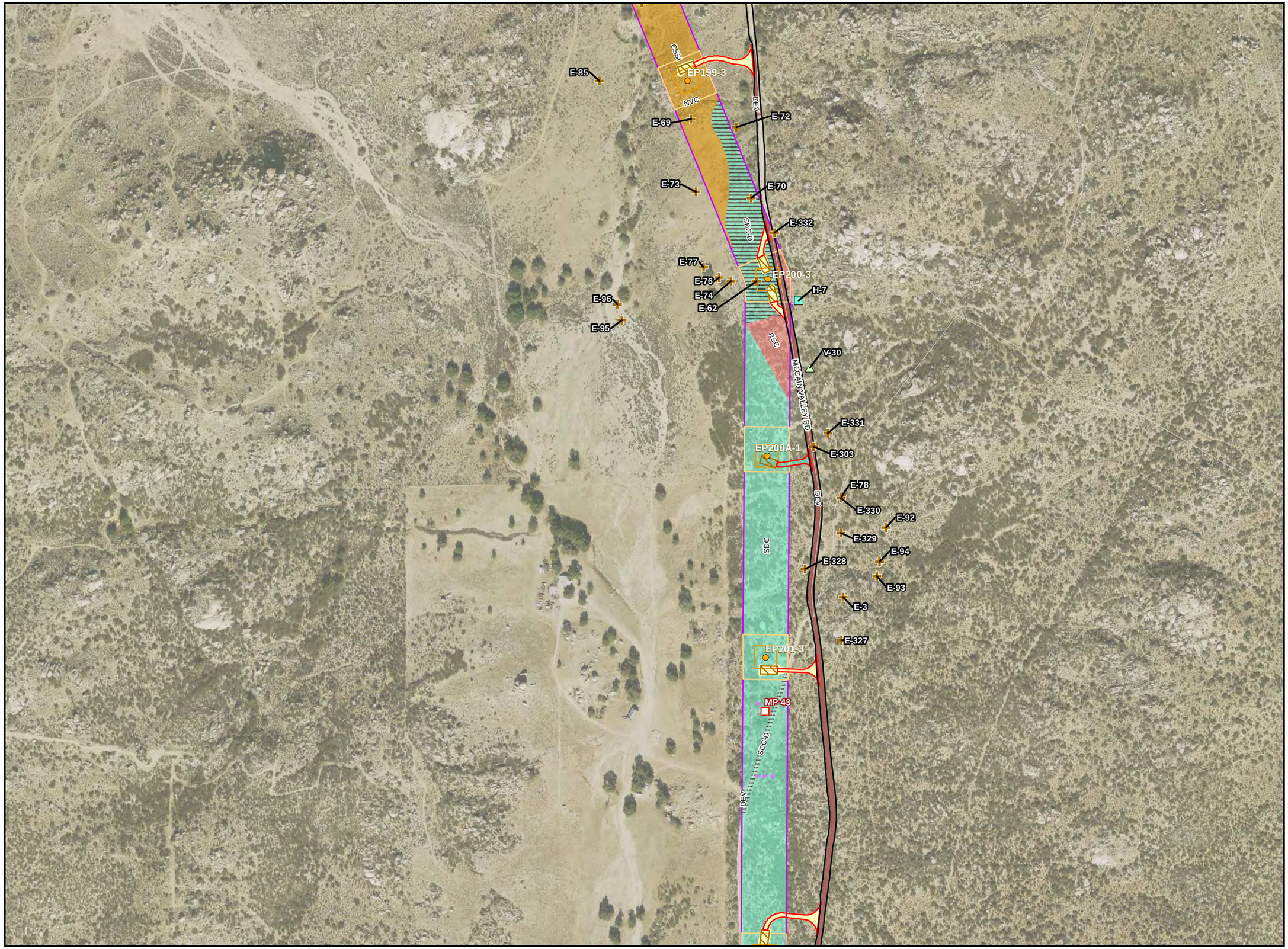
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-019 - 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
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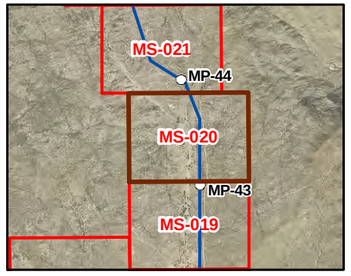
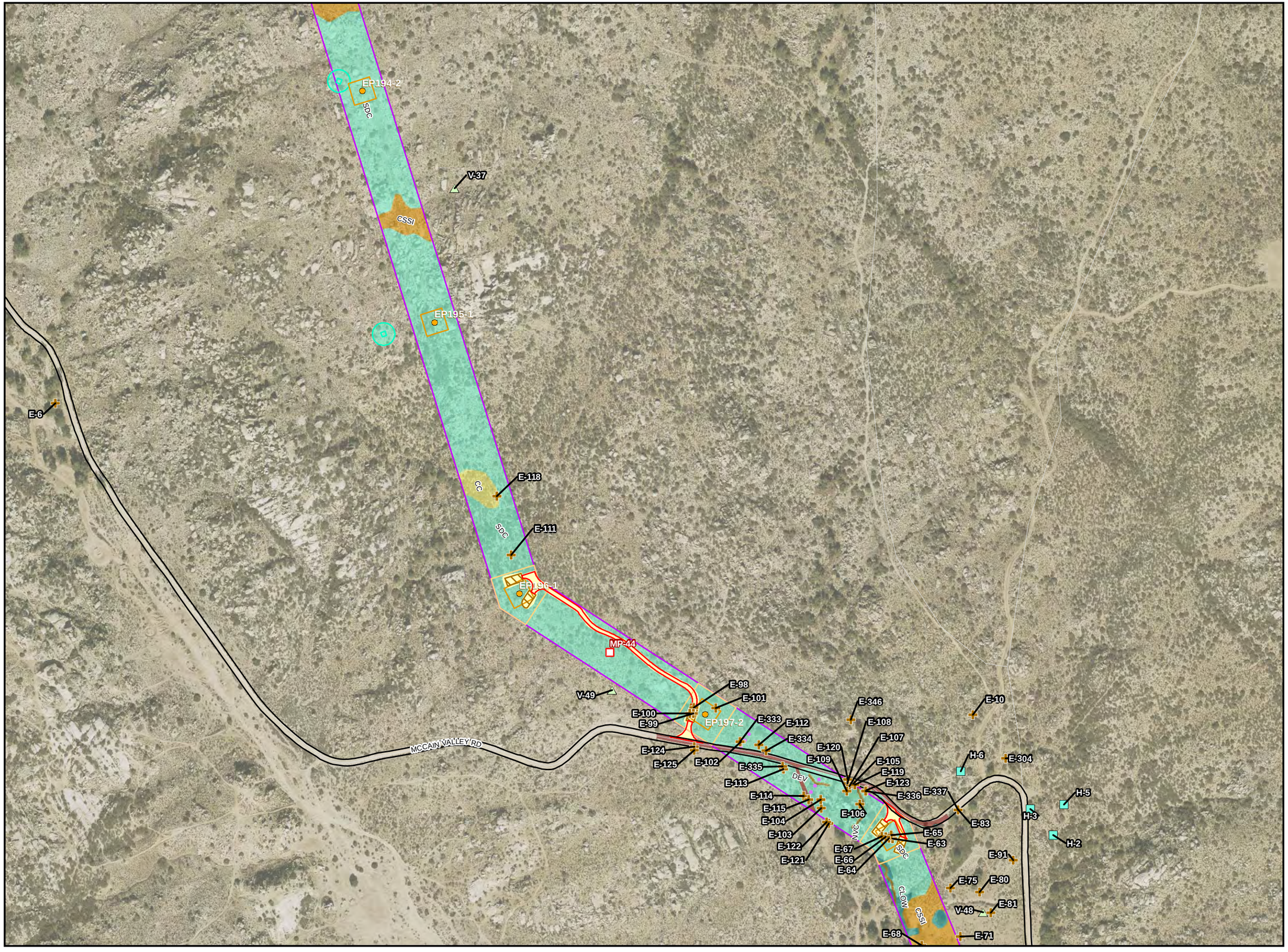
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-020 - 5/24/2010

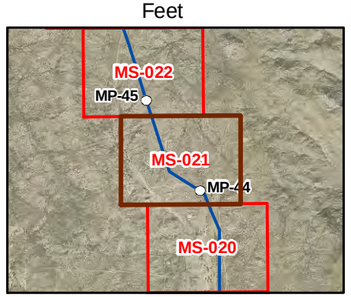


SUNRISE POWERLINK℠

- 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

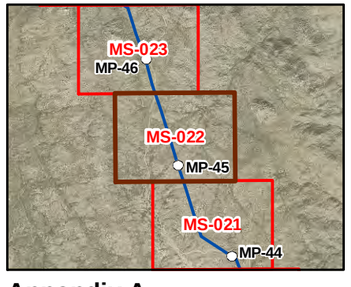
MS-021 - 5/24/2010

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

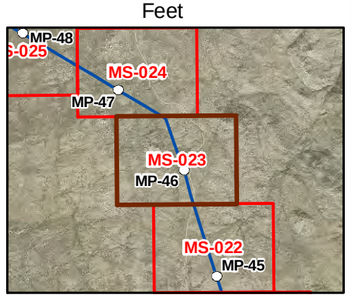
MS-022 - 5/24/2010

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

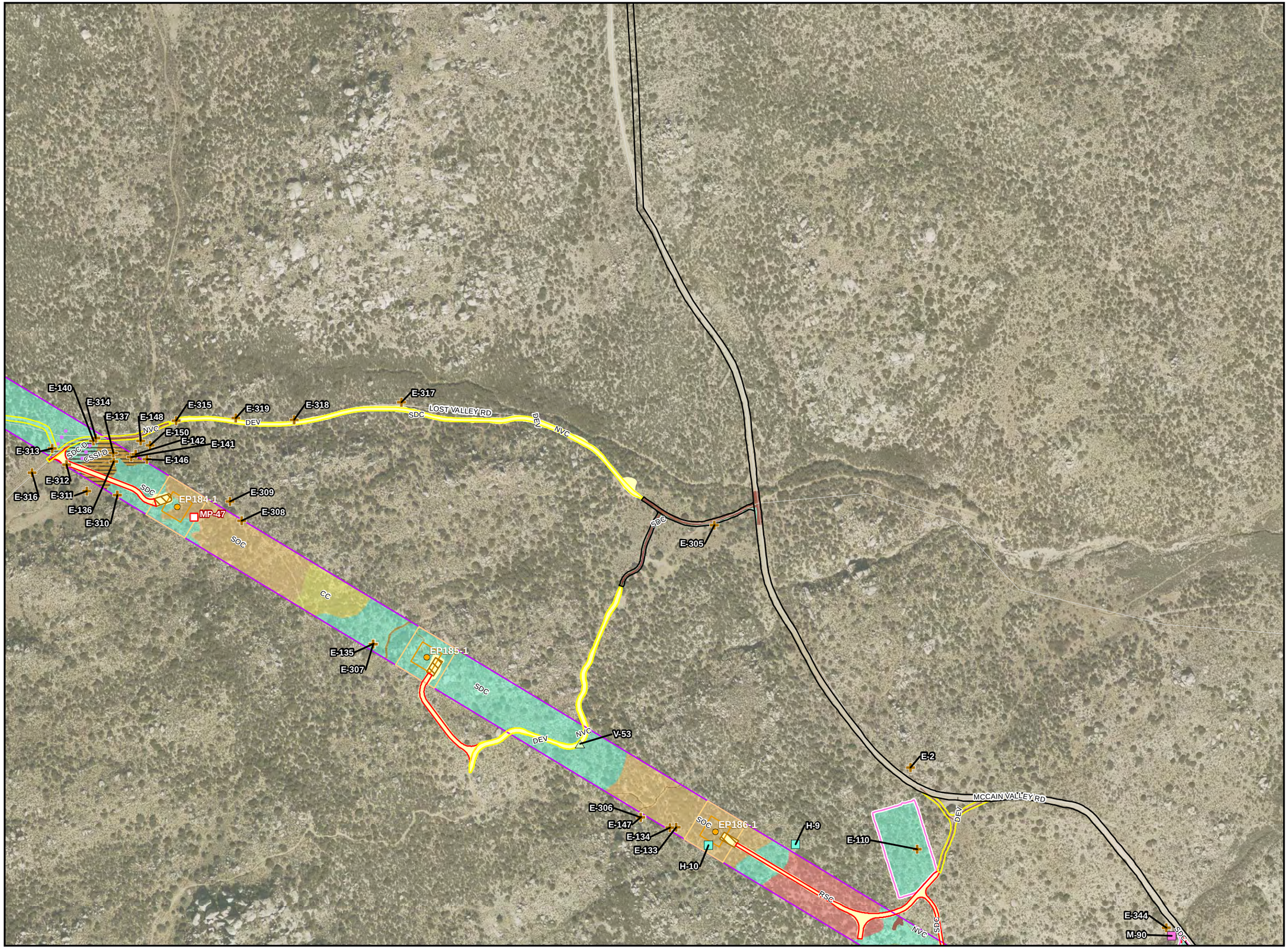
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-023 - 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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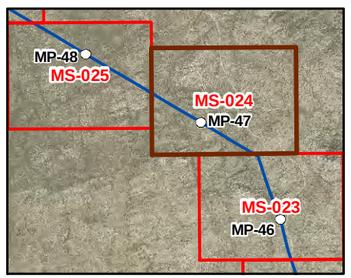
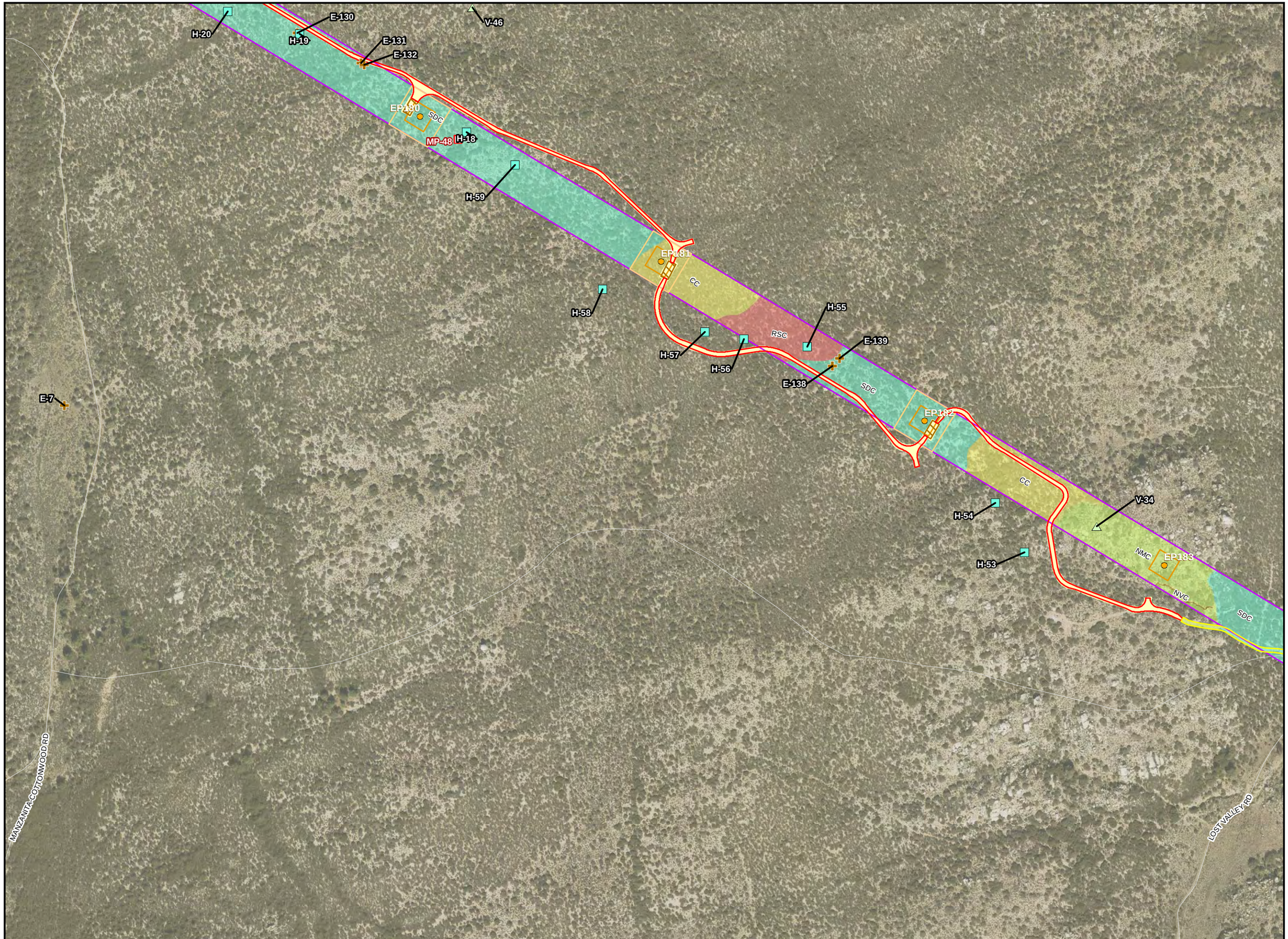
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



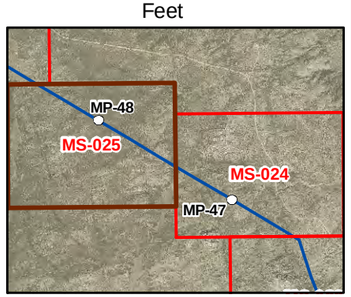
Appendix A
USFS Sensitive
Species Occurrences
MS-024 - 5/24/2010



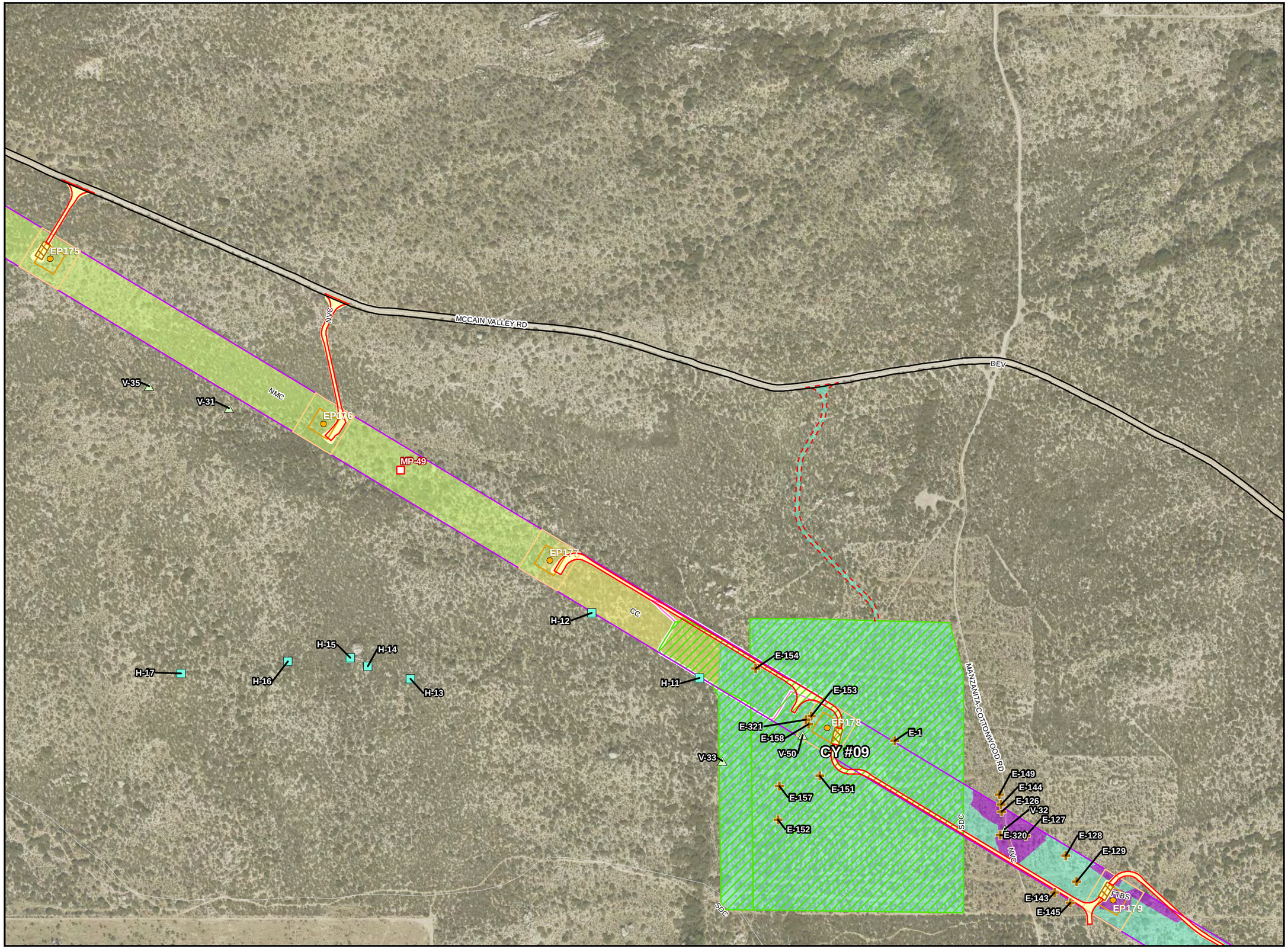
SUNRISE POWERLINK℠

- 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



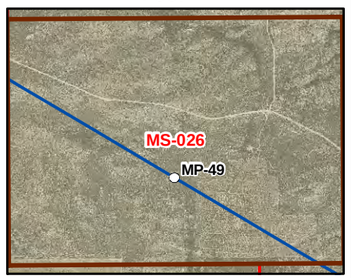
Appendix A
USFS Sensitive
Species Occurrences
MS-025 - 5/24/2010



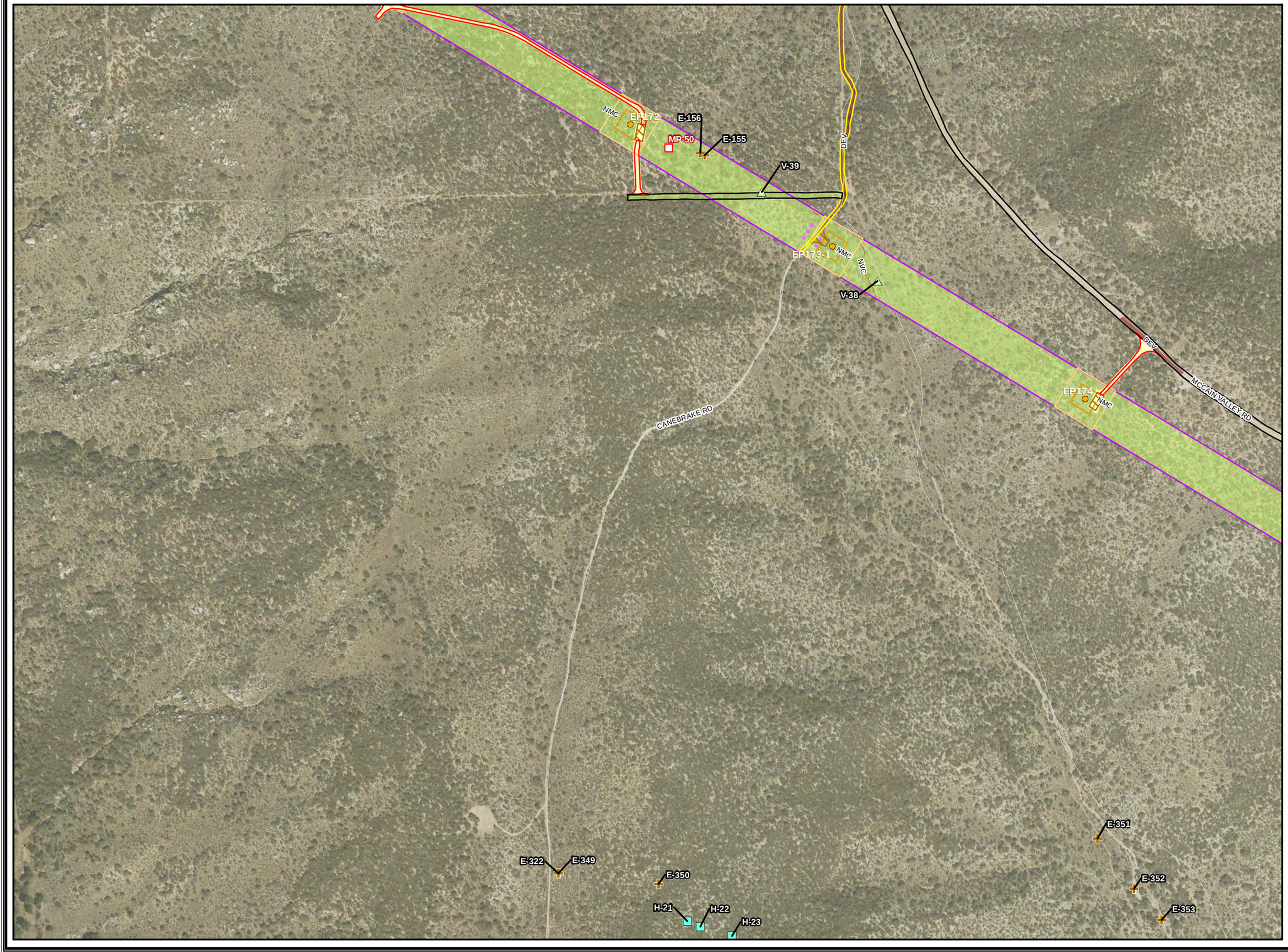
SUNRISE POWERLINK℠

- 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-026 - 5/24/2010

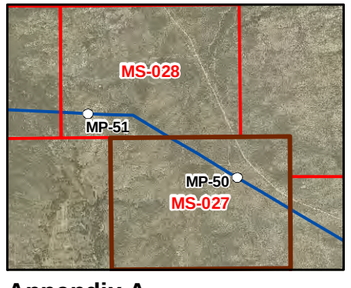


SUNRISE POWERLINK℠

- 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

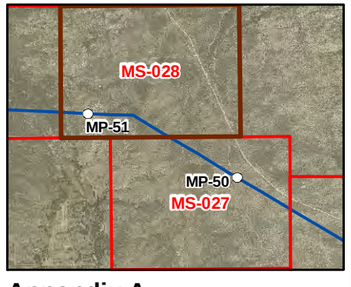
MS-027 - 5/24/2010

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

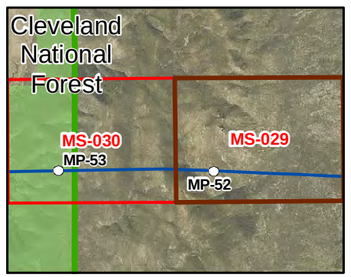
USFS Sensitive Species Occurrences

MS-028 - 5/24/2010

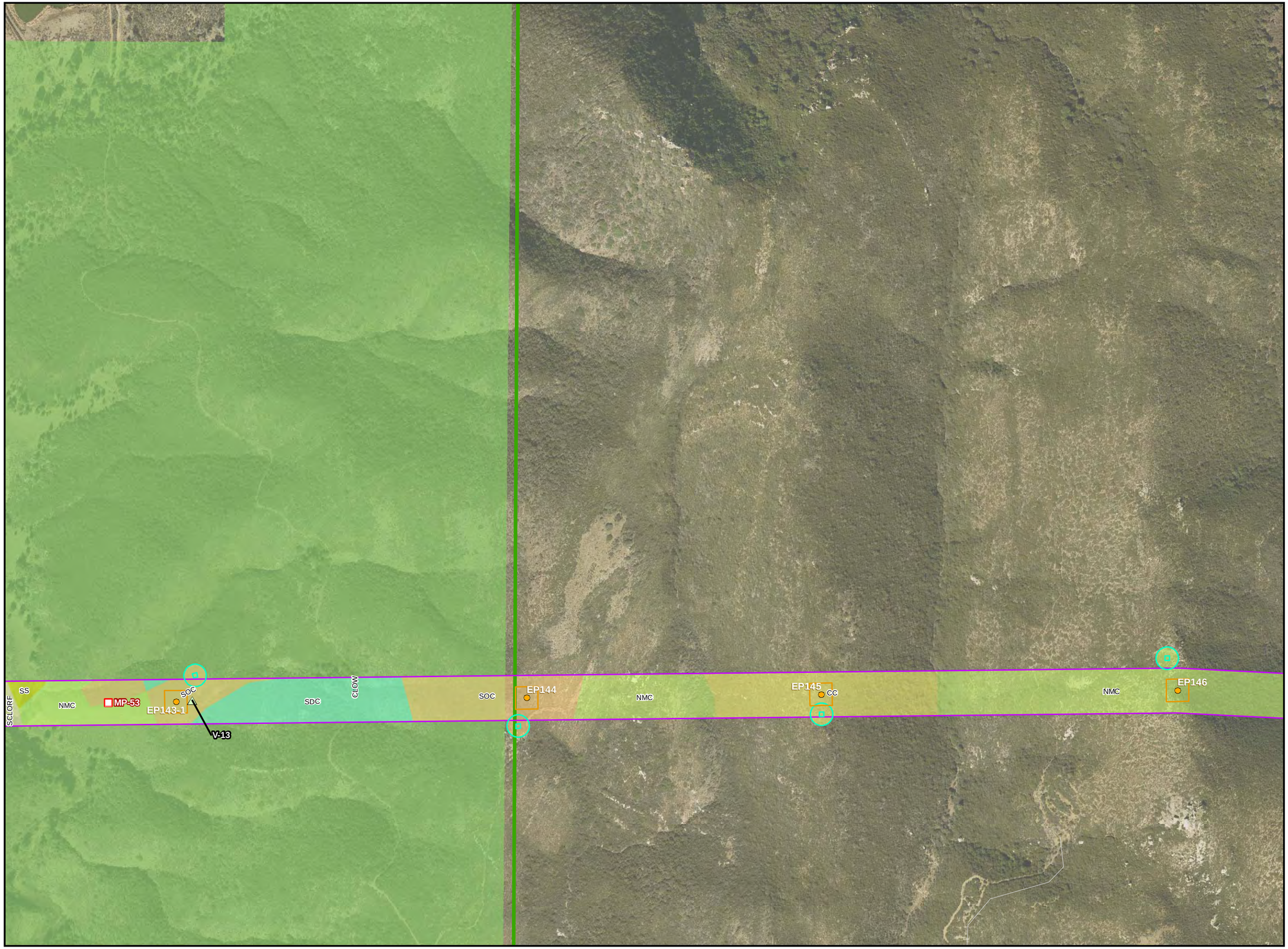
SUNRISE POWERLINK℠

- 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



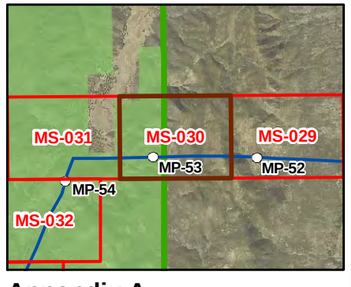
Appendix A
USFS Sensitive Species Occurrences
MS-029 - 5/24/2010



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



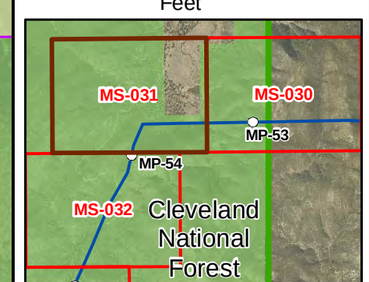
Appendix A
USFS Sensitive
Species Occurrences
MS-030 - 5/24/2010

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

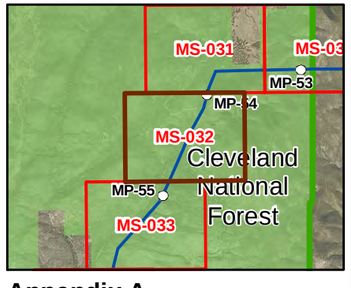
MS-031 - 5/24/2010

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

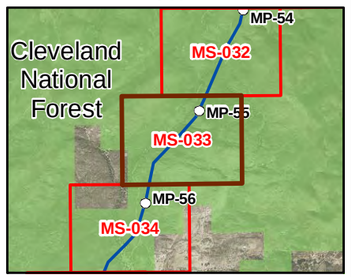
USFS Sensitive Species Occurrences

MS-032 - 5/24/2010

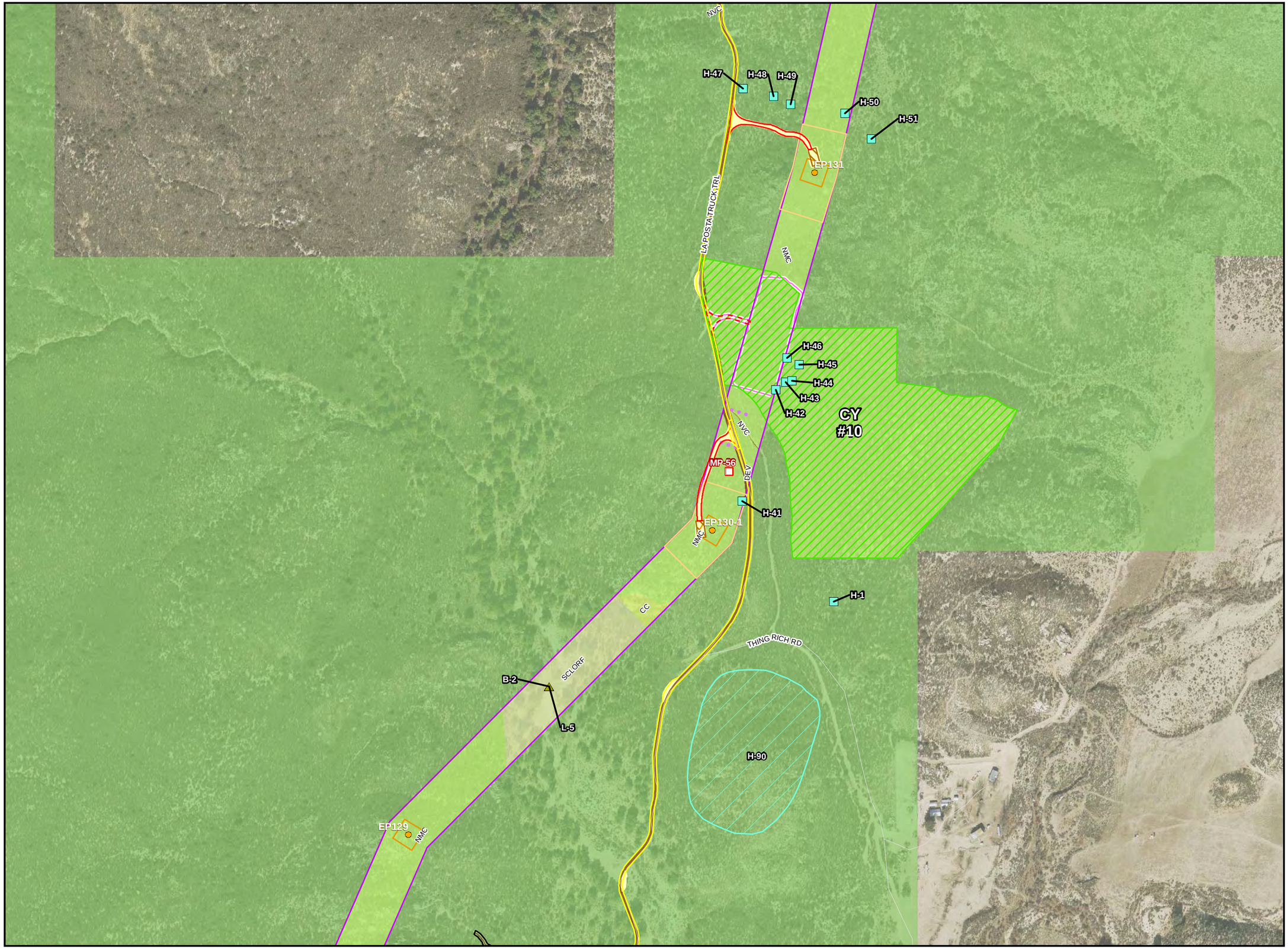
SUNRISE POWERLINK℠

- 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-033 - 5/24/2010

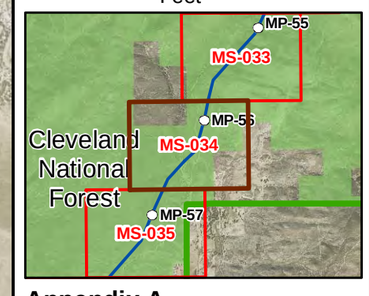


SUNRISE POWERLINK℠

- 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

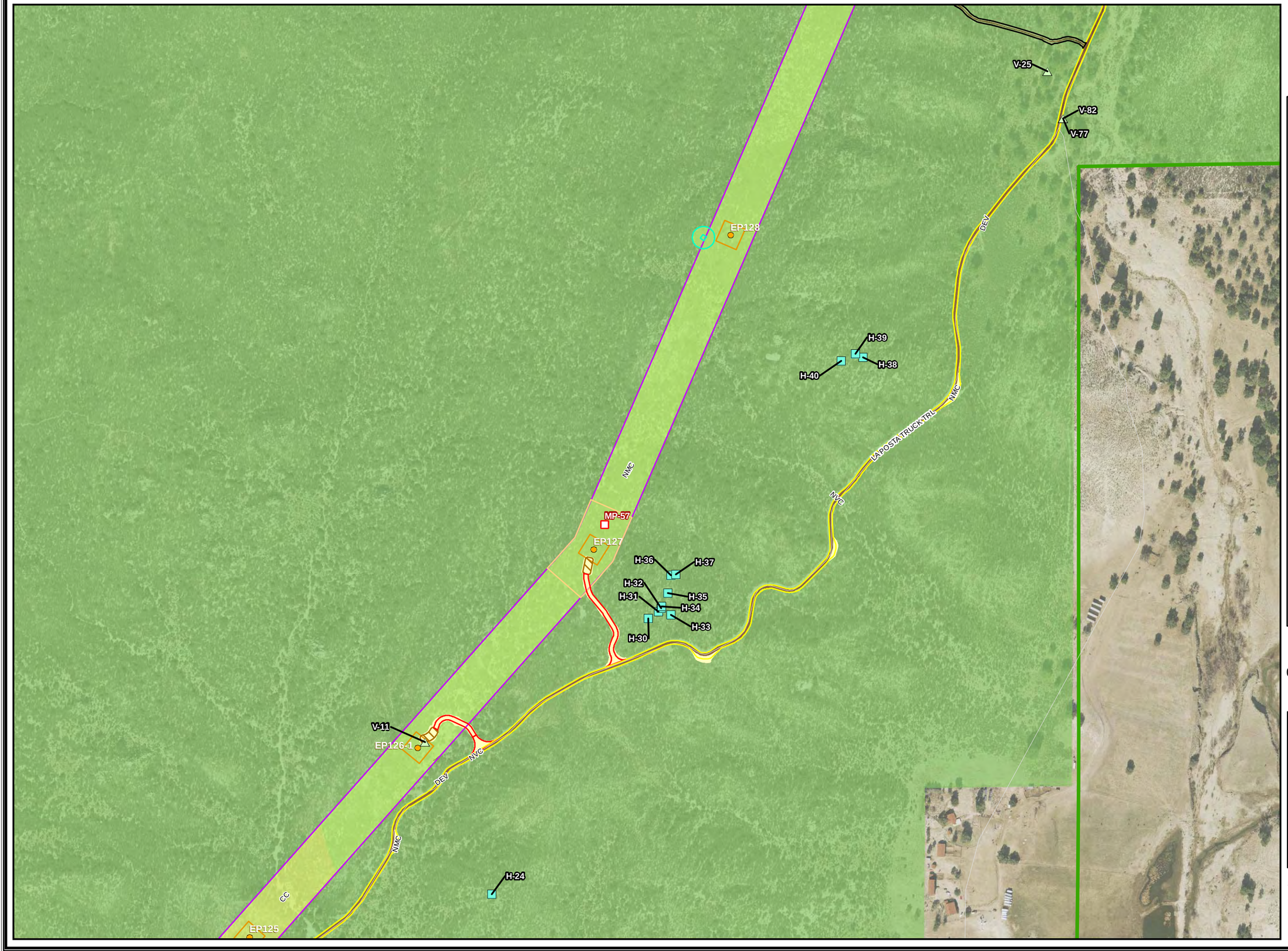
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-034 - 5/24/2010

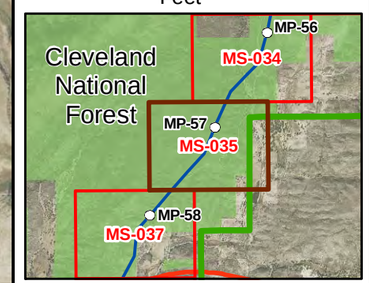


SUNRISE POWERLINK℠

- 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

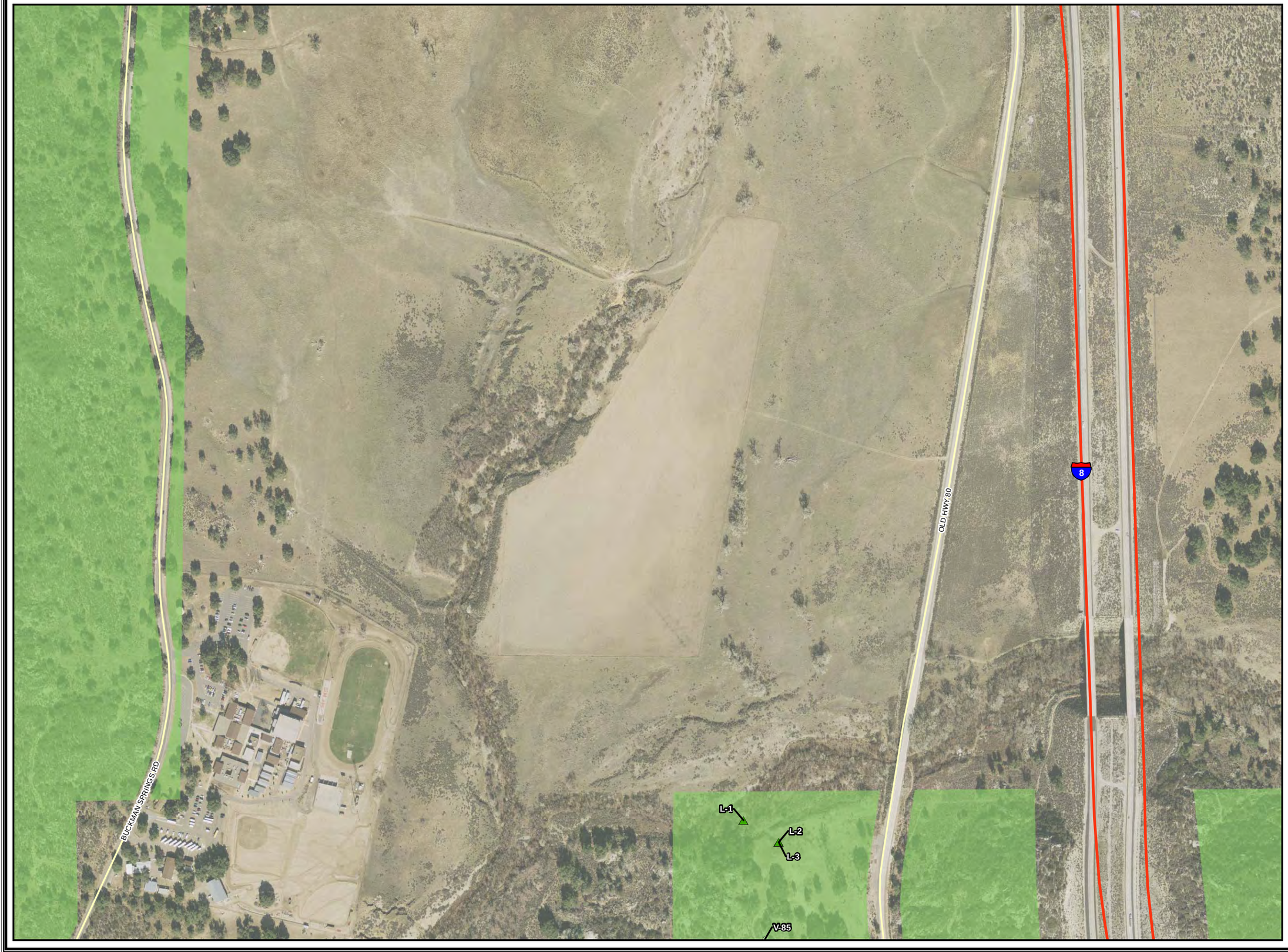
Feet



Appendix A

USFS Sensitive Species Occurrences

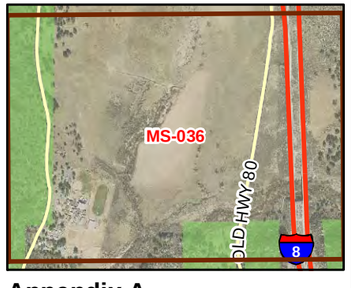
MS-035 - 5/24/2010



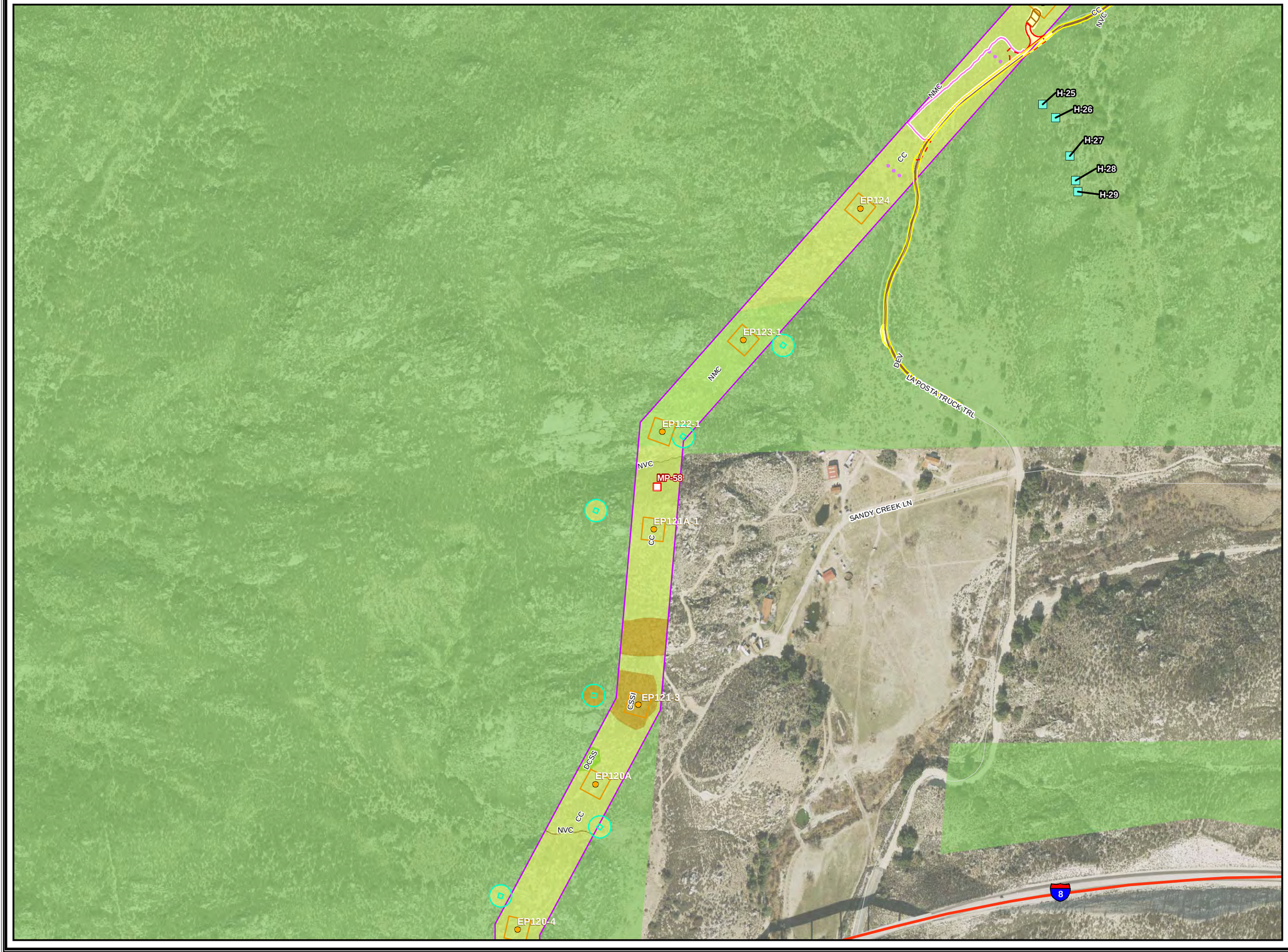
SUNRISE POWERLINK℠

- 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



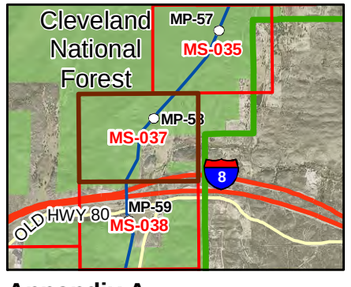
Appendix A
USFS Sensitive
Species Occurrences
MS-036 - 5/24/2010



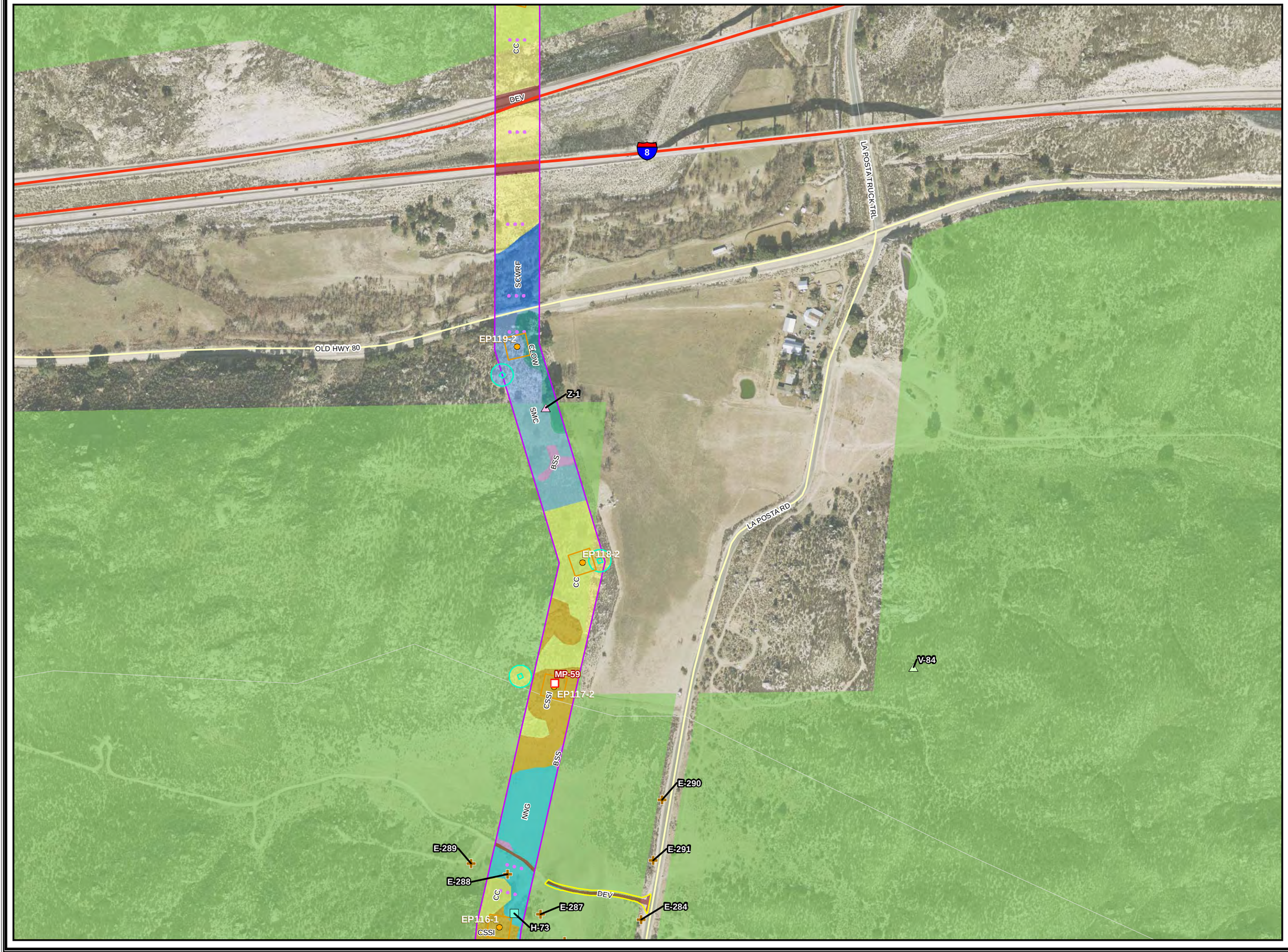
SUNRISE POWERLINK℠

- 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-037 - 5/24/2010

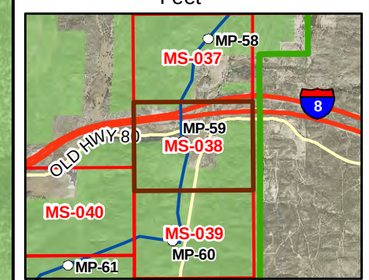


SUNRISE POWERLINK℠

- 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

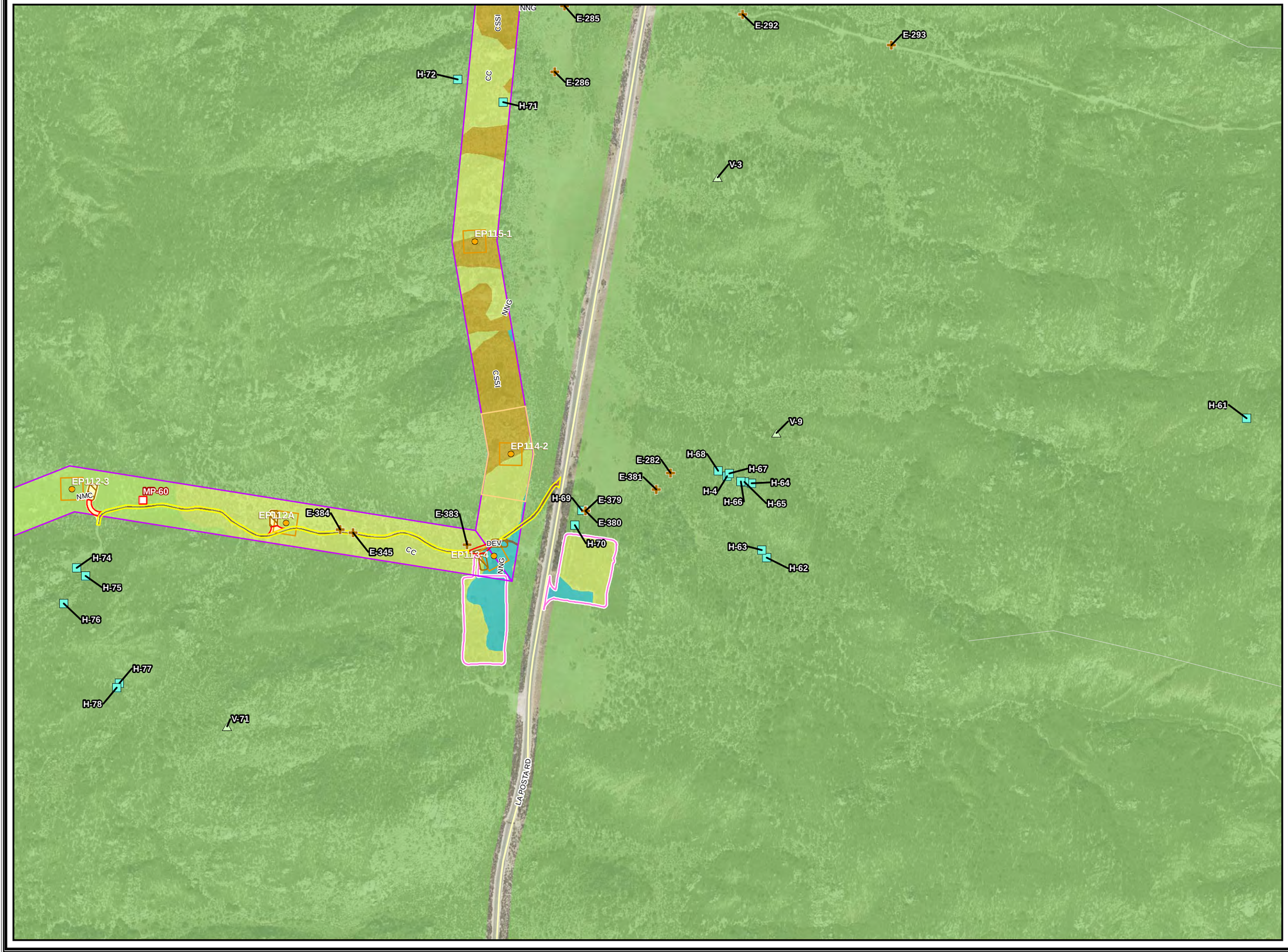
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-038 - 5/24/2010

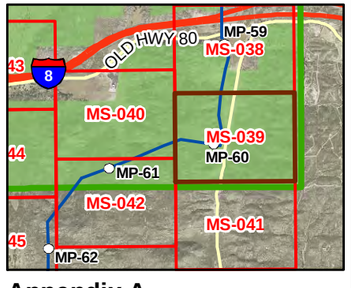


SUNRISE POWERLINK℠

- 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

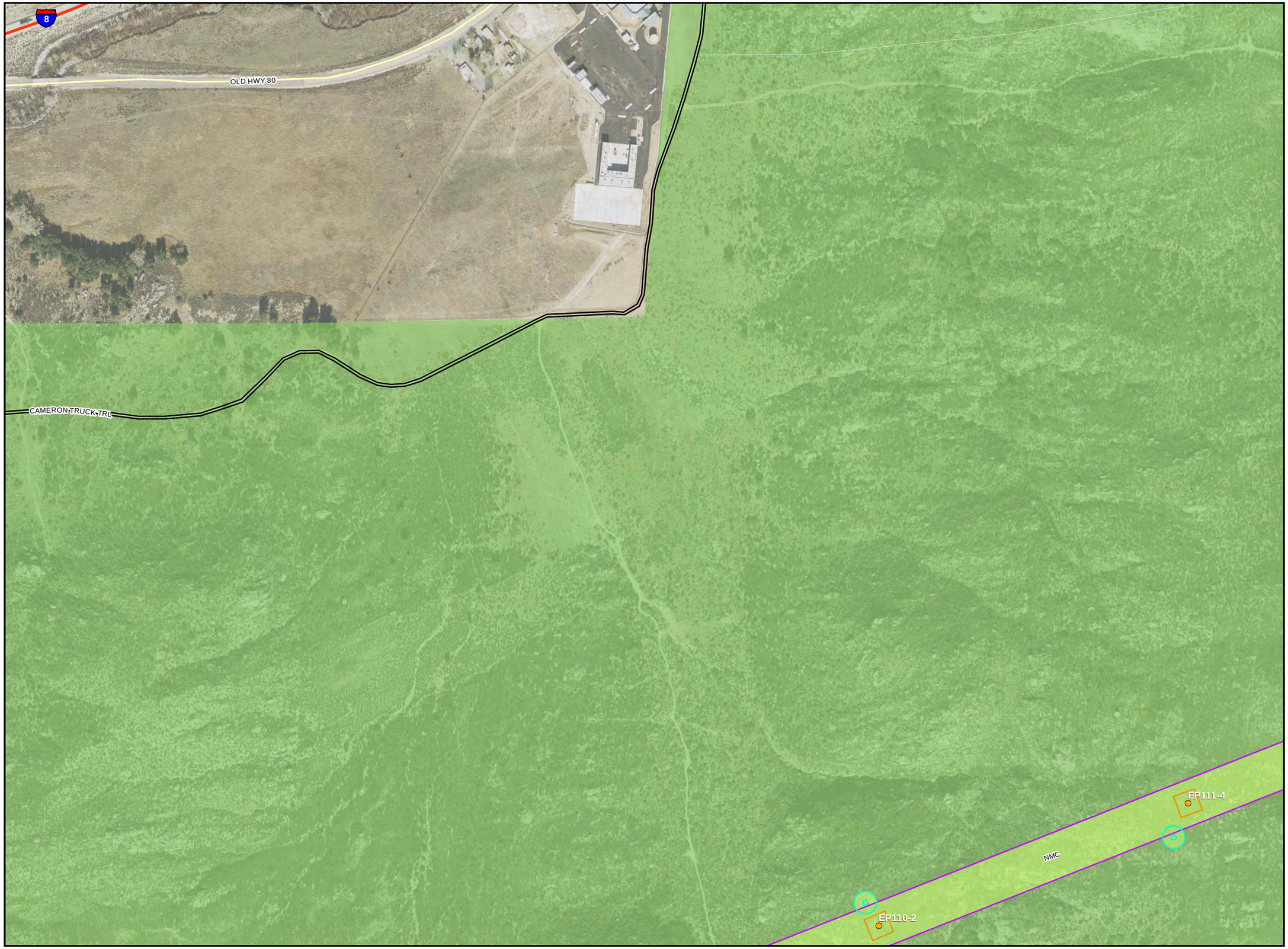
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-039 - 5/24/2010

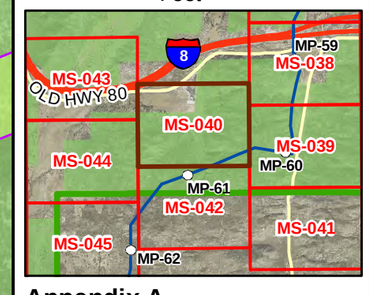


SUNRISE POWERLINK℠

- 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

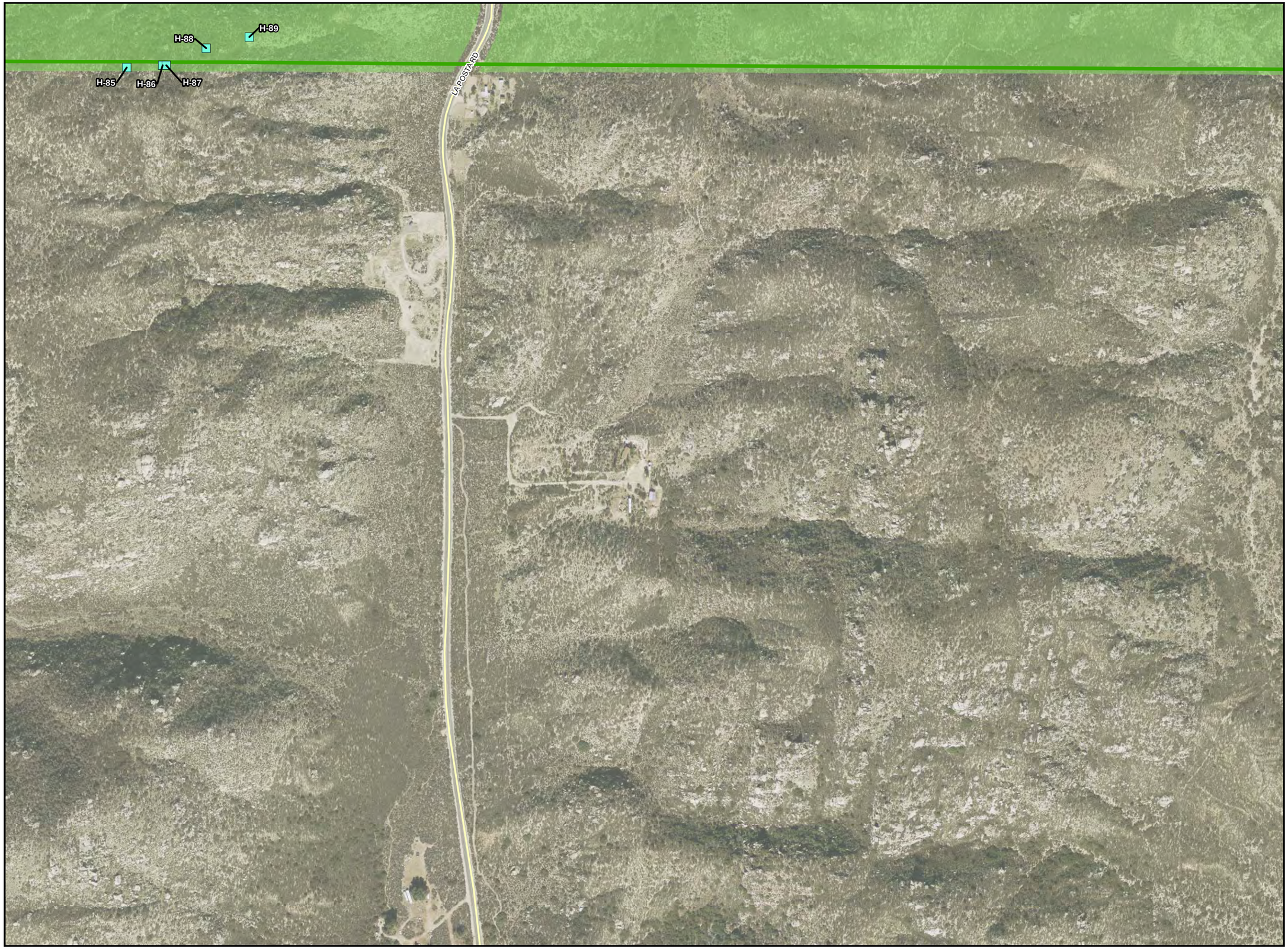
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-040 - 5/24/2010

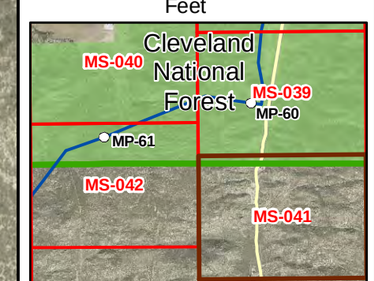


SUNRISE POWERLINK℠

- 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

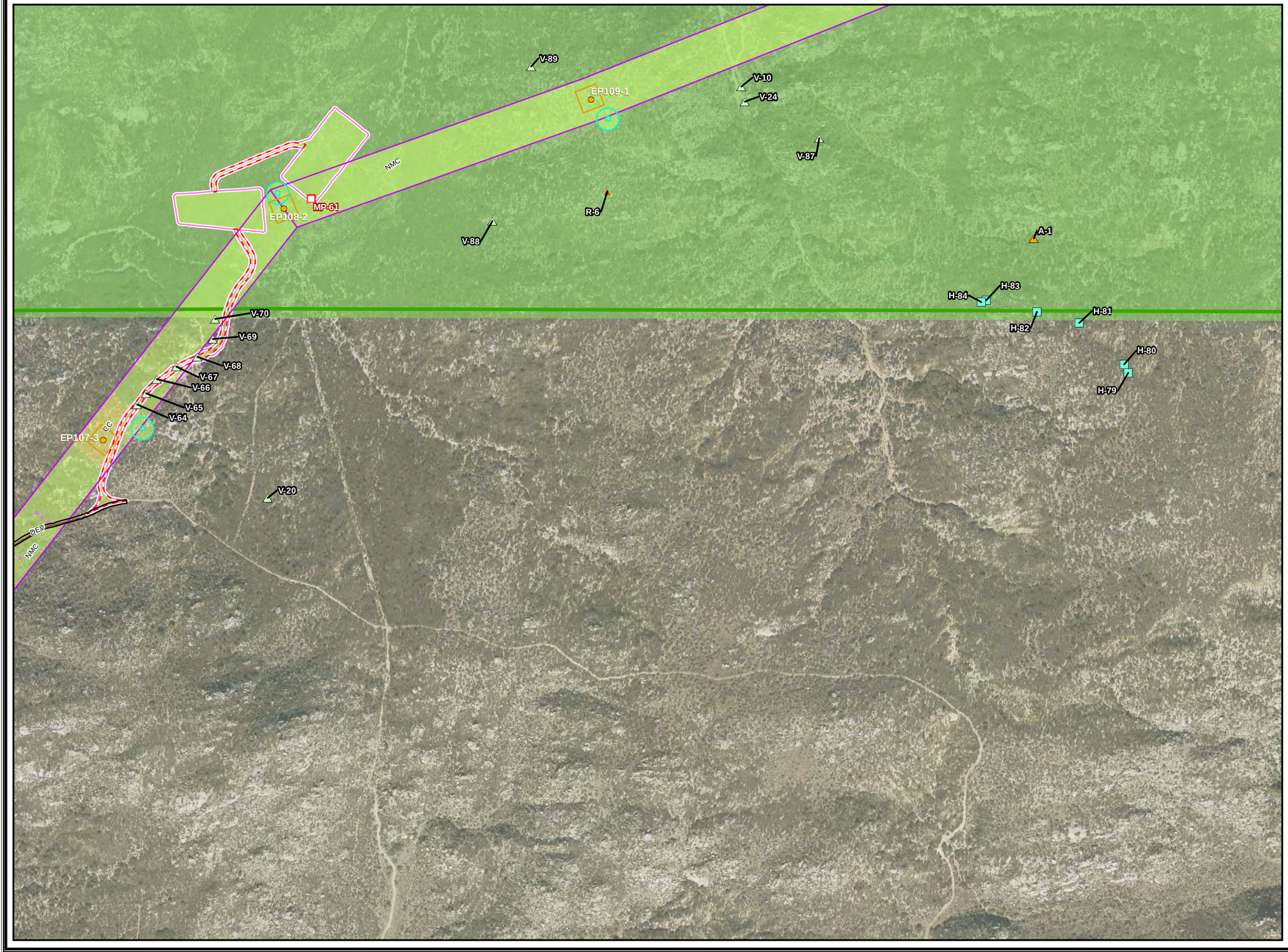
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-041 - 5/24/2010

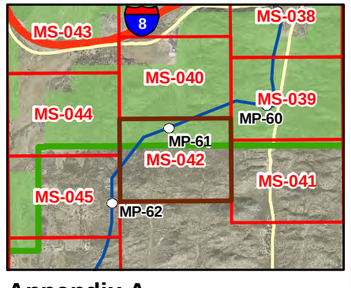


SUNRISE POWERLINK℠

- 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

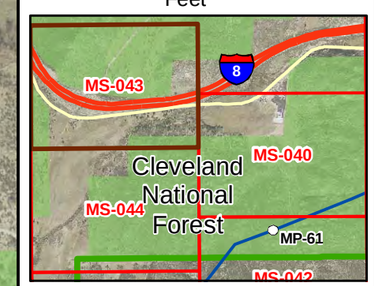
USFS Sensitive Species Occurrences

MS-042 - 5/24/2010

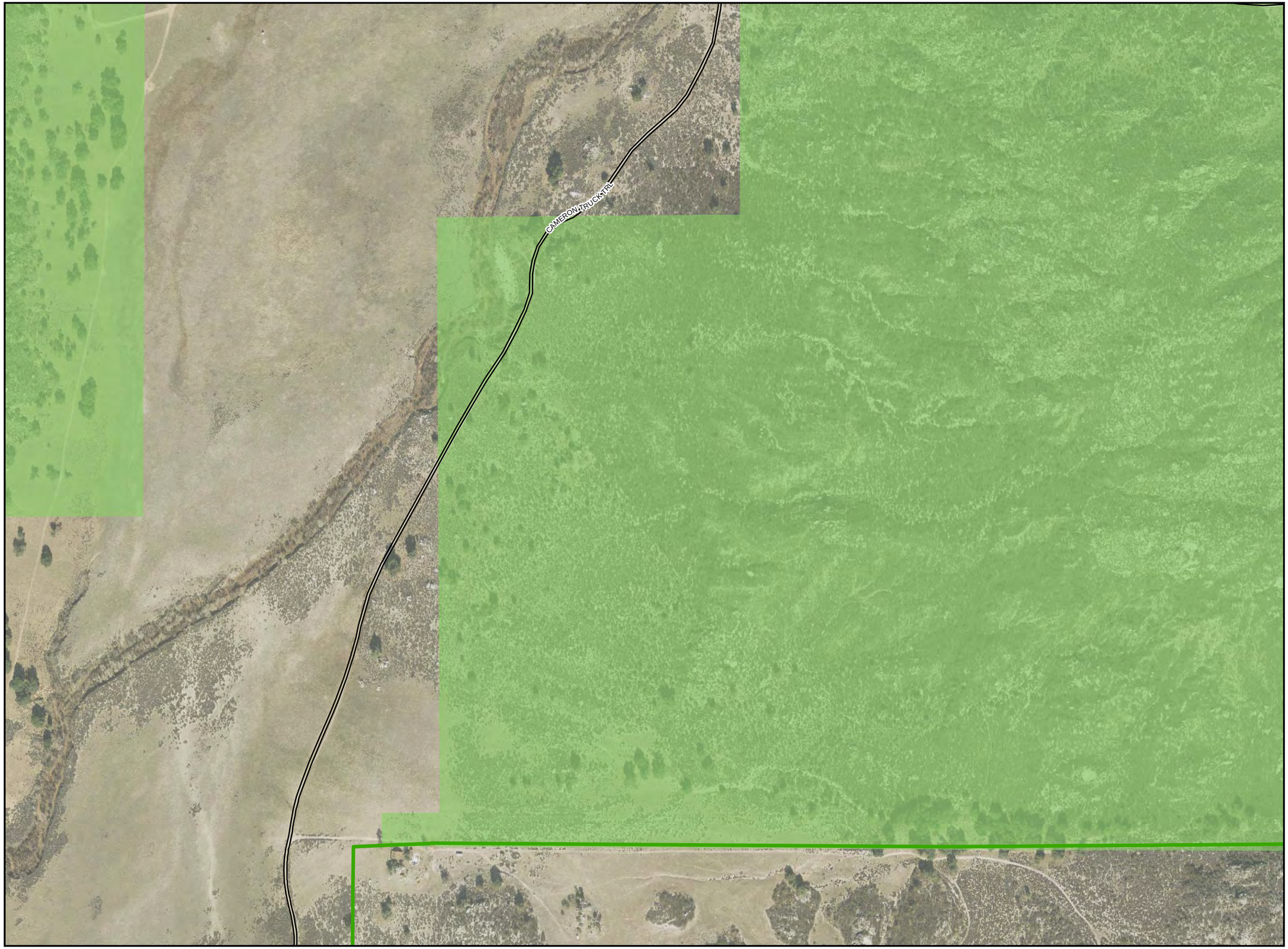
SUNRISE POWERLINK℠

- 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-043 - 5/24/2010

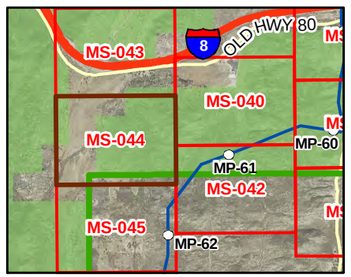


SUNRISE POWERLINK℠

- 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

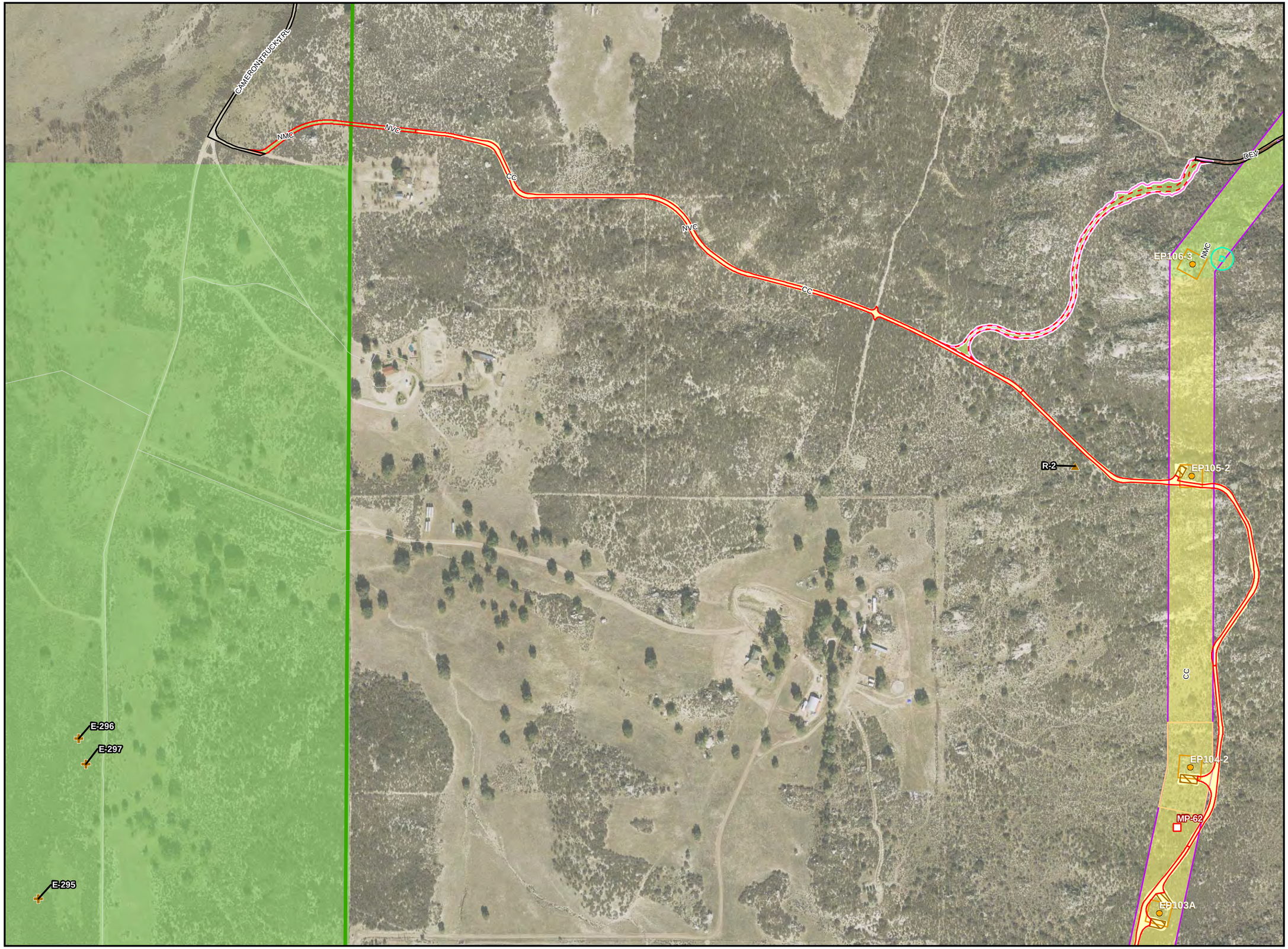
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-044 - 5/24/2010

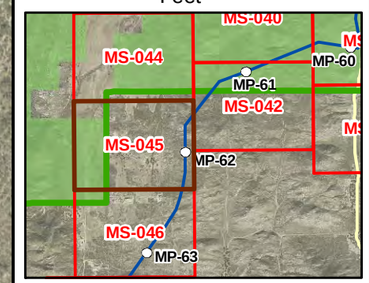


SUNRISE POWERLINK℠

- 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

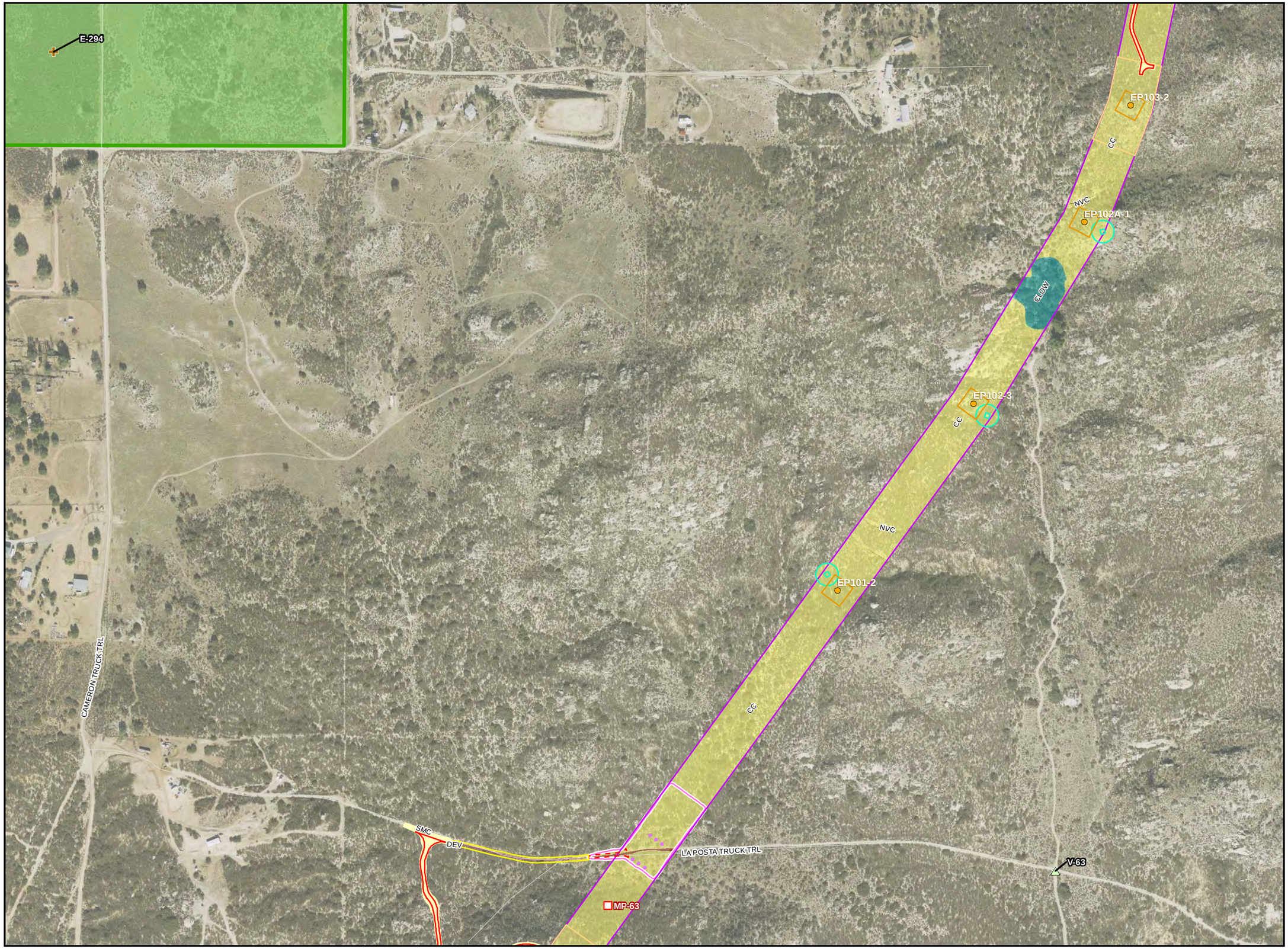
Feet



Appendix A

USFS Sensitive Species Occurrences

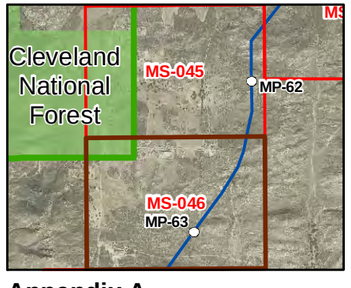
MS-045 - 5/24/2010



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



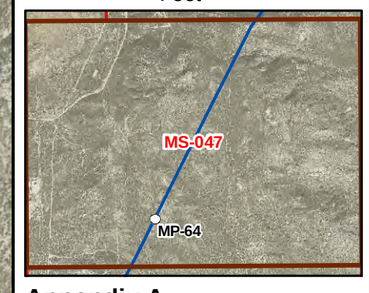
Appendix A
USFS Sensitive Species Occurrences
MS-046 - 5/24/2010

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

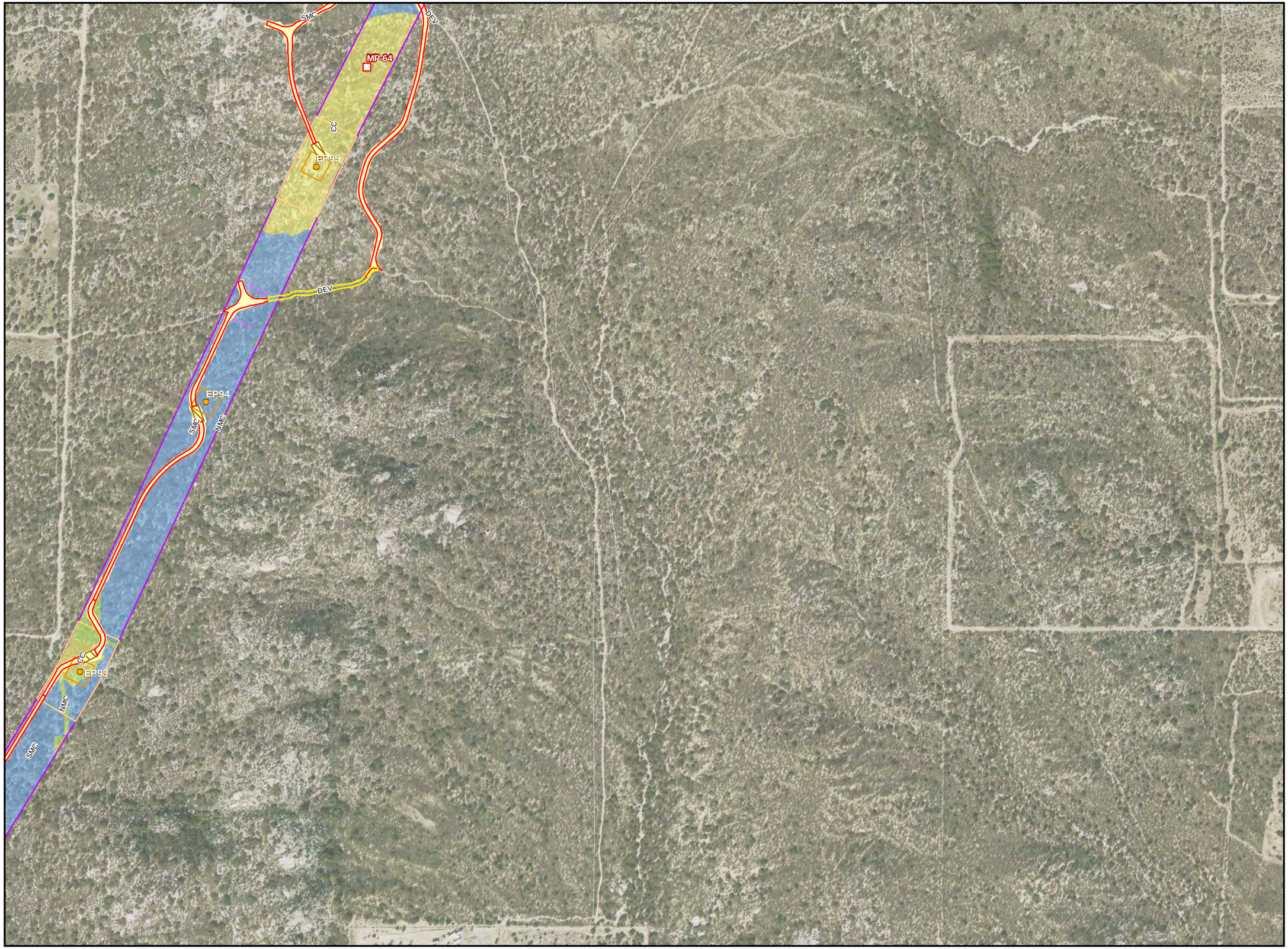
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-047 - 5/24/2010

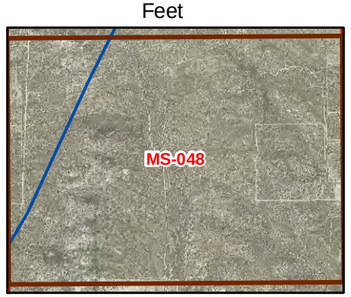


SUNRISE POWERLINK℠

- 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

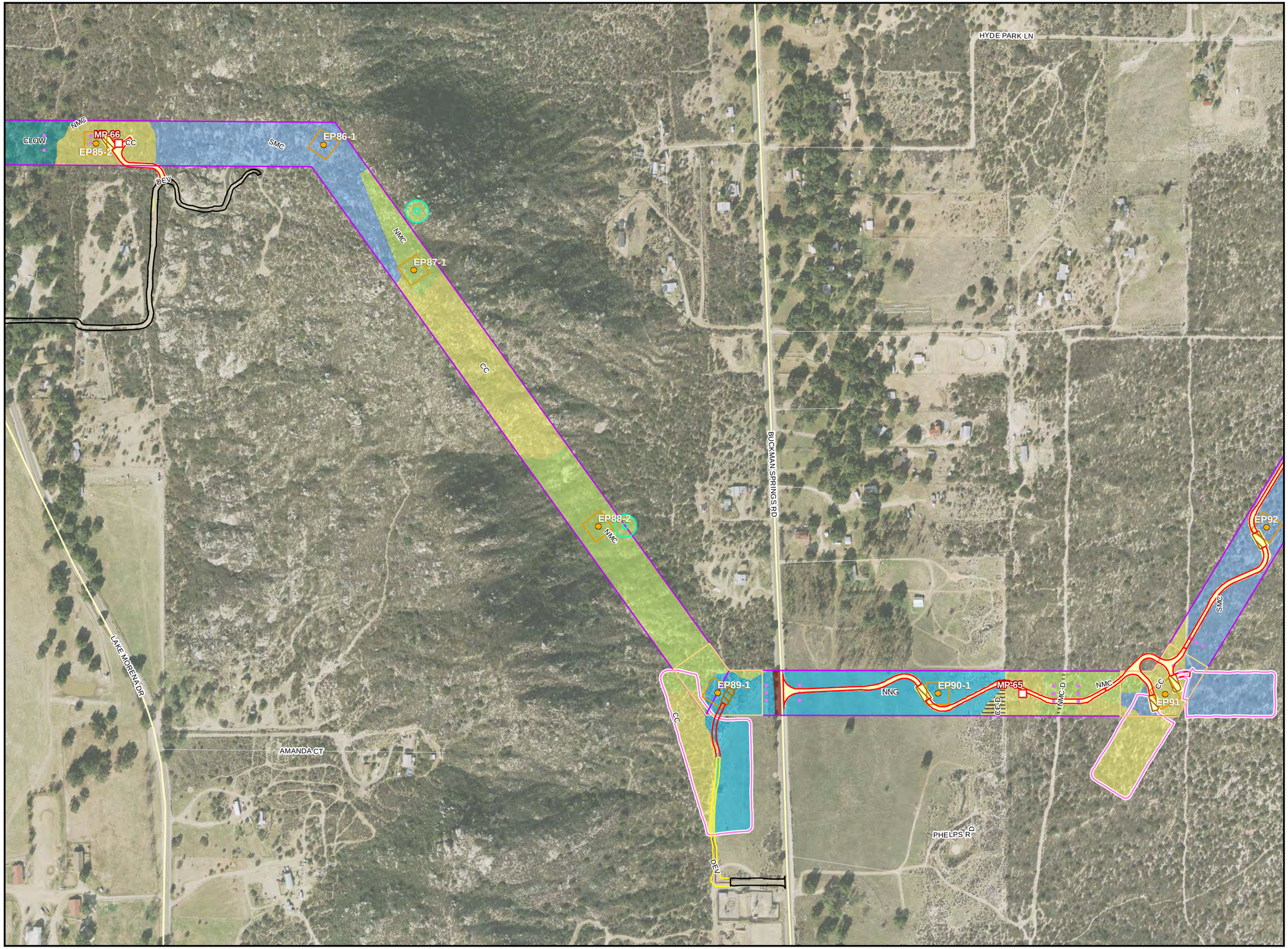
Feet



Appendix A

USFS Sensitive Species Occurrences

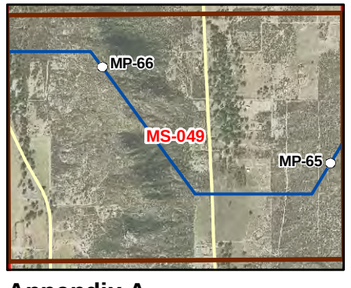
MS-048 - 5/24/2010



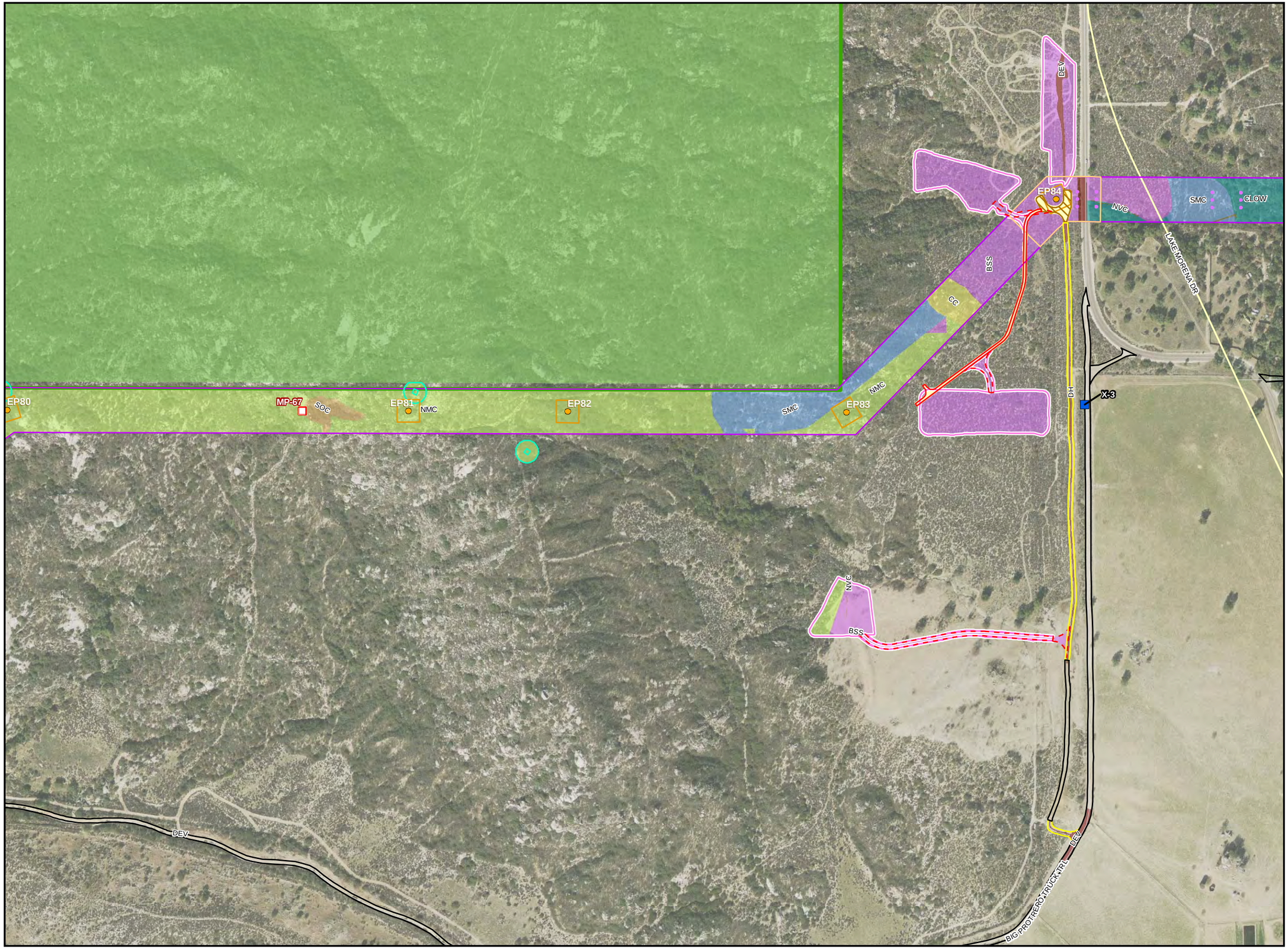
SUNRISE POWERLINK℠

- 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-049 - 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
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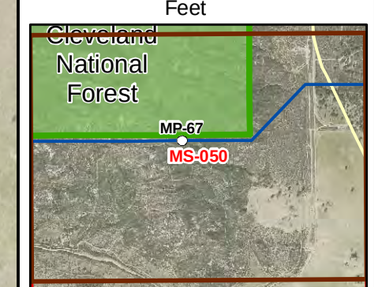
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

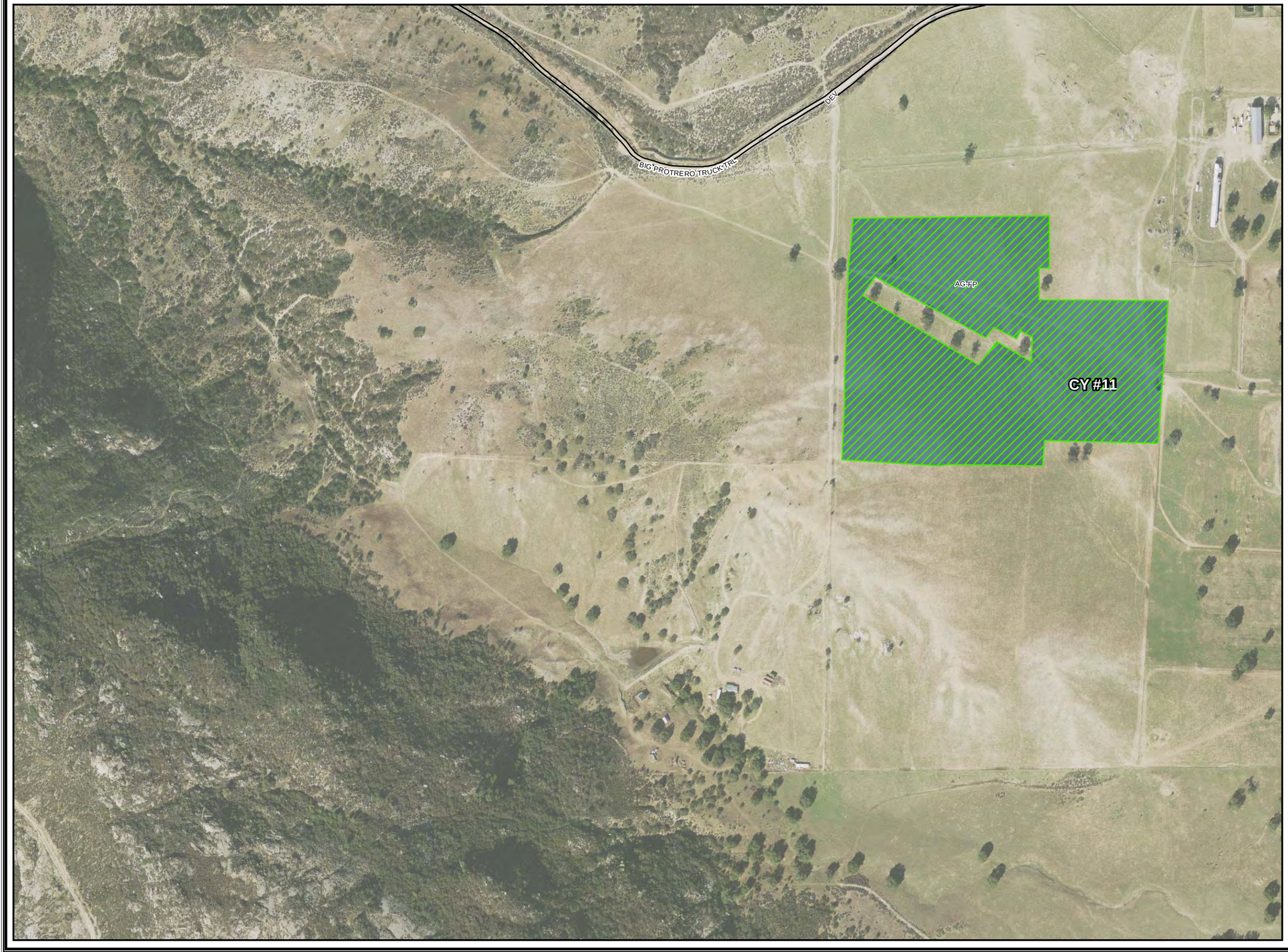
Feet



Appendix A

USFS Sensitive Species Occurrences

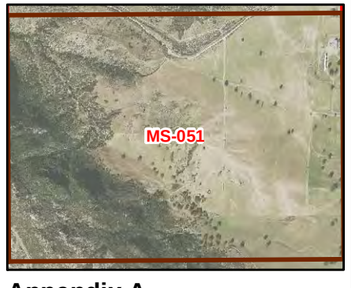
MS-050 - 5/24/2010



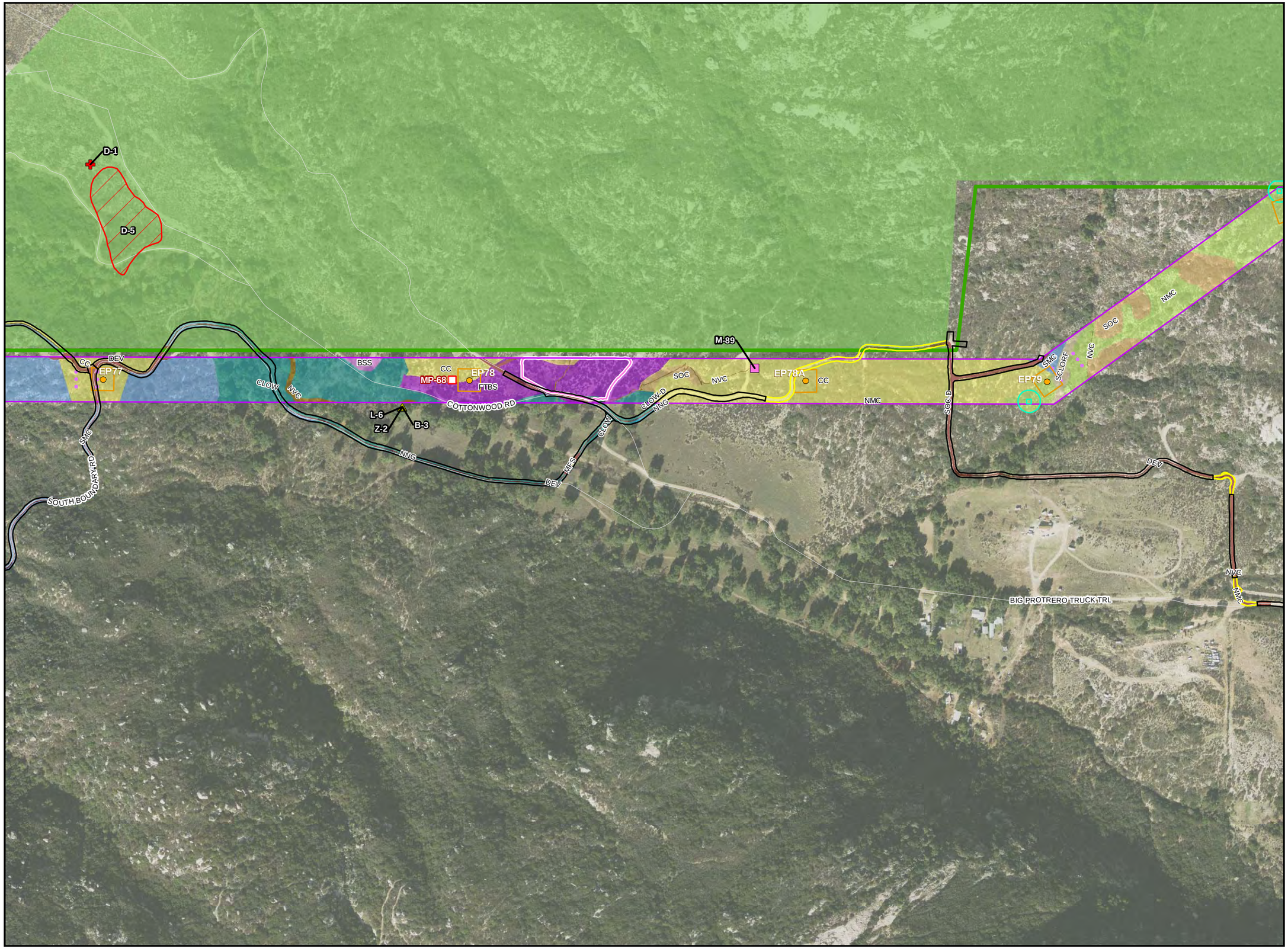
SUNRISE POWERLINK℠

- 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-051 - 5/24/2010

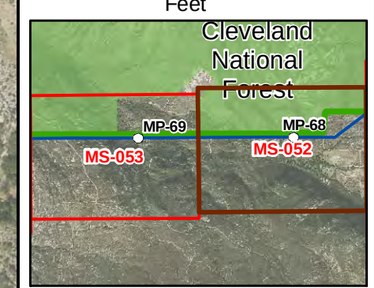


SUNRISE POWERLINK℠

- 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

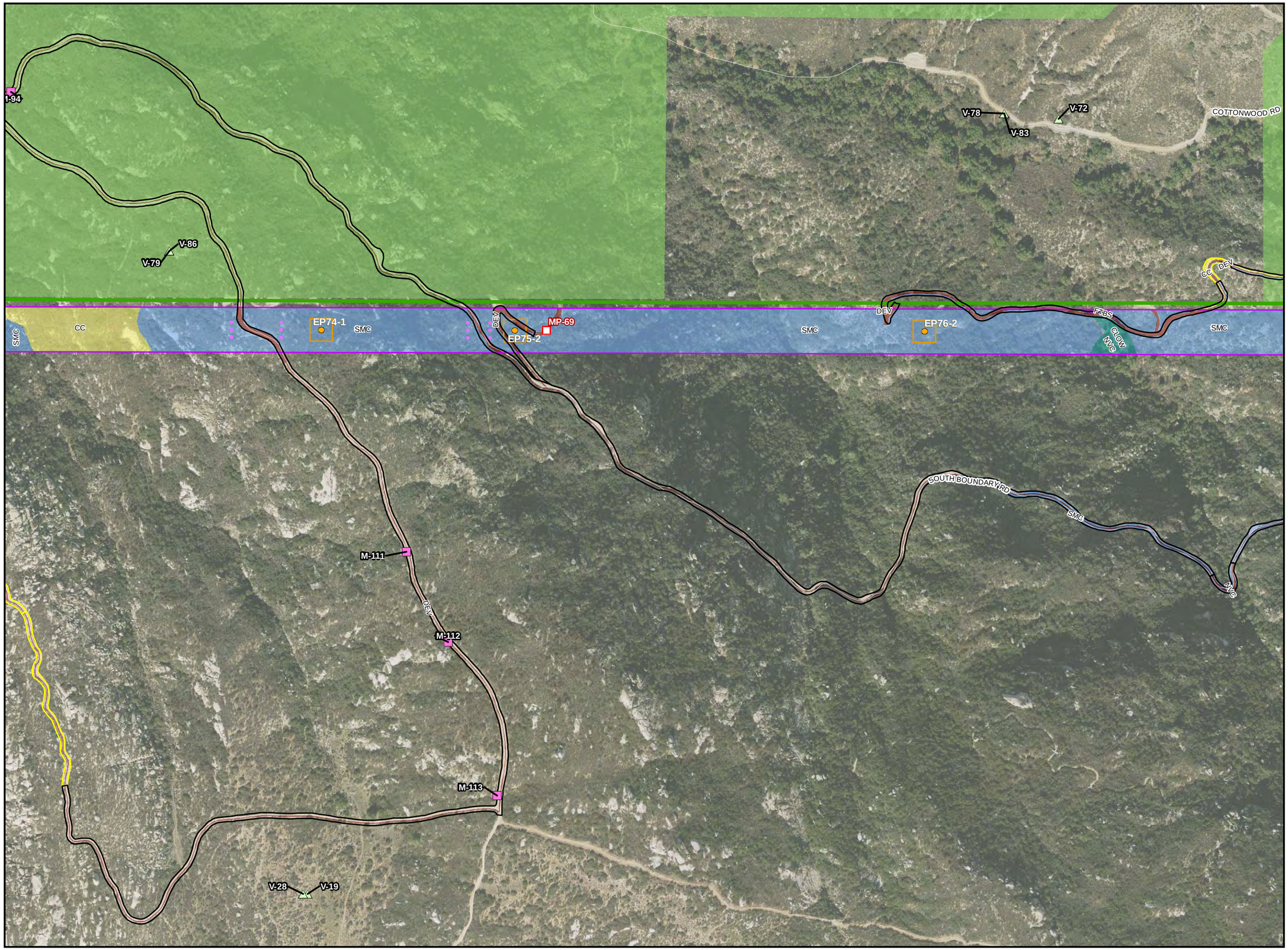
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-052 - 5/24/2010

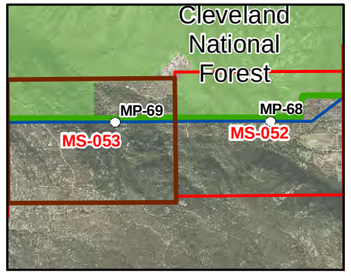


SUNRISE POWERLINK℠

- 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

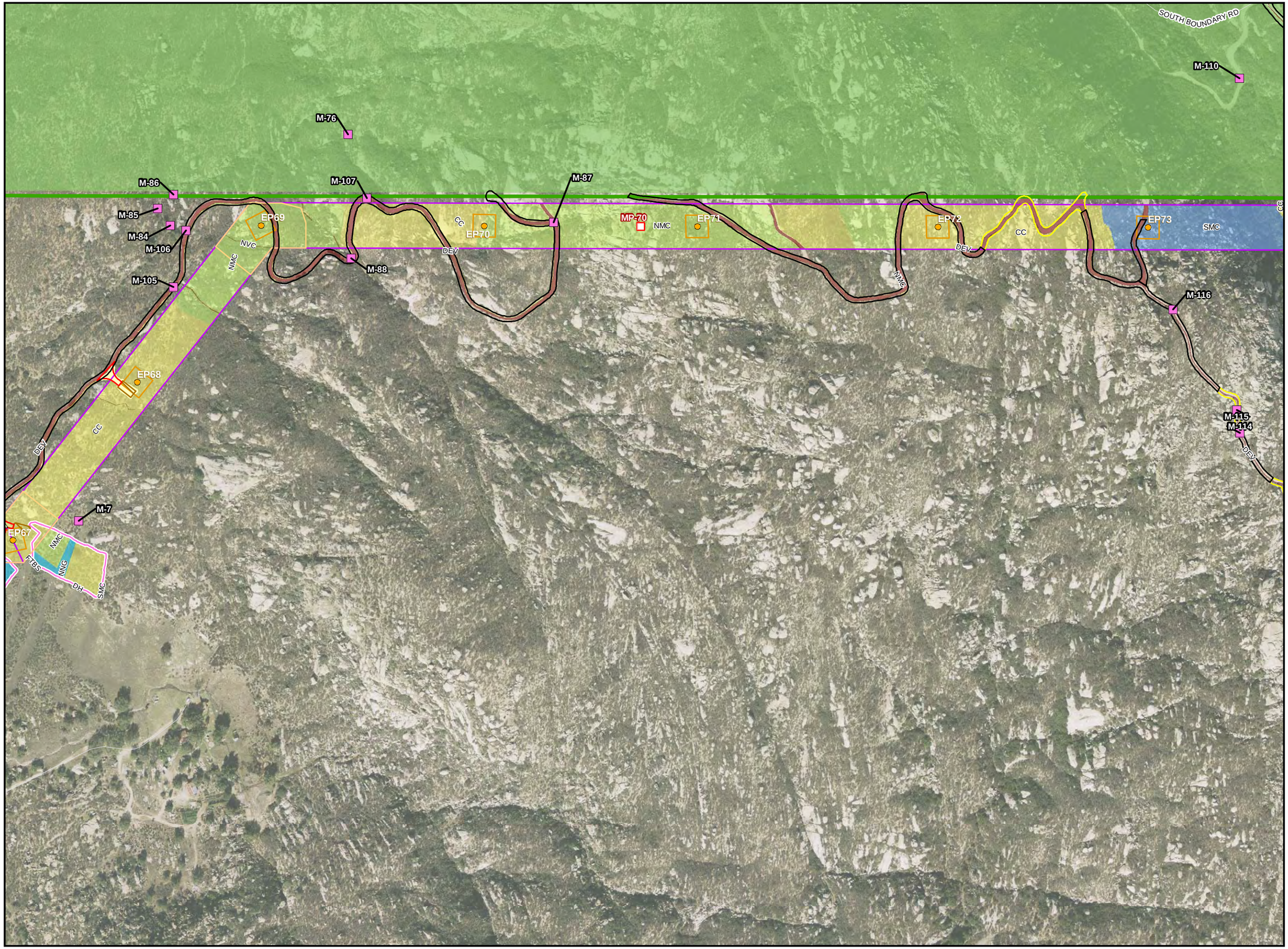
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-053 - 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
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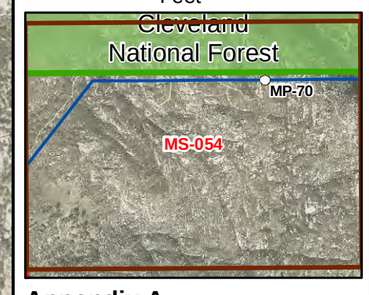
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

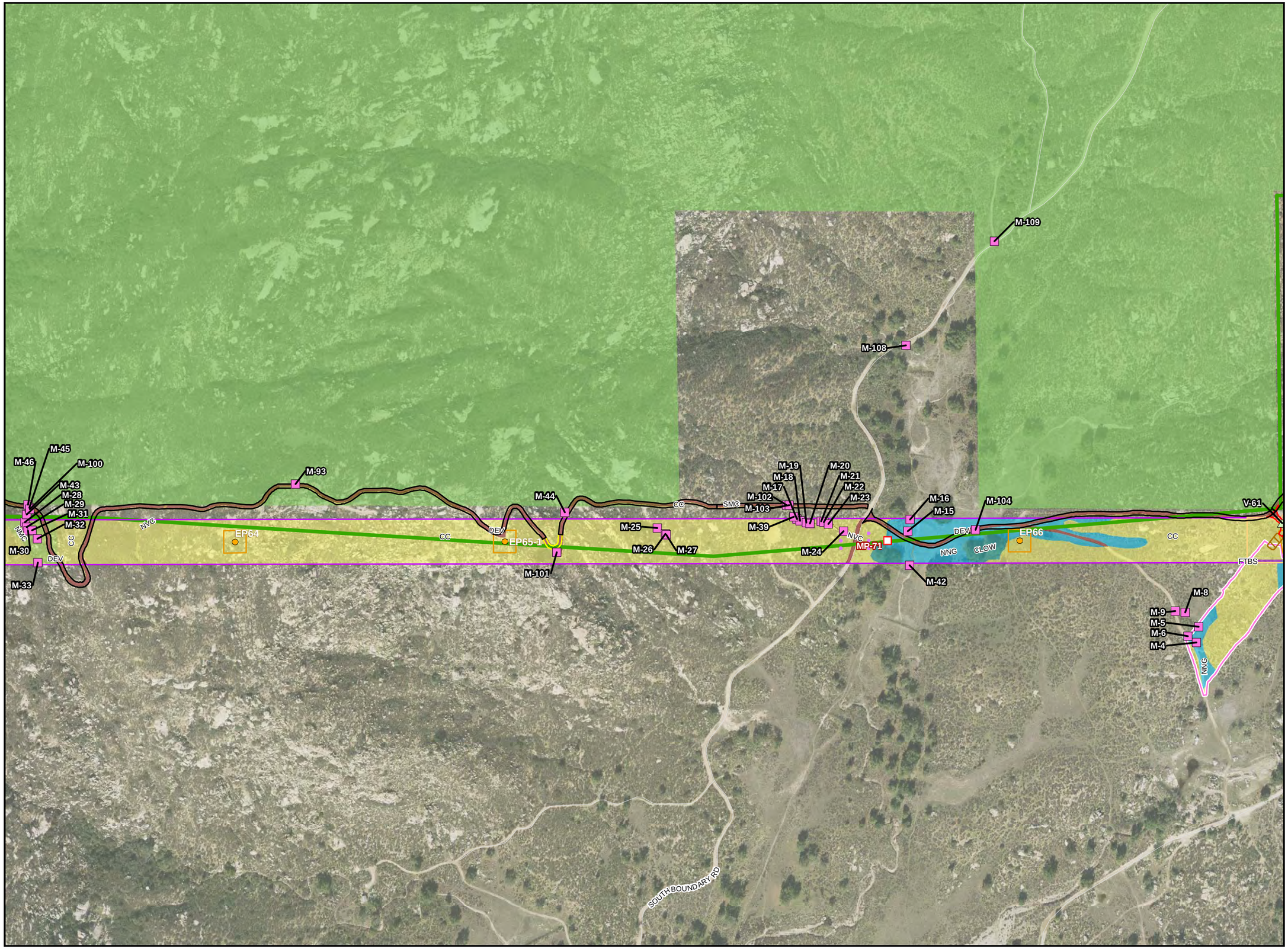
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-054 - 5/24/2010

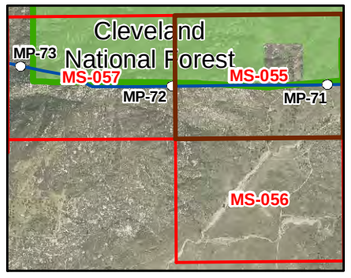


SUNRISE POWERLINK℠

- 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

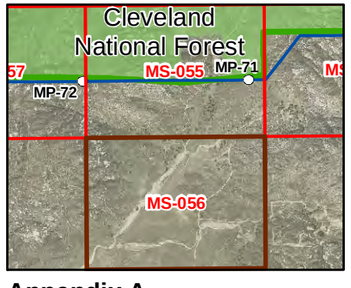
MS-055 - 5/24/2010

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

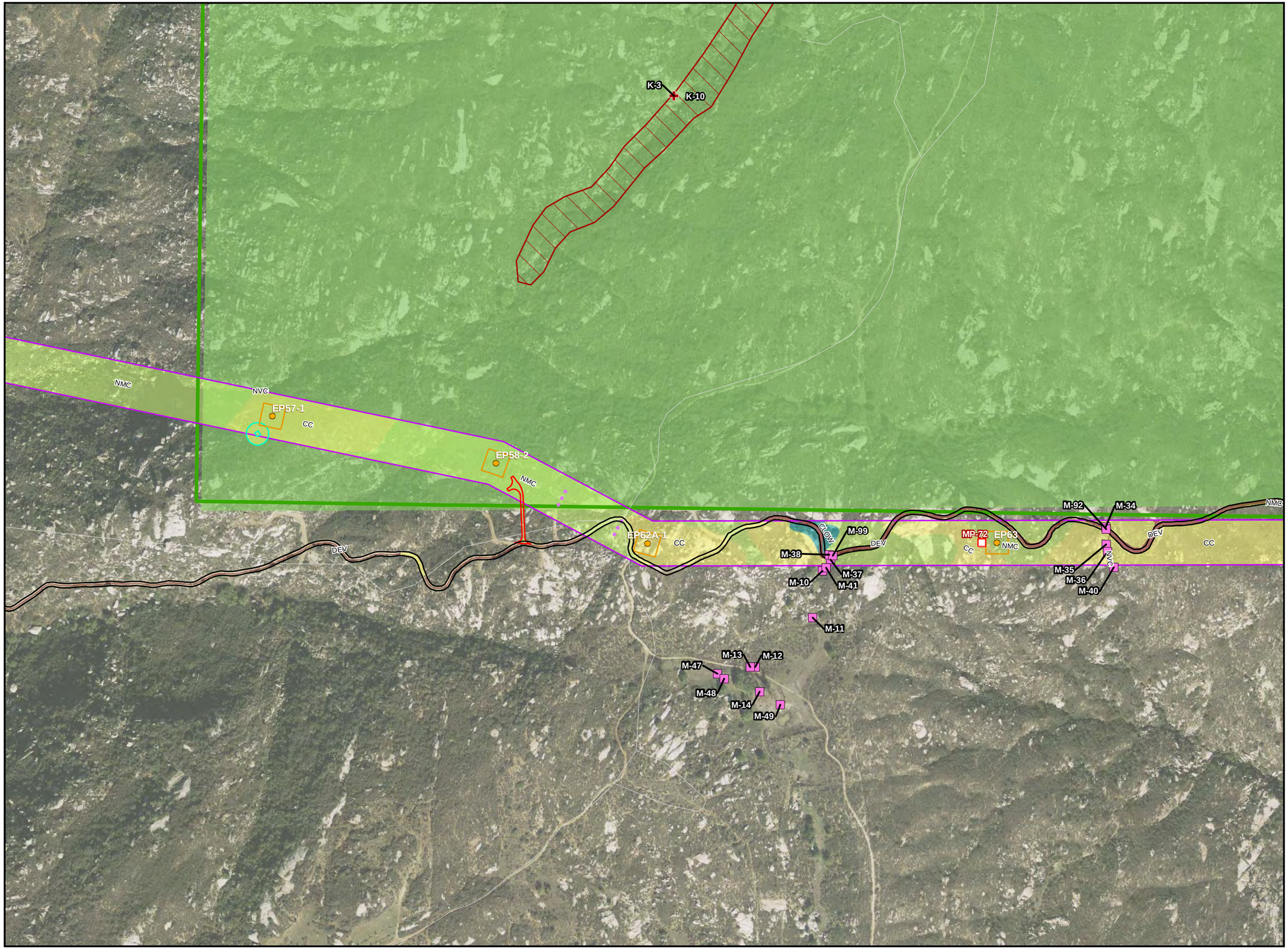
Feet



Appendix A

USFS Sensitive Species Occurrences

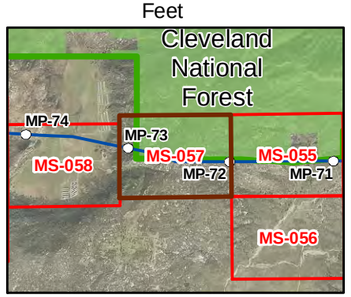
MS-056 - 5/24/2010



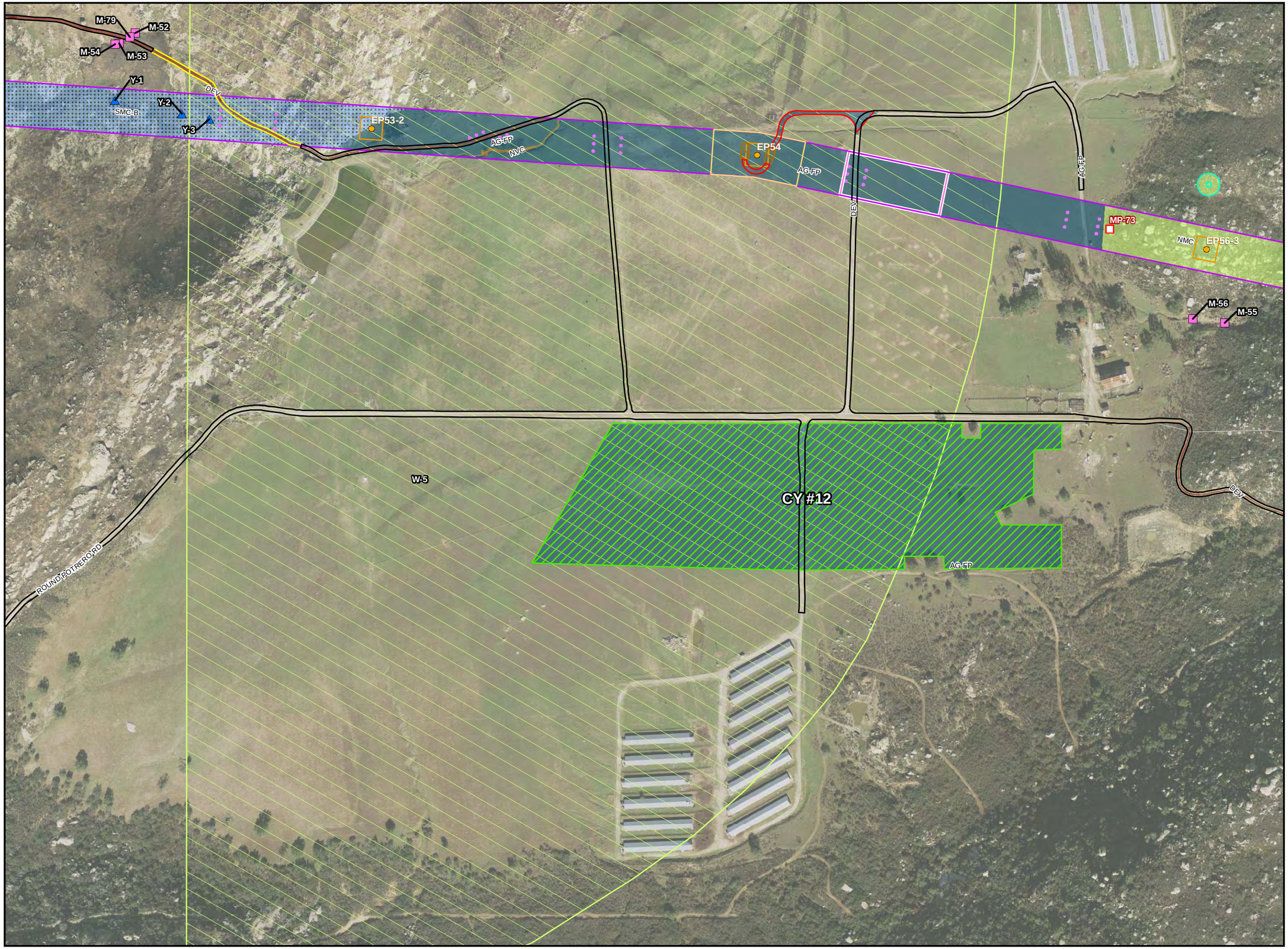
SUNRISE POWERLINK℠

- 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-057 - 5/24/2010

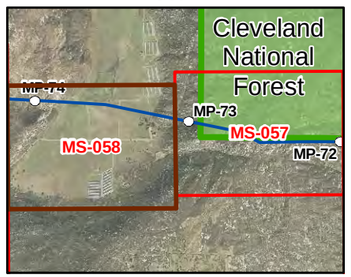


SUNRISE POWERLINK℠

- 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

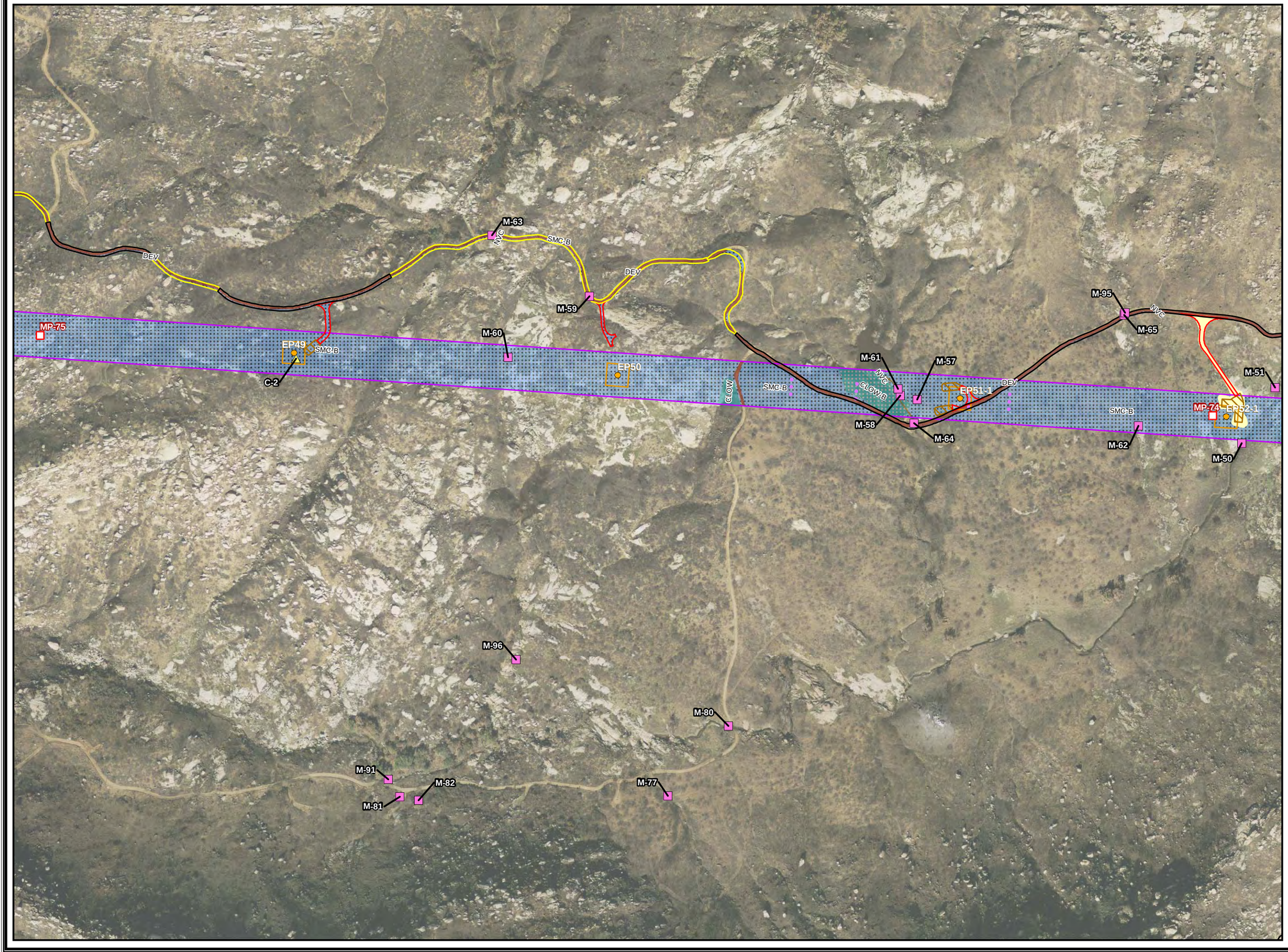
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-058 - 5/24/2010

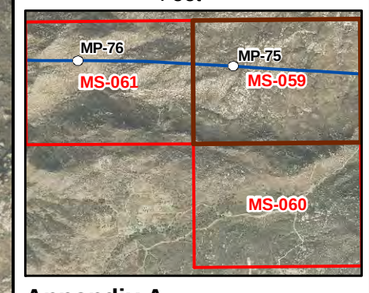


SUNRISE POWERLINK℠

- 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

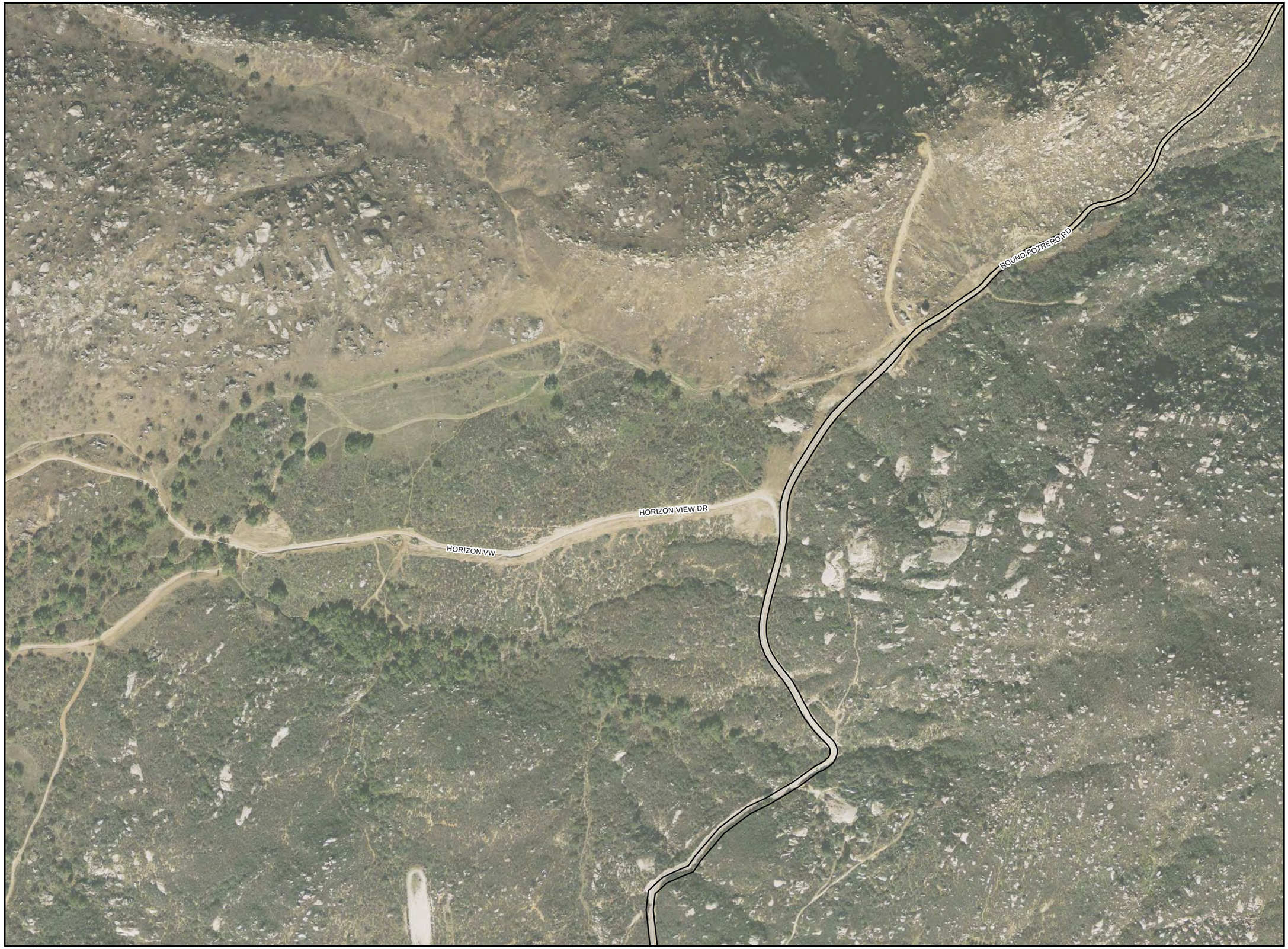
Feet



Appendix A

USFS Sensitive Species Occurrences

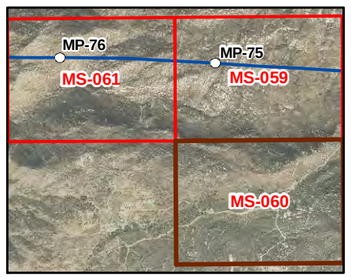
MS-059 - 5/24/2010



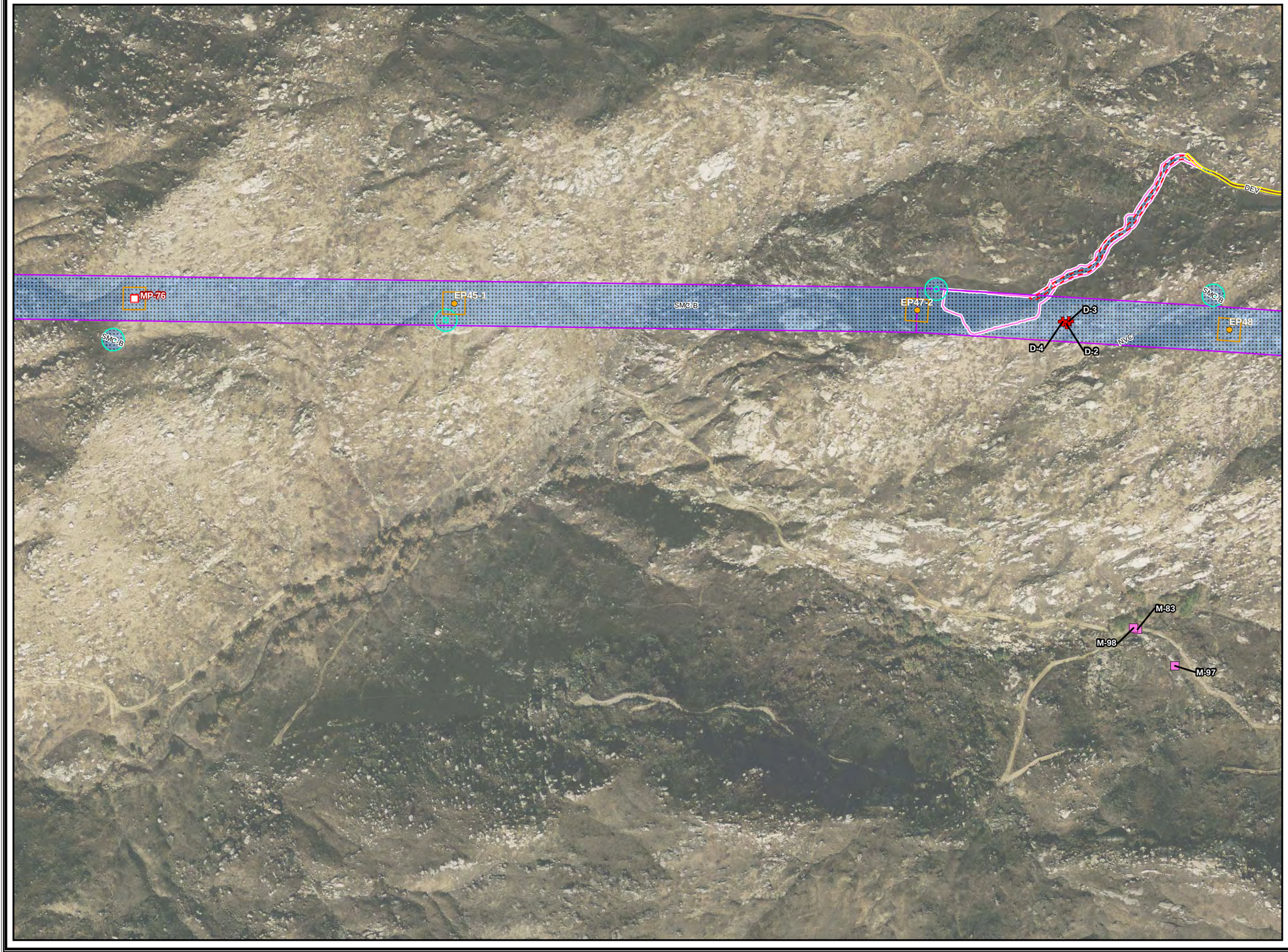
SUNRISE POWERLINK℠

- 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



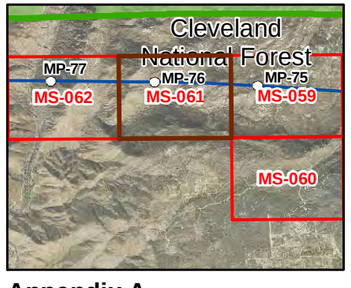
Appendix A
USFS Sensitive
Species Occurrences
MS-060 - 5/24/2010



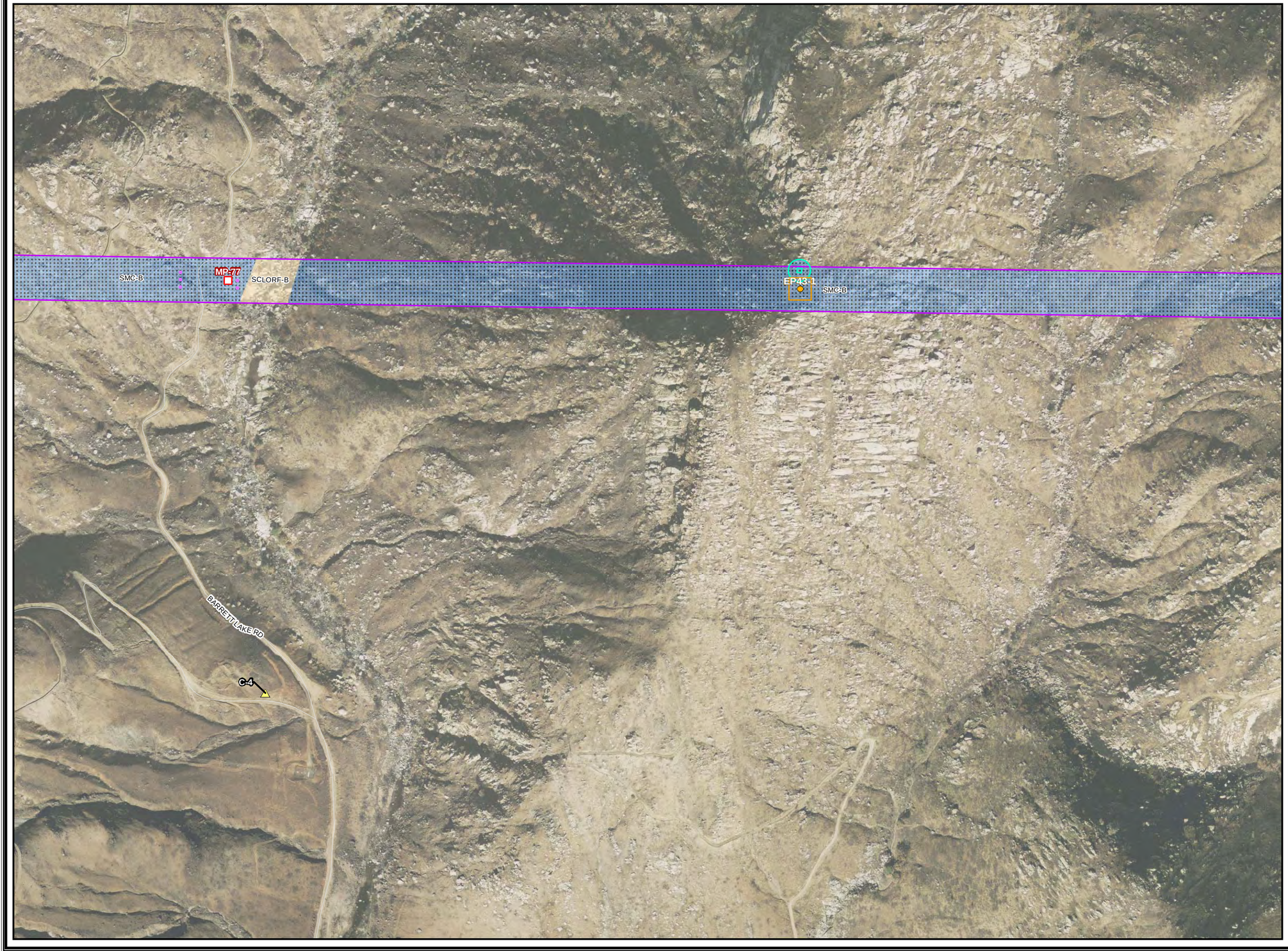
SUNRISE POWERLINK℠

- 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-061 - 5/24/2010

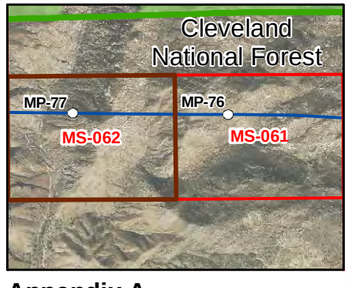


SUNRISE POWERLINK℠

- 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

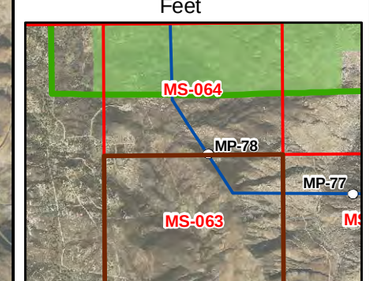
USFS Sensitive Species Occurrences

MS-062 - 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

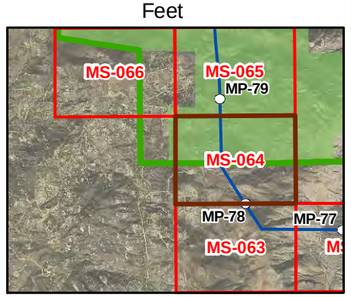


Appendix A
USFS Sensitive
Species Occurrences
MS-063 - 5/24/2010

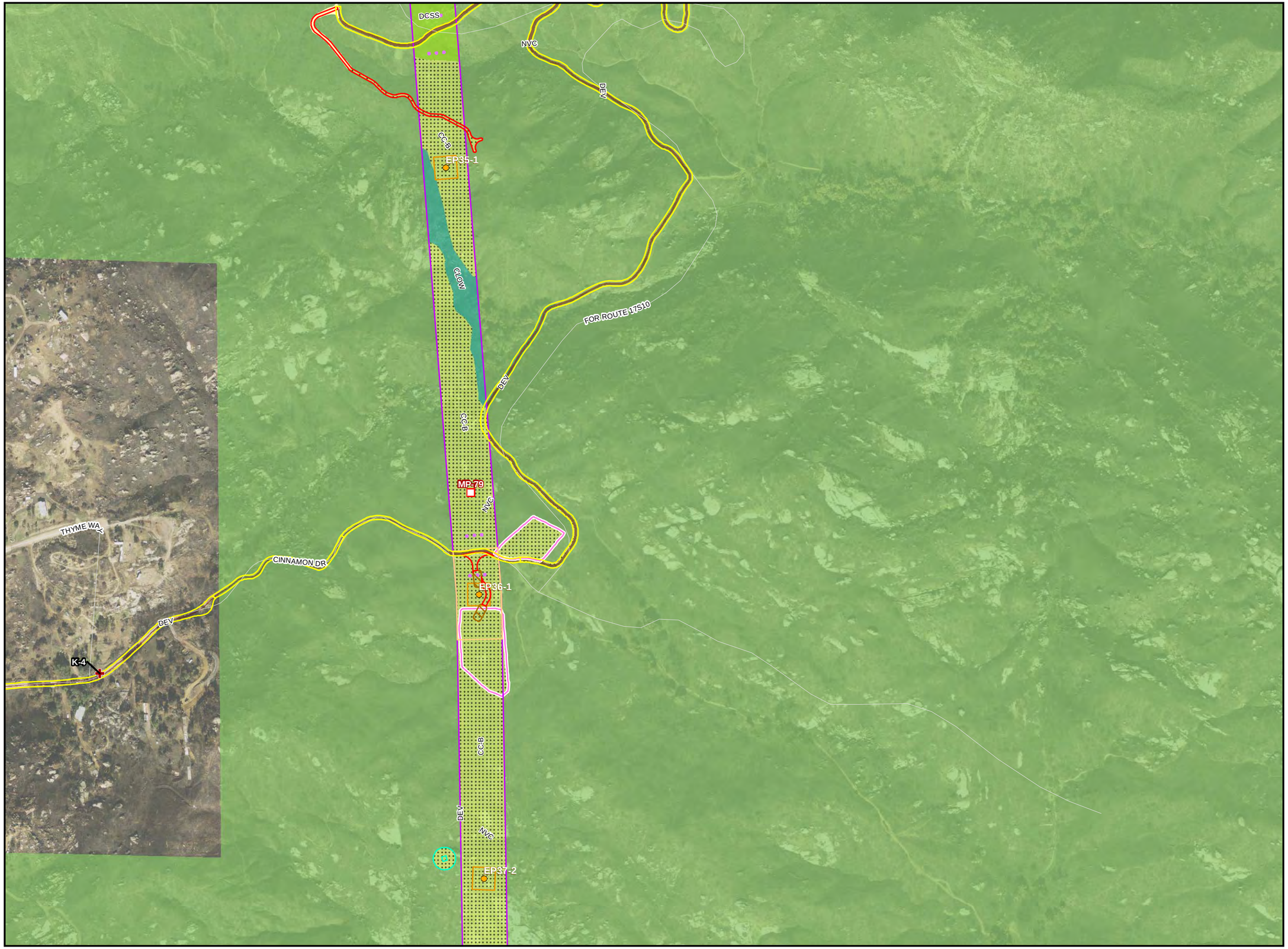
SUNRISE POWERLINK℠

- 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-064 - 5/24/2010

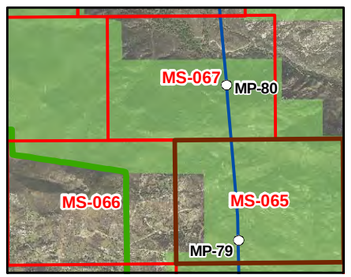


SUNRISE POWERLINK℠

- 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

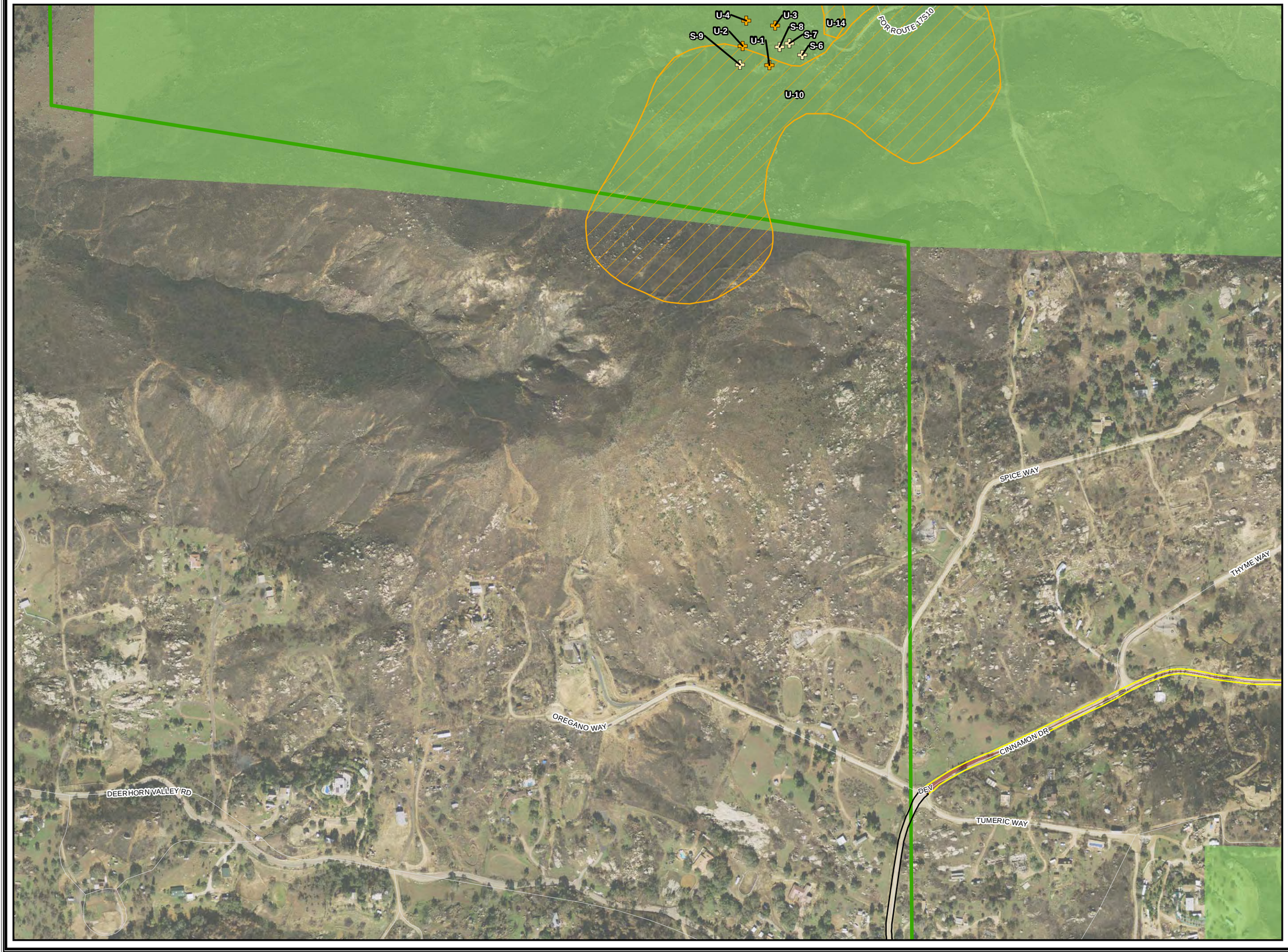
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-065 - 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
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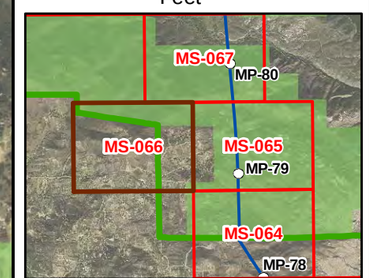
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

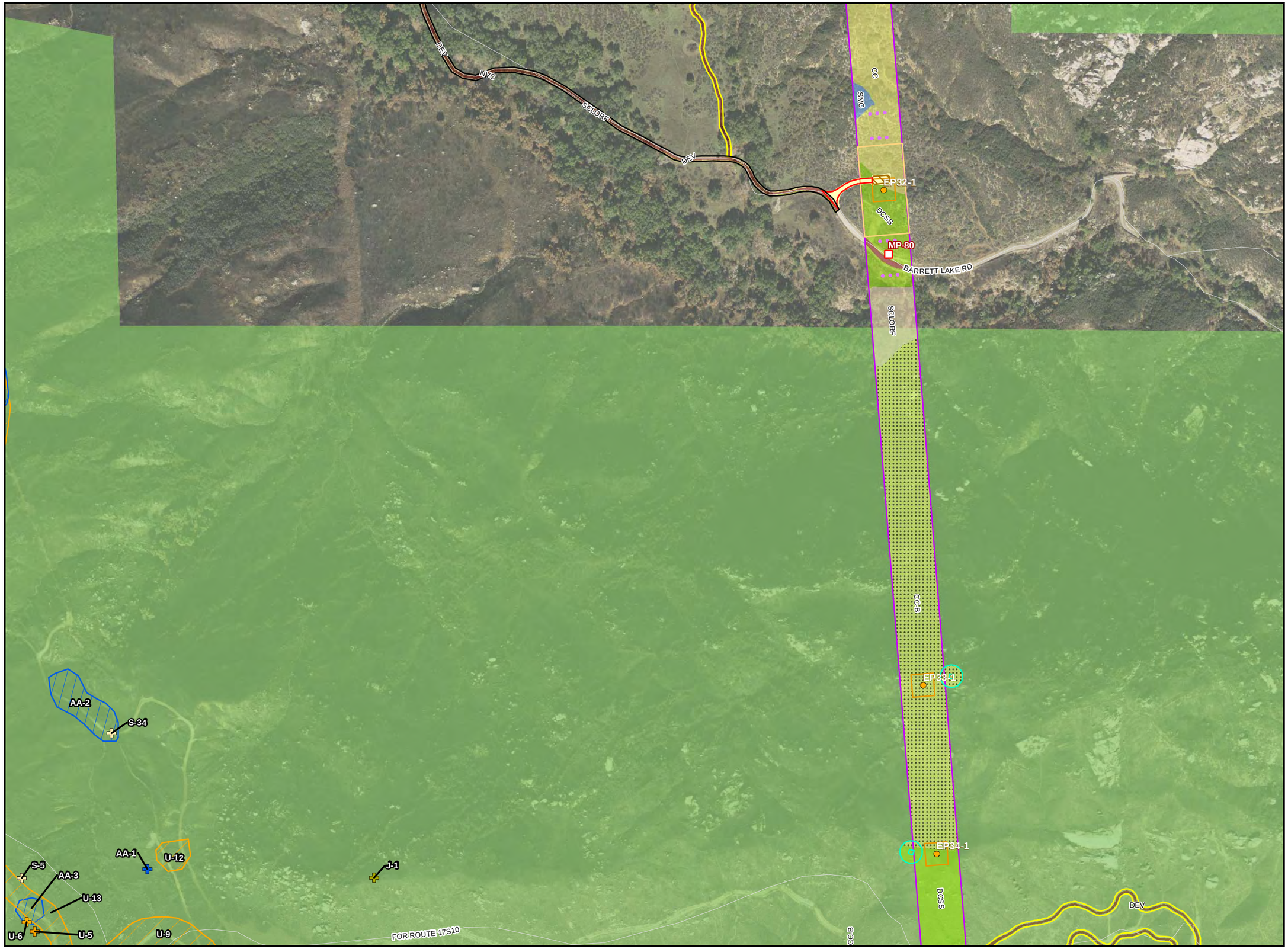
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-066 - 5/24/2010

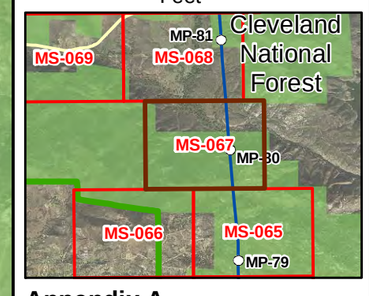


SUNRISE POWERLINK℠

- 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



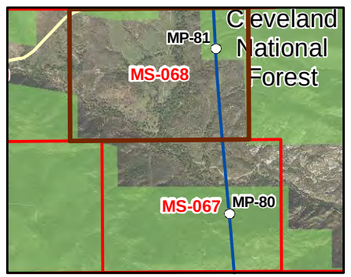
Appendix A
USFS Sensitive Species Occurrences
MS-067 - 5/24/2010

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

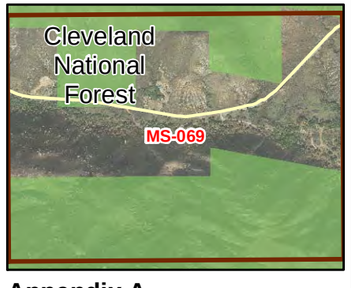
MS-068 - 5/24/2010

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

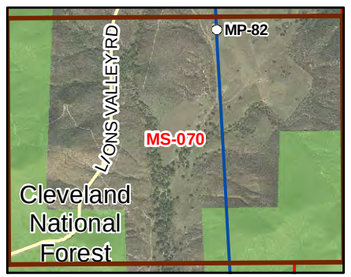
MS-069 - 5/24/2010

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

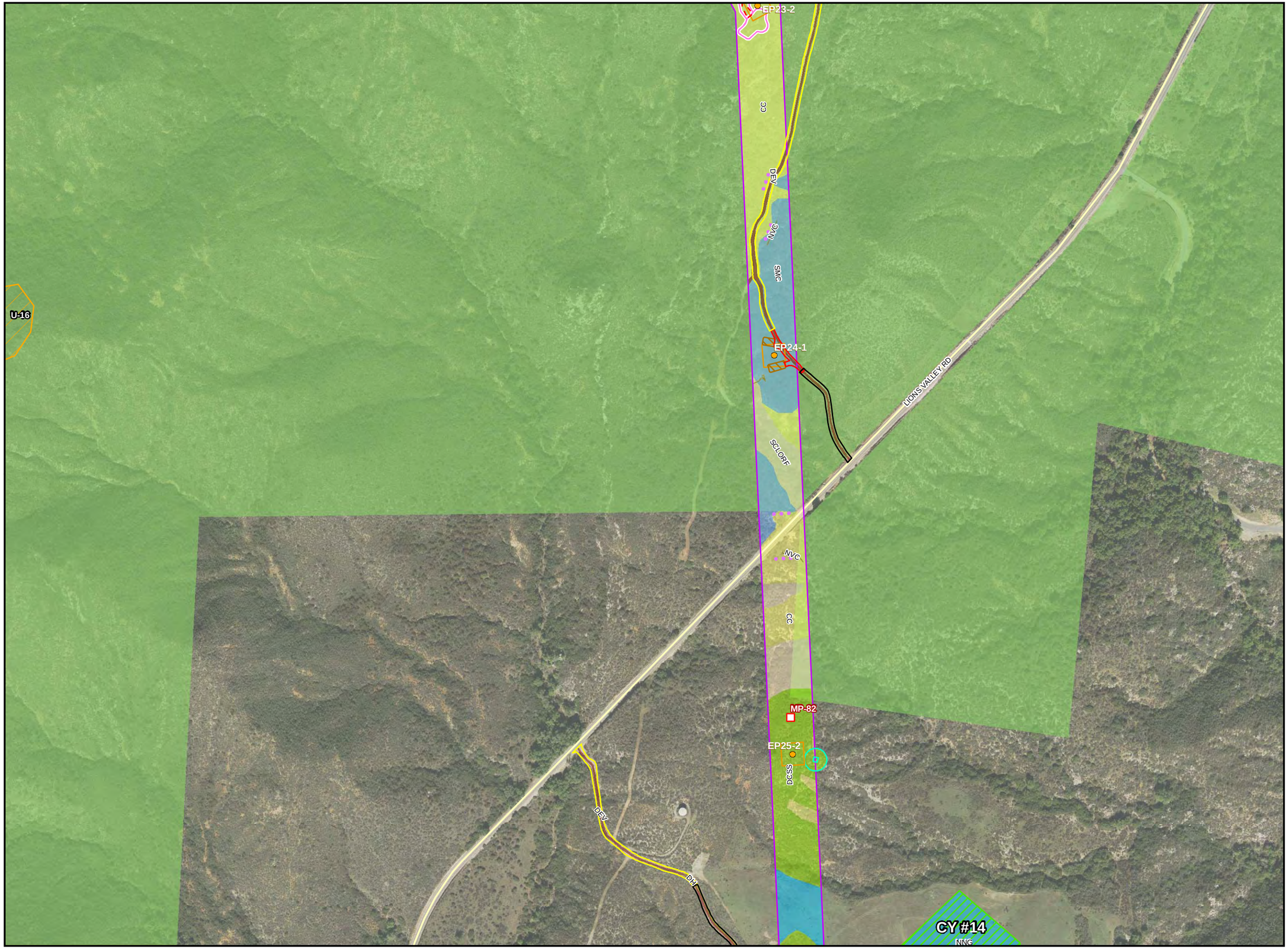
Feet



Appendix A

USFS Sensitive Species Occurrences

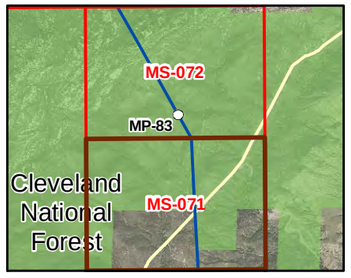
MS-070 - 5/24/2010



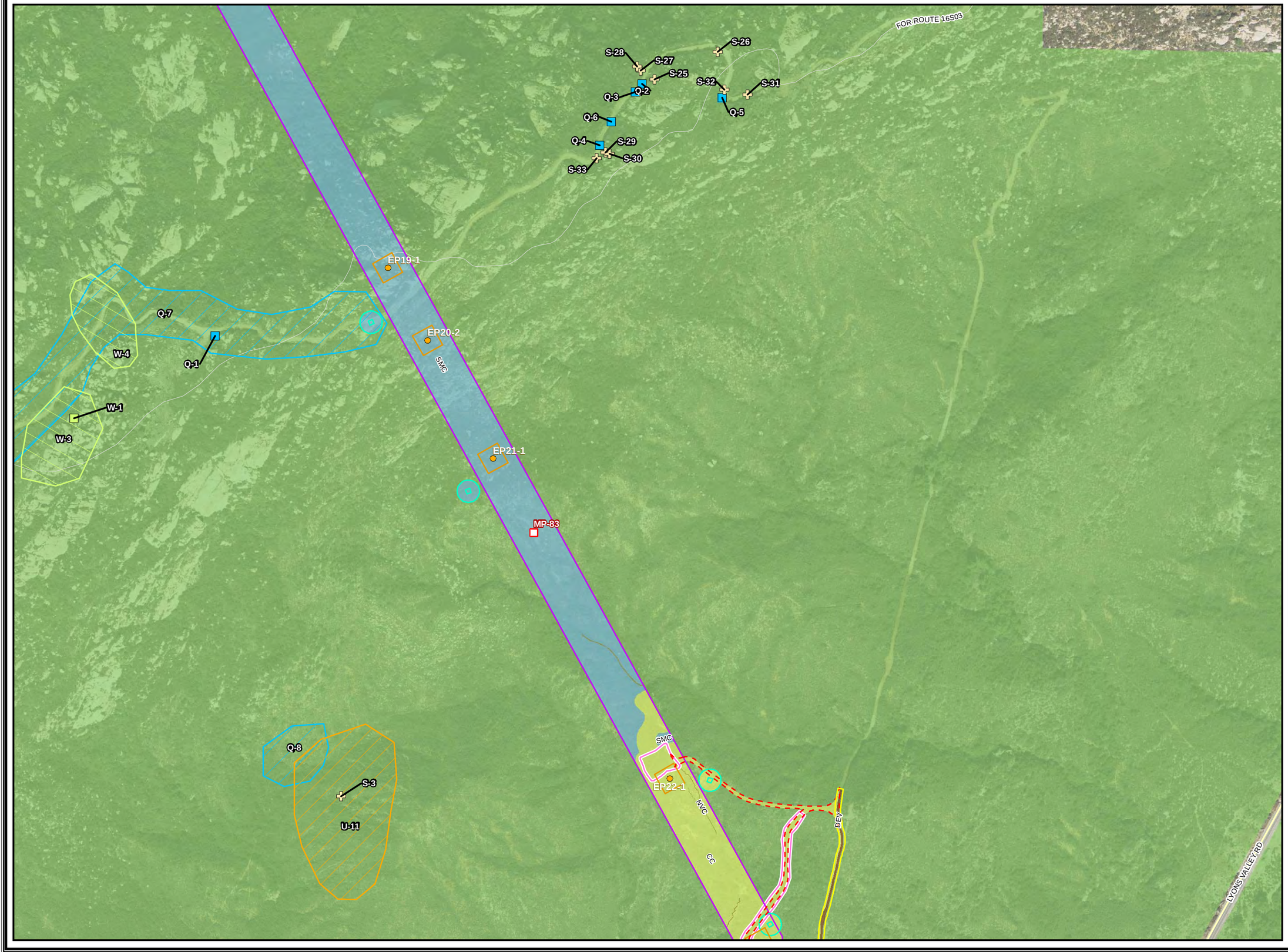
SUNRISE POWERLINK℠

- 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-071 - 5/24/2010

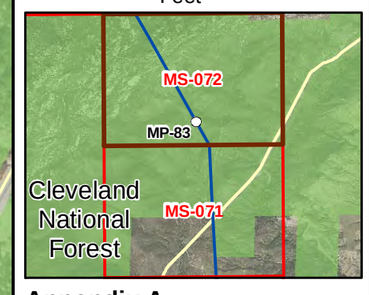


SUNRISE POWERLINK℠

- 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

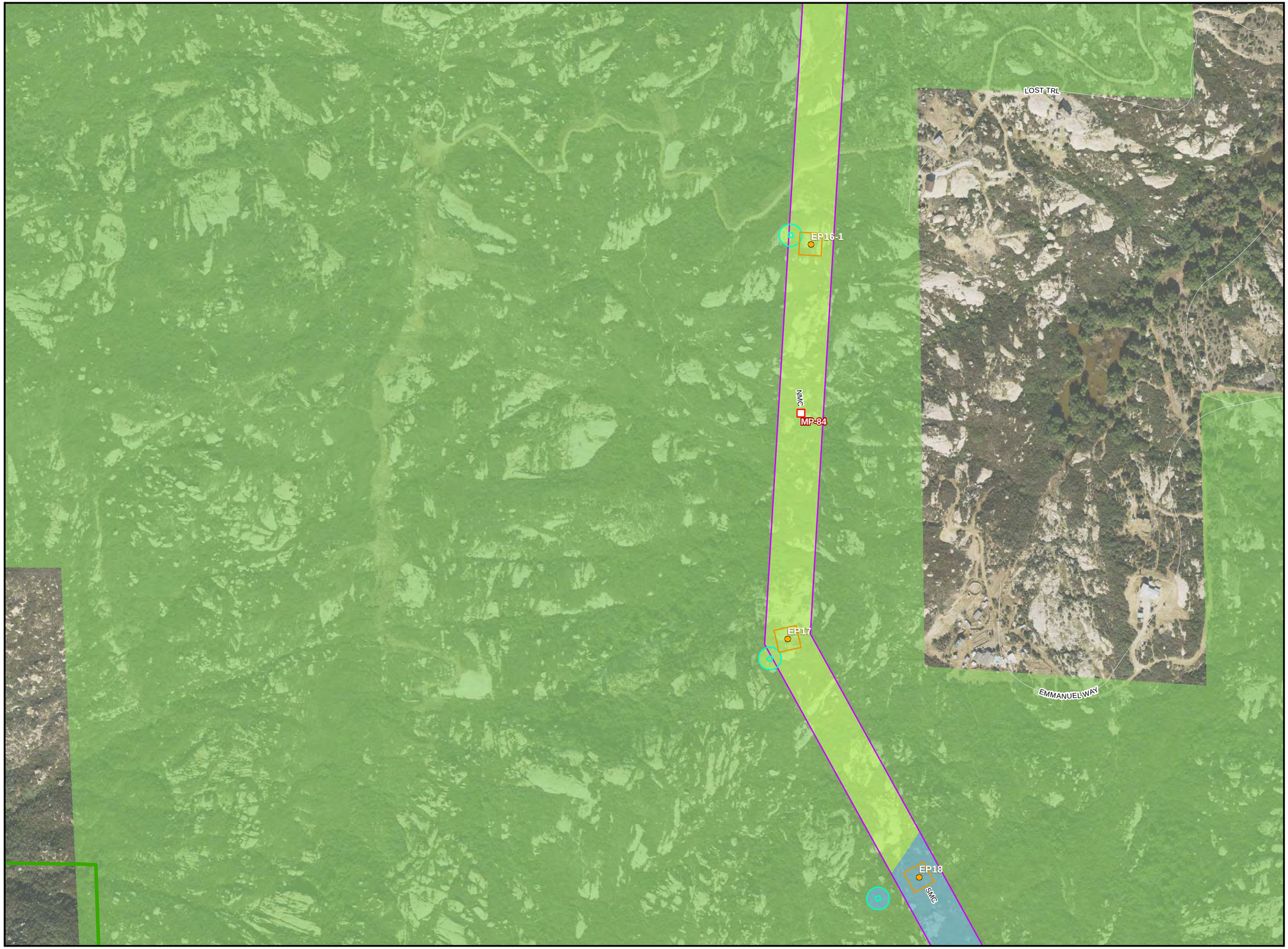
Feet



Appendix A

USFS Sensitive Species Occurrences

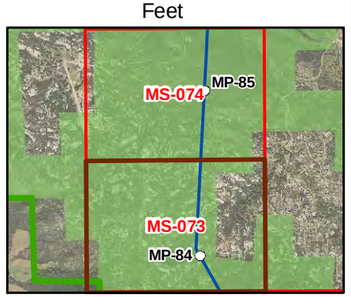
MS-072 - 5/24/2010



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



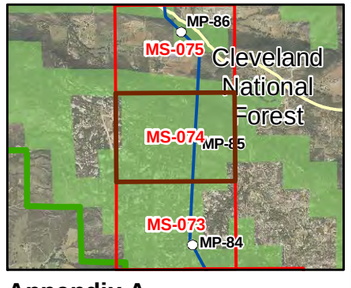
Appendix A
USFS Sensitive
Species Occurrences
MS-073 - 5/24/2010

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-074 - 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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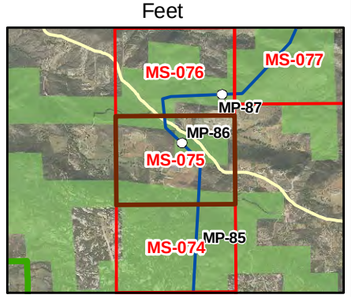
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



Appendix A

USFS Sensitive Species Occurrences

MS-075 - 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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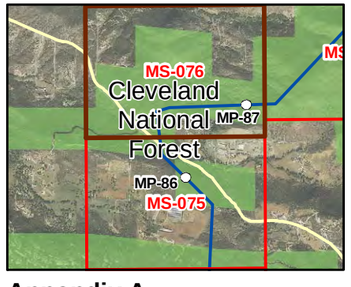
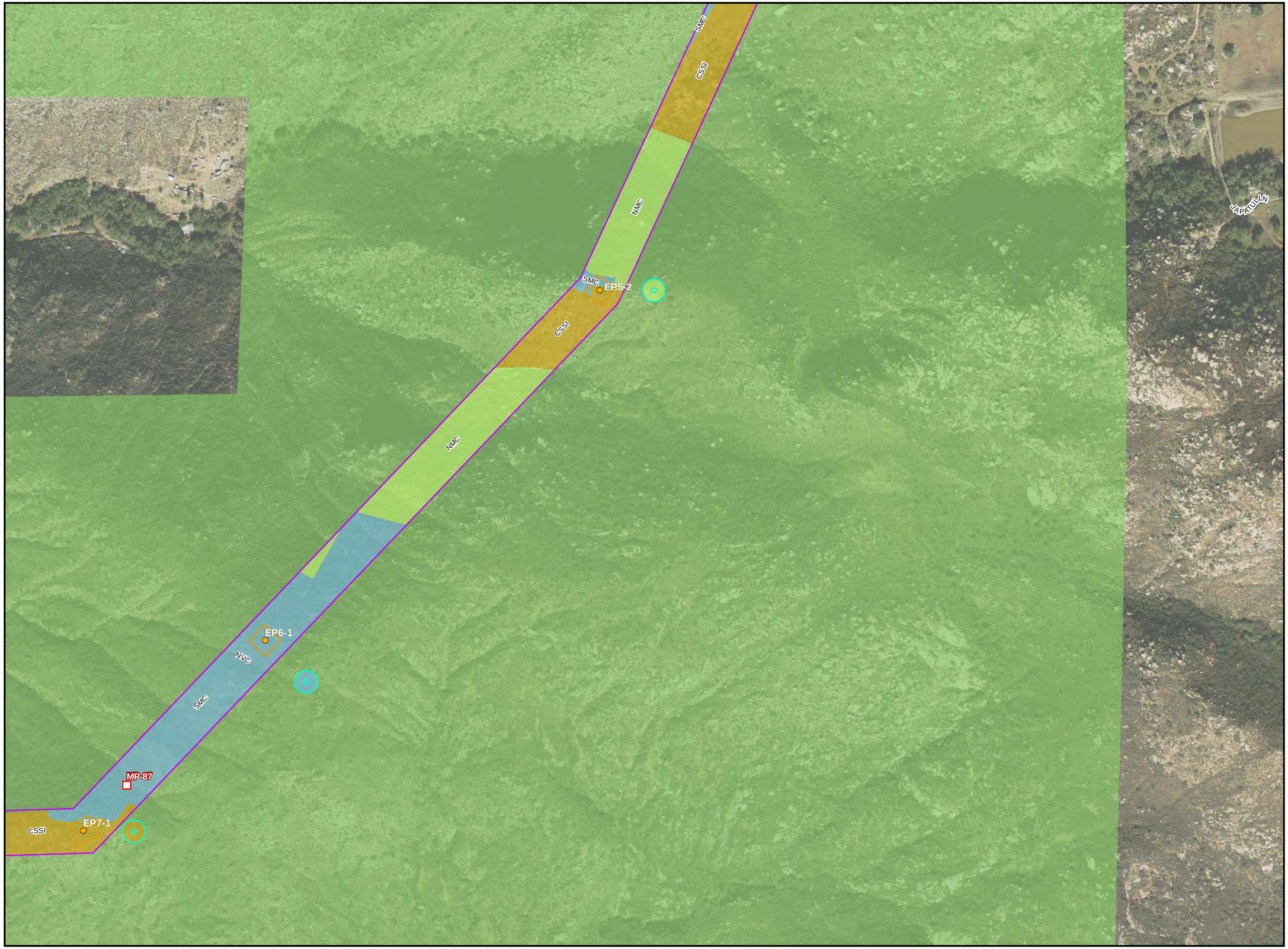
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



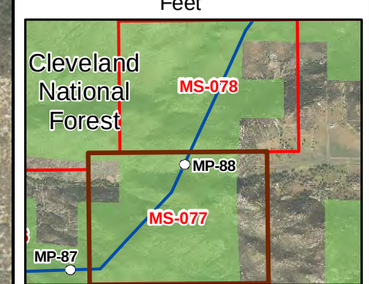
Appendix A
USFS Sensitive Species Occurrences
MS-076 - 5/24/2010



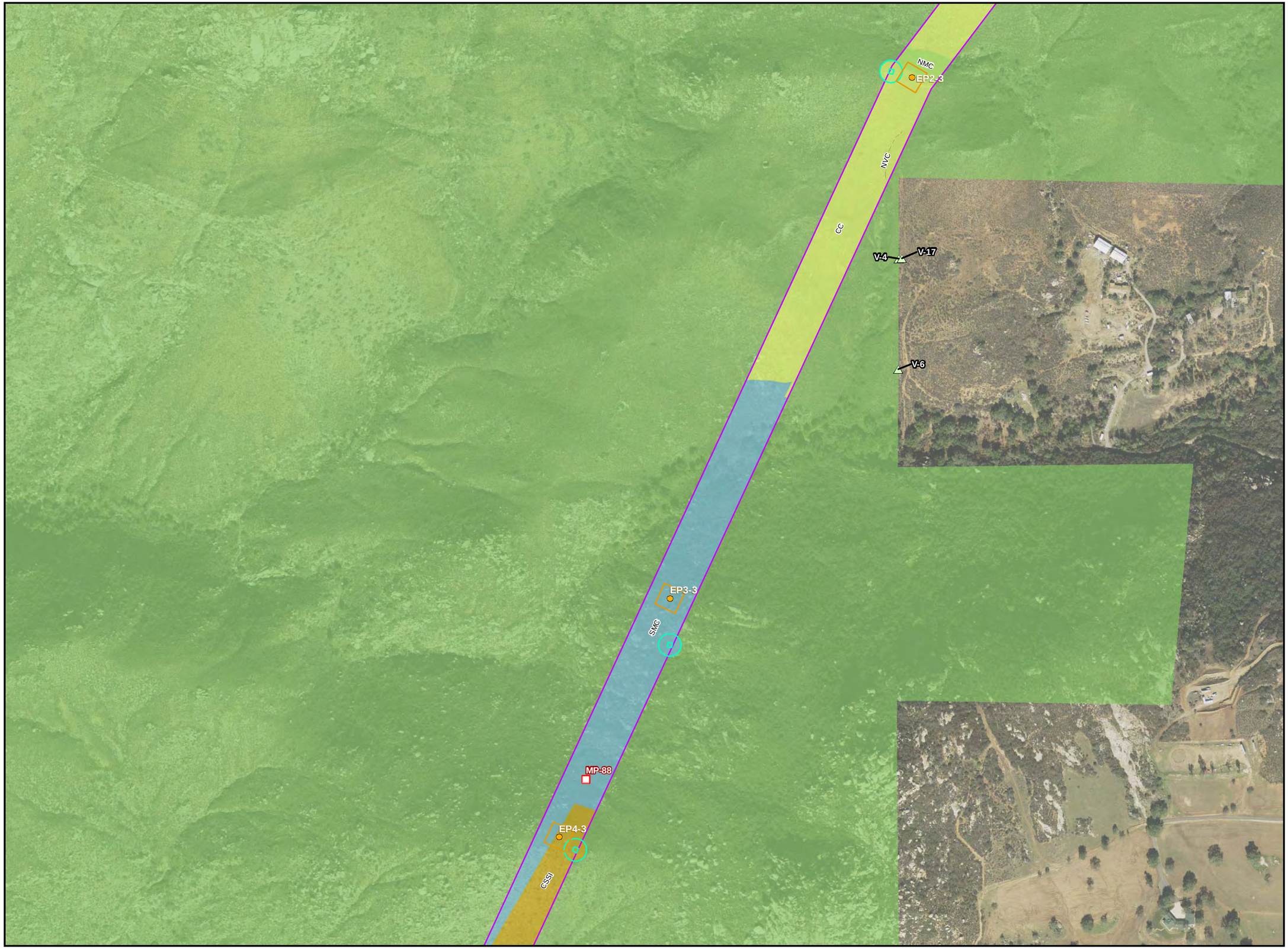
SUNRISE POWERLINK℠

- 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-077 - 5/24/2010

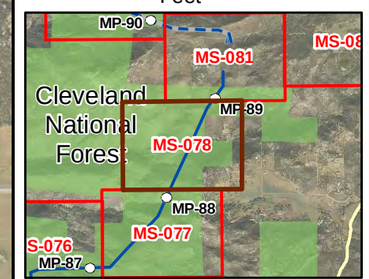


SUNRISE POWERLINK℠

- 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

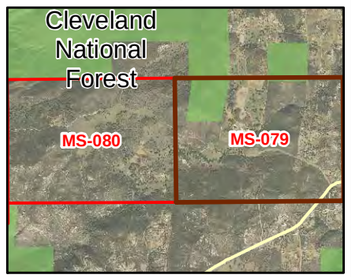
MS-078 - 5/24/2010

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

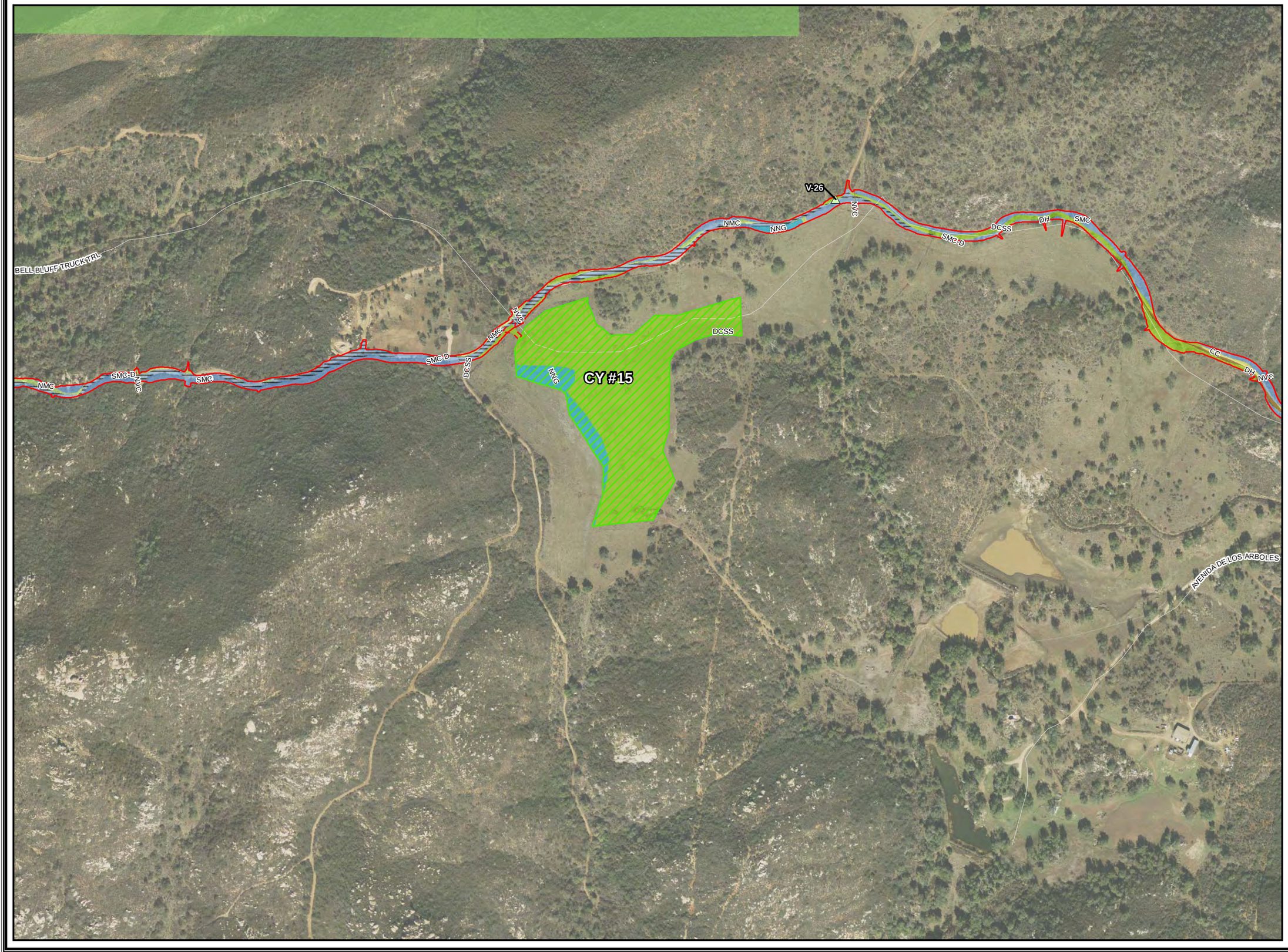
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-079 - 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
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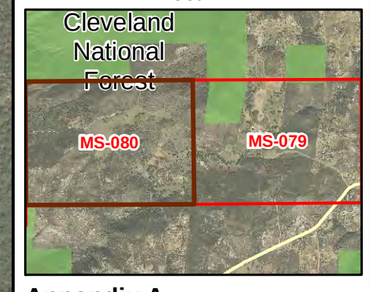
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



Appendix A

USFS Sensitive Species Occurrences

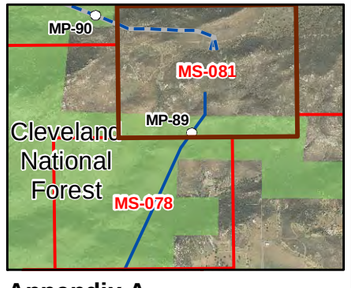
MS-080 - 5/24/2010

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

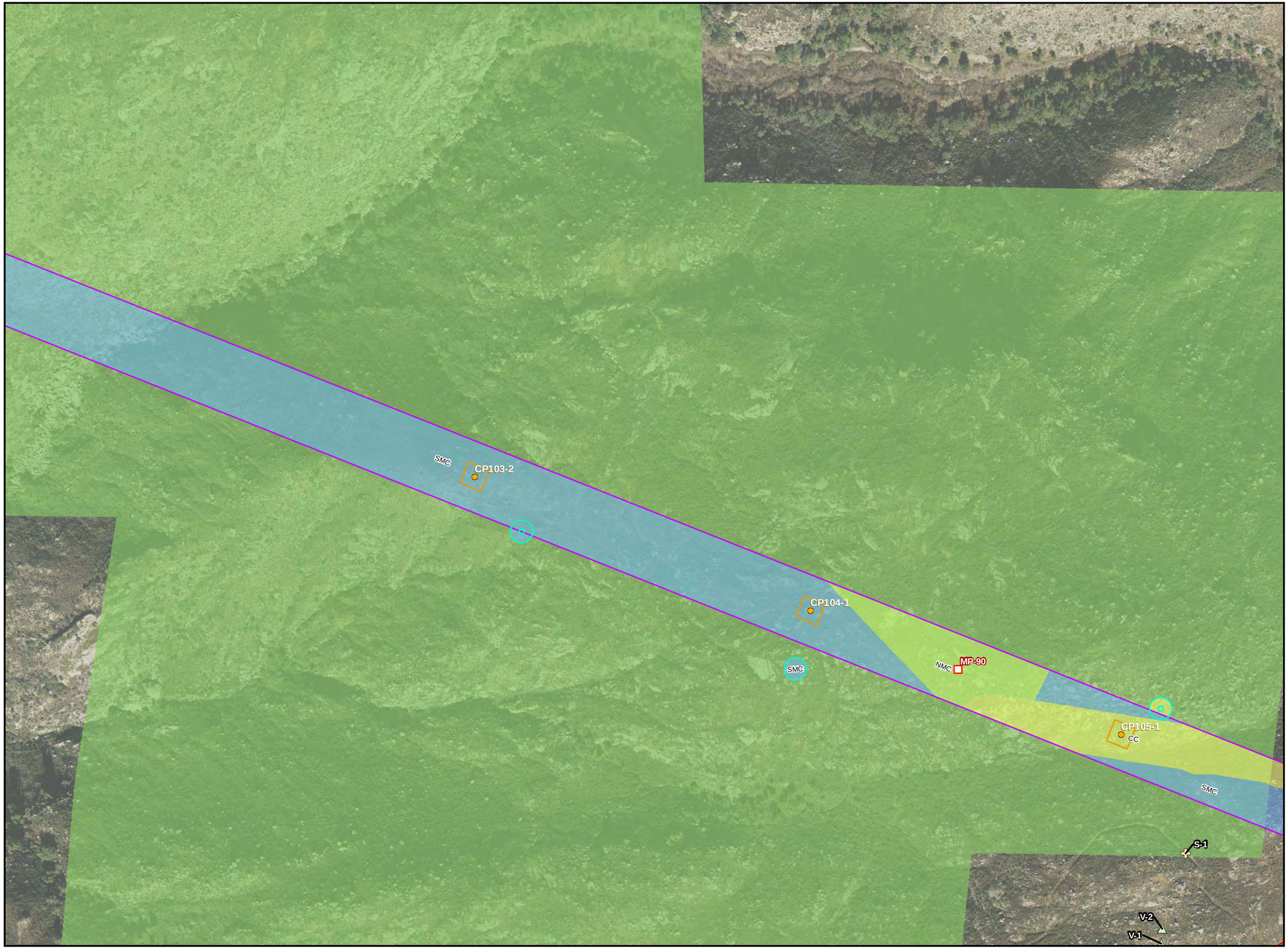
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-081 - 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
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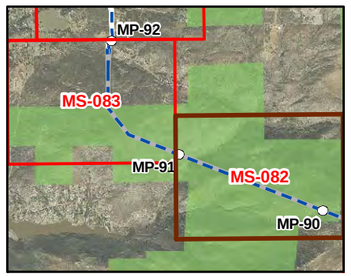
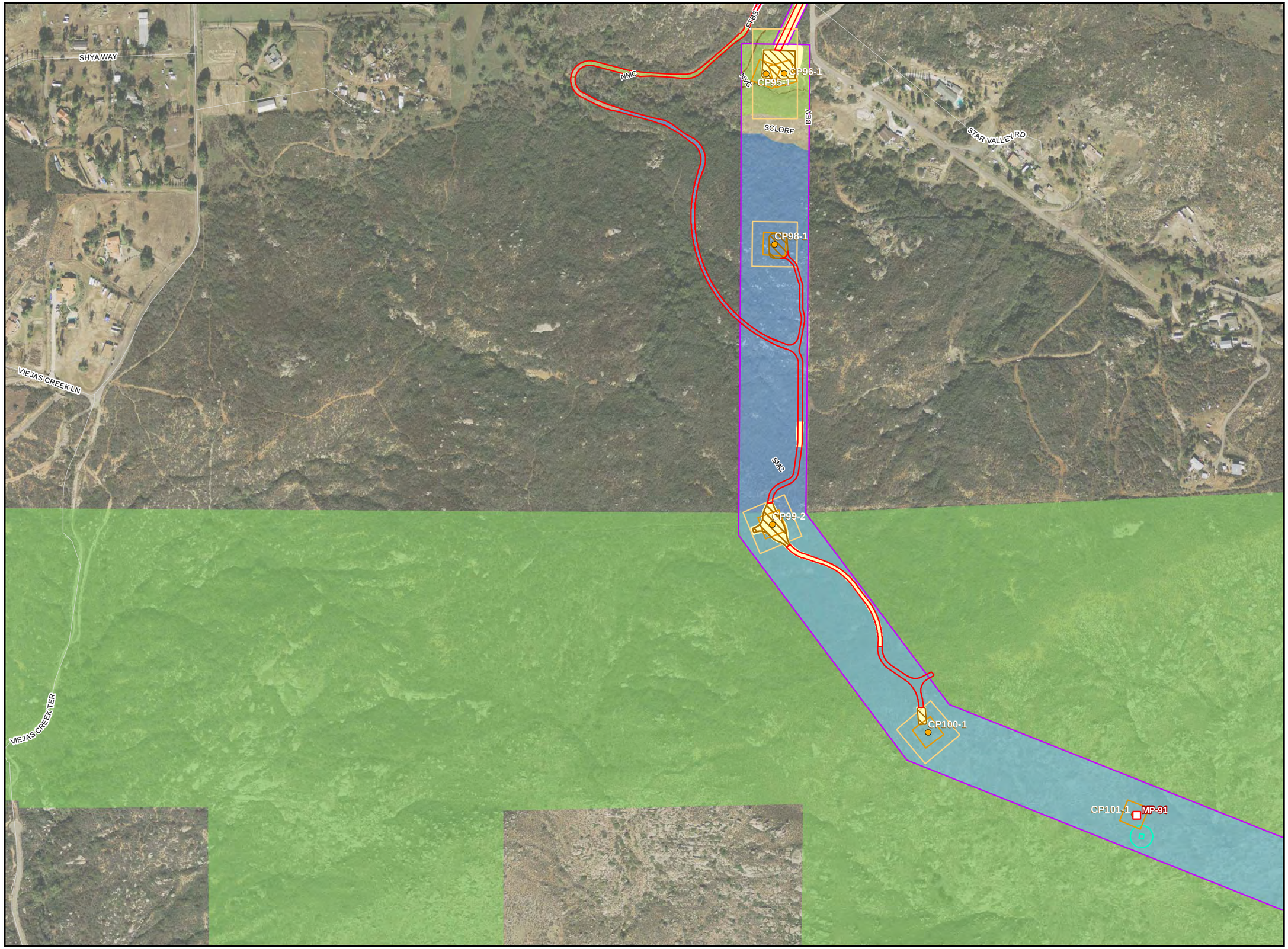
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-082 - 5/24/2010

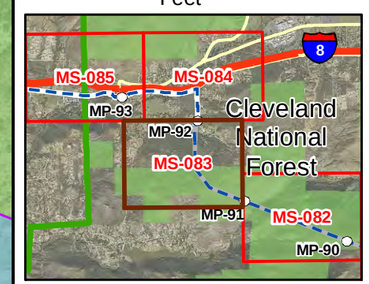


SUNRISE POWERLINK℠

- 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

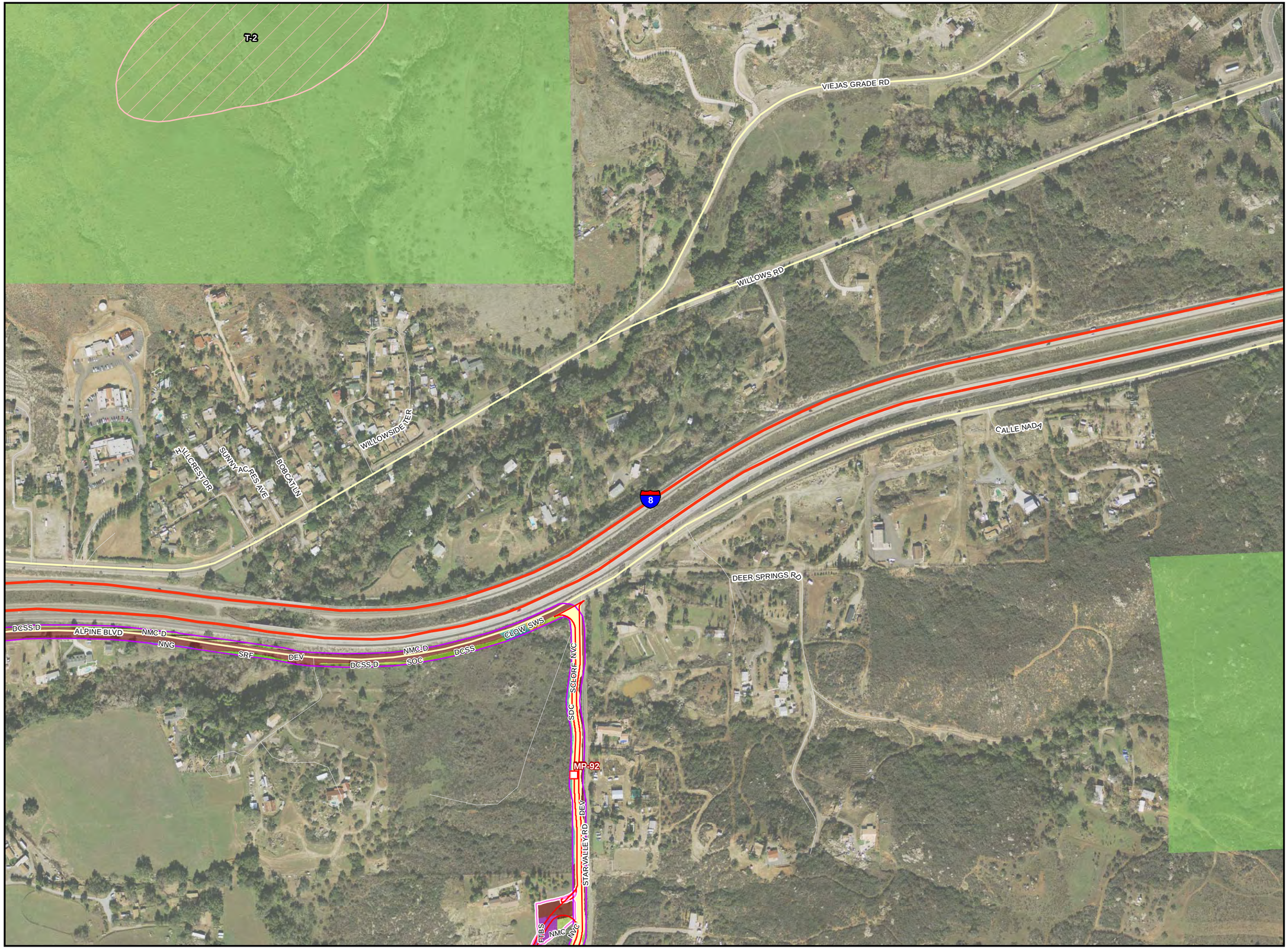
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-083 - 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
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- Existing Road Ready to Use
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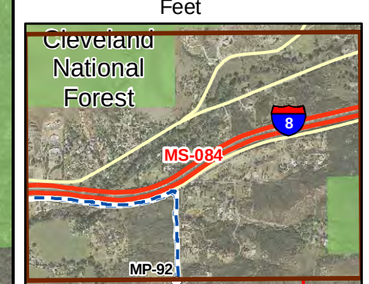
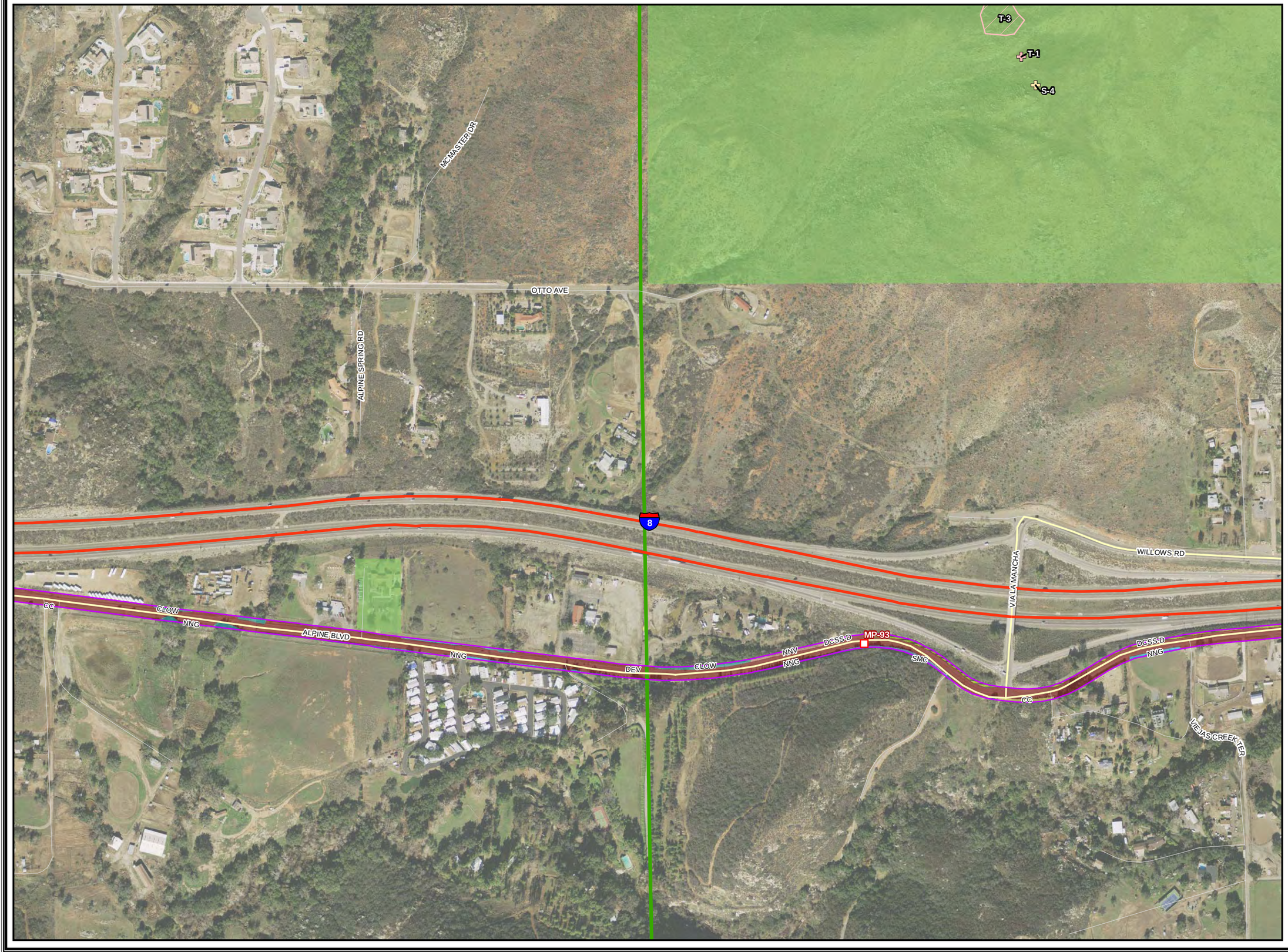
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive Species Occurrences
MS-084 - 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
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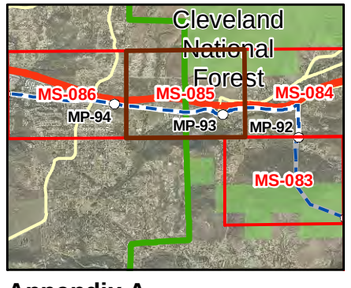
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

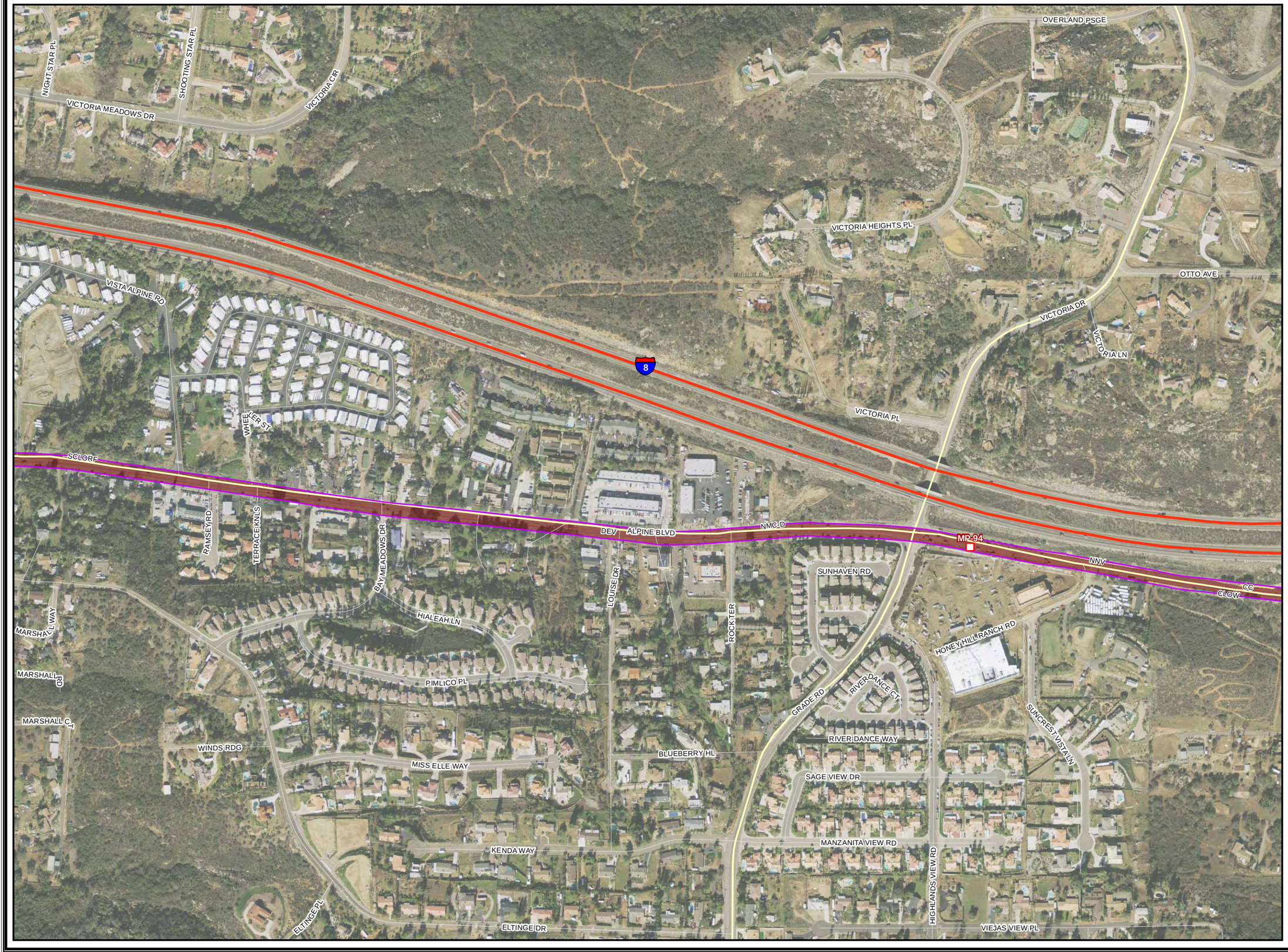
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-085 - 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
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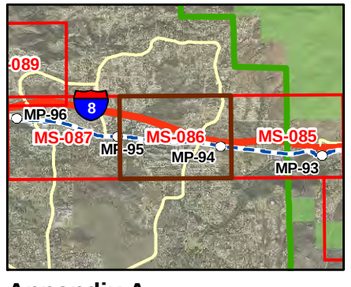
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

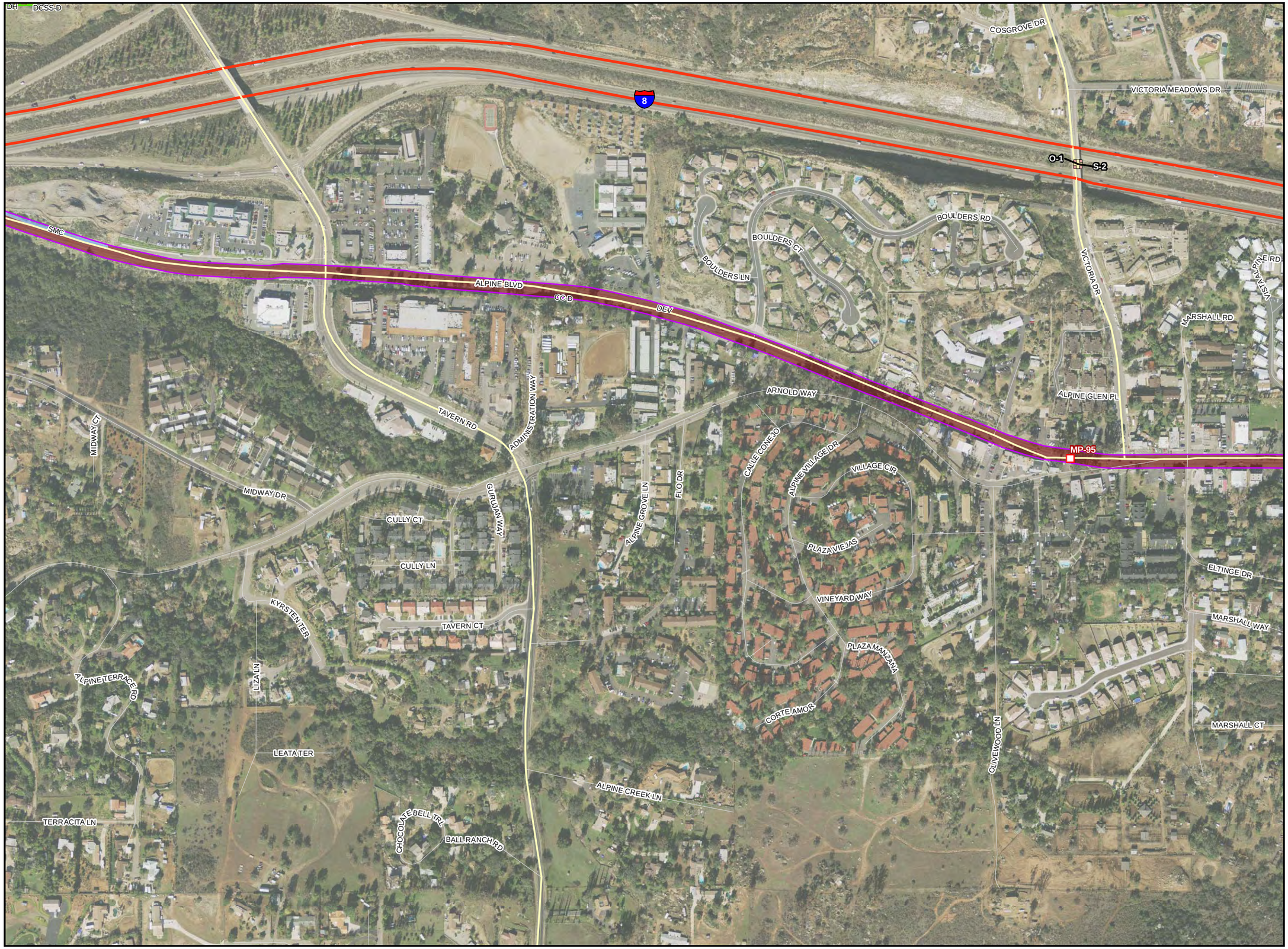
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-086 - 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
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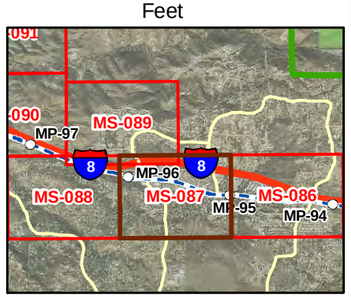
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



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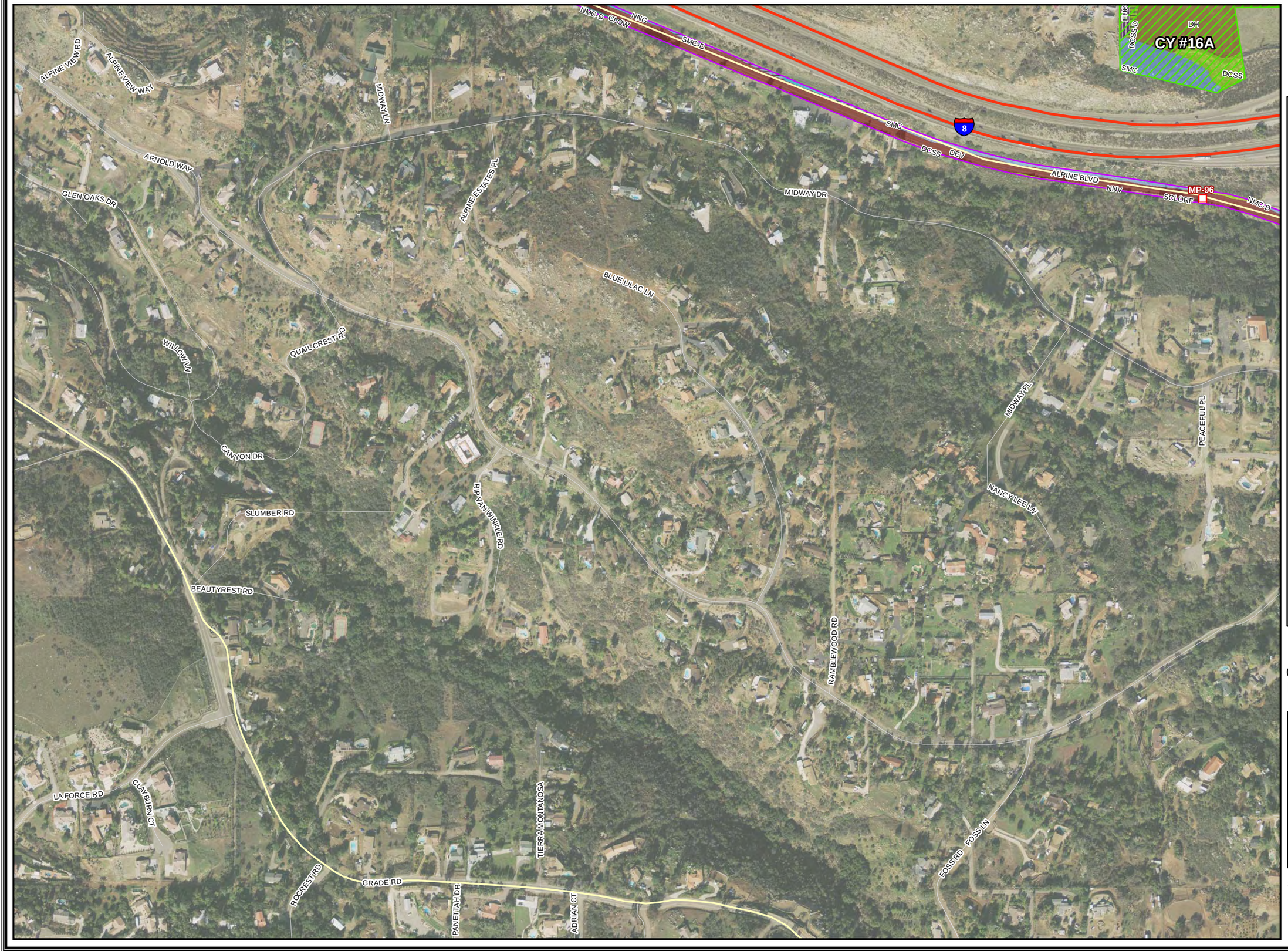
USFS Sensitive Species Occurrences

MS-087 - 5/24/2010

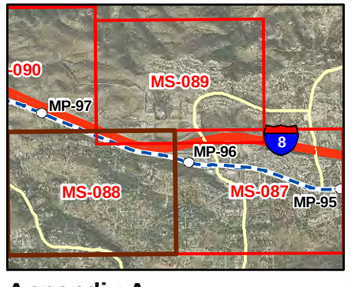


SUNRISE POWERLINK℠

- 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

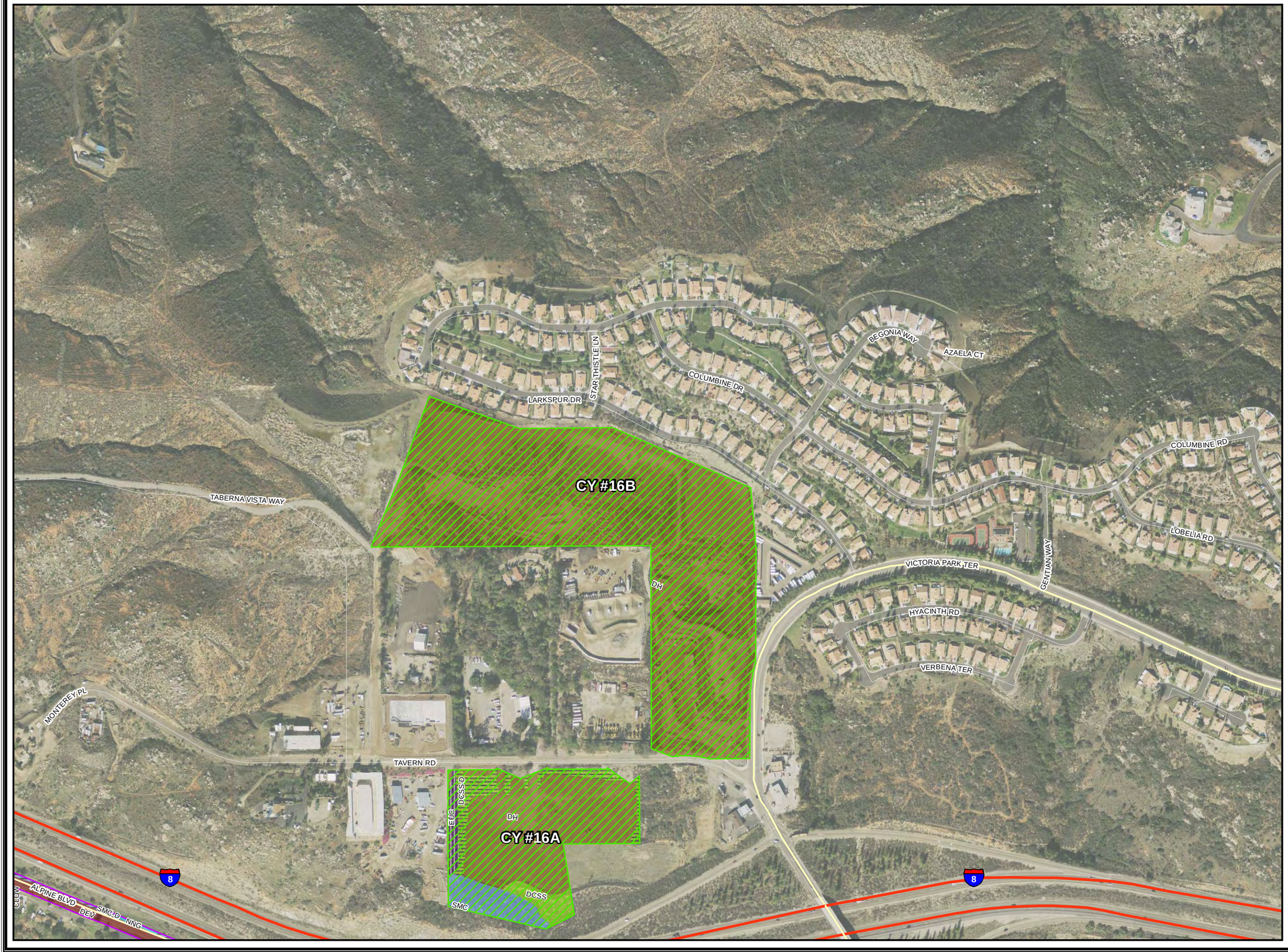
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-088 - 5/24/2010

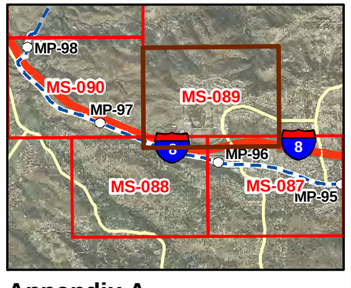


SUNRISE POWERLINK℠

- 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

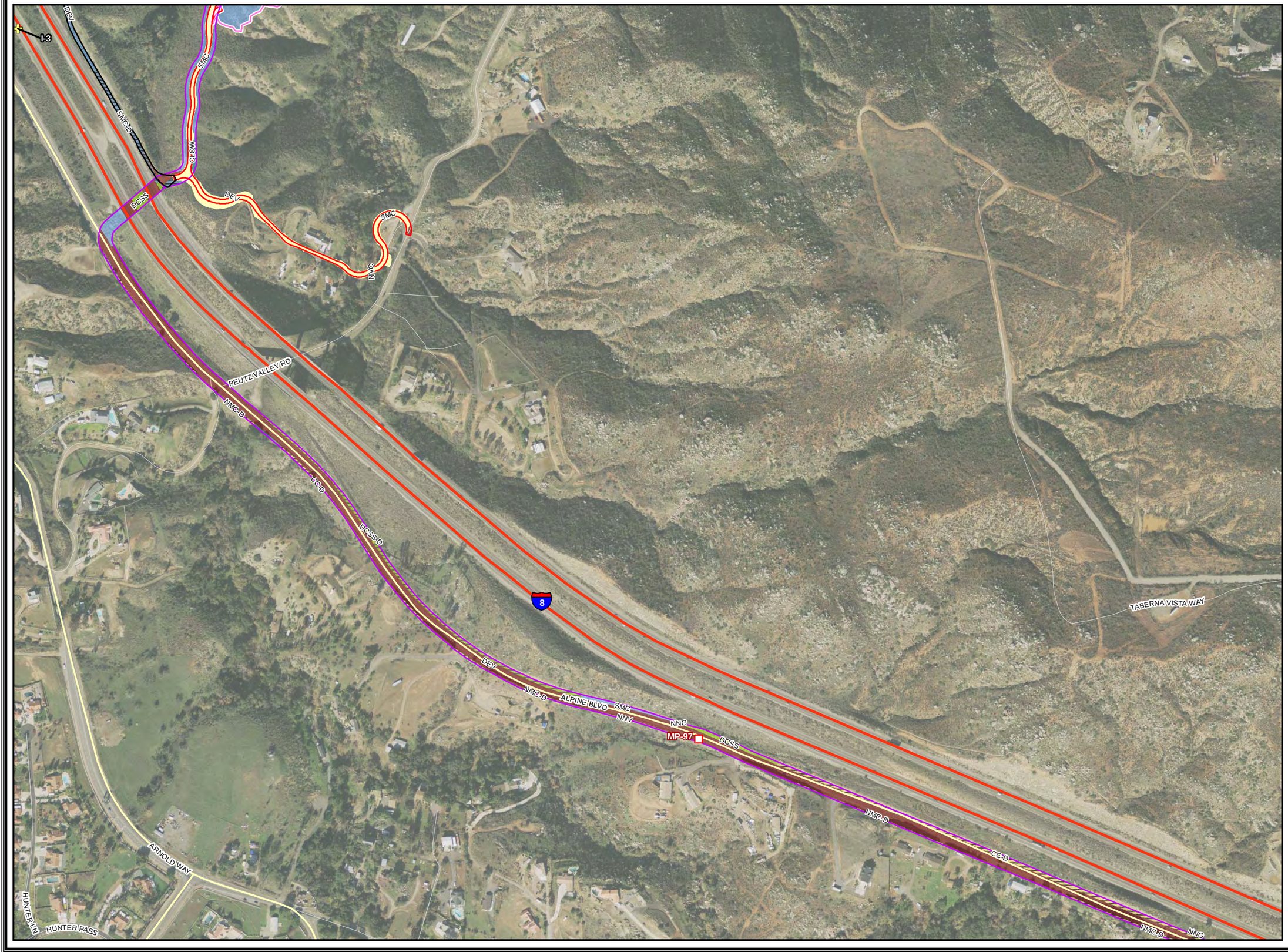
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-089 - 5/24/2010

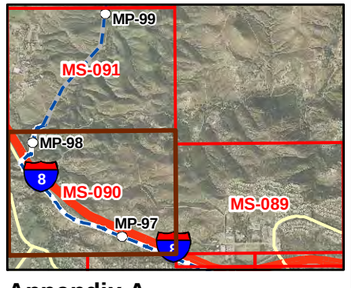


SUNRISE POWERLINK℠

- 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

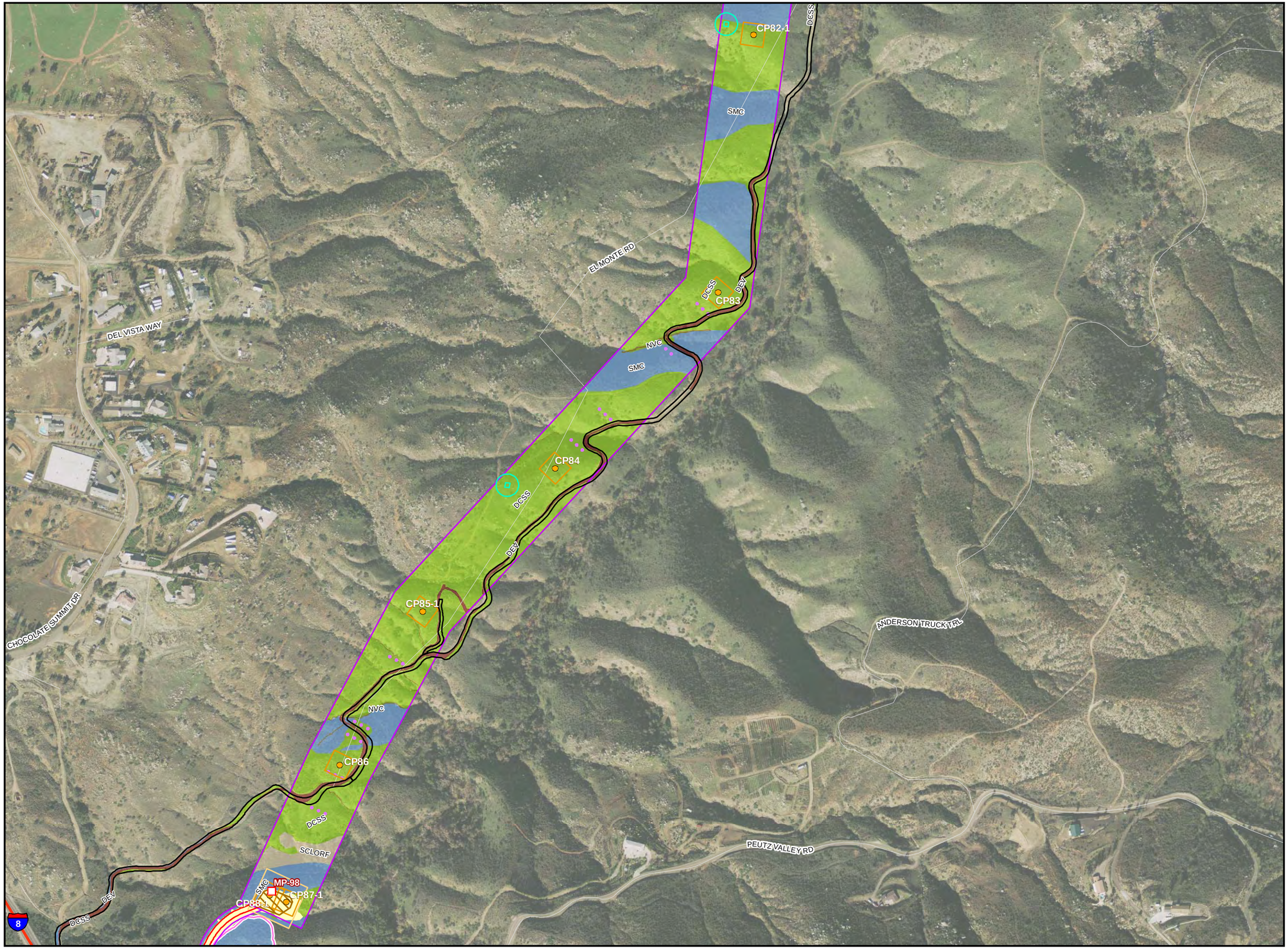
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-090 - 5/24/2010



SUNRISE POWERLINK℠

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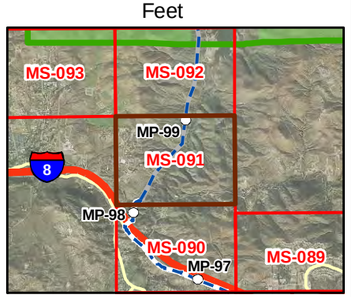
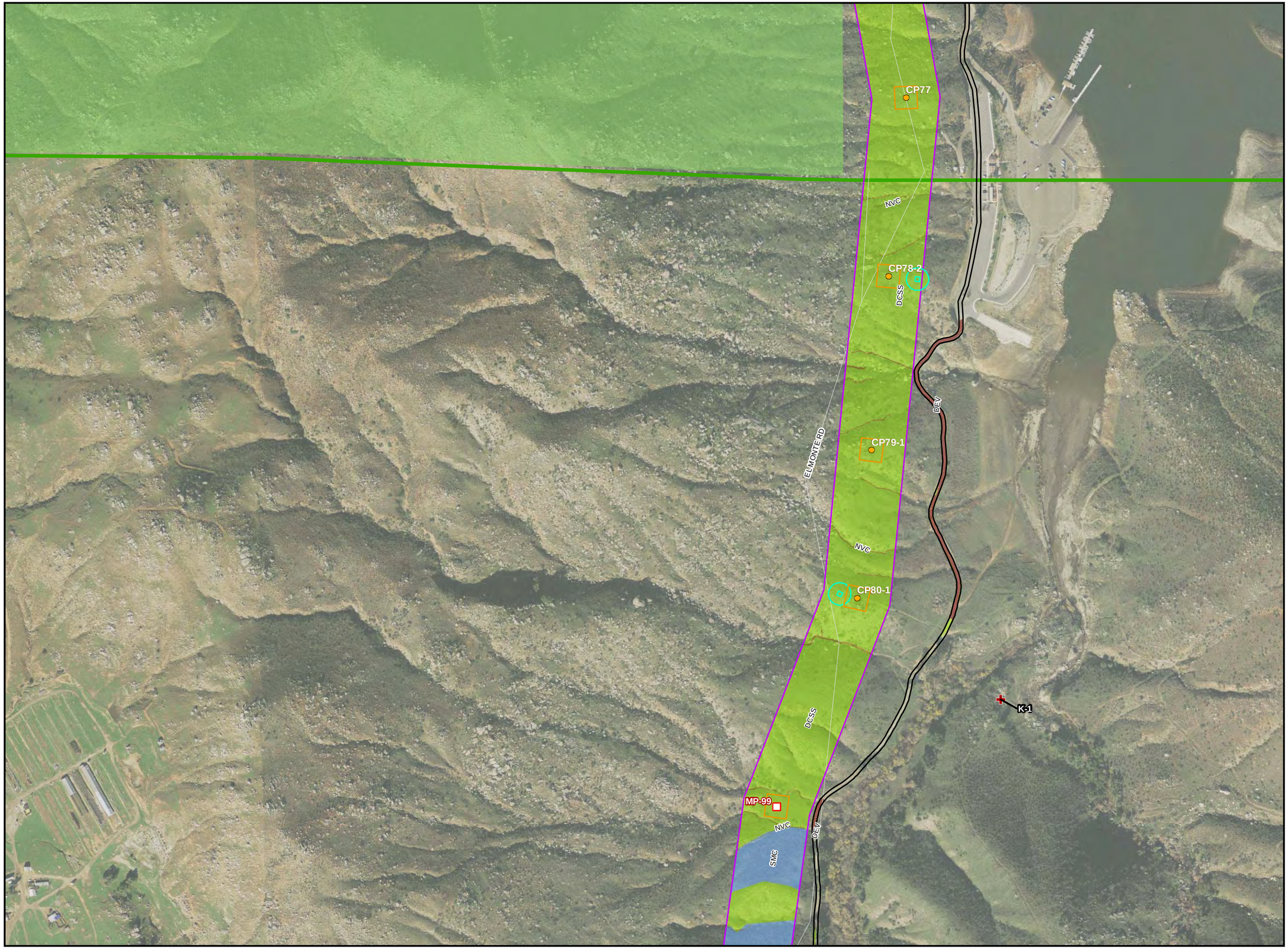
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-091 - 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
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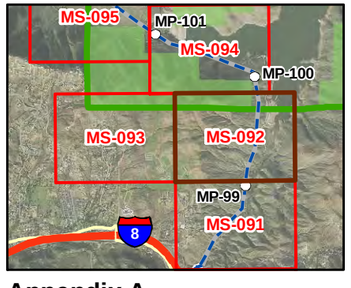
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

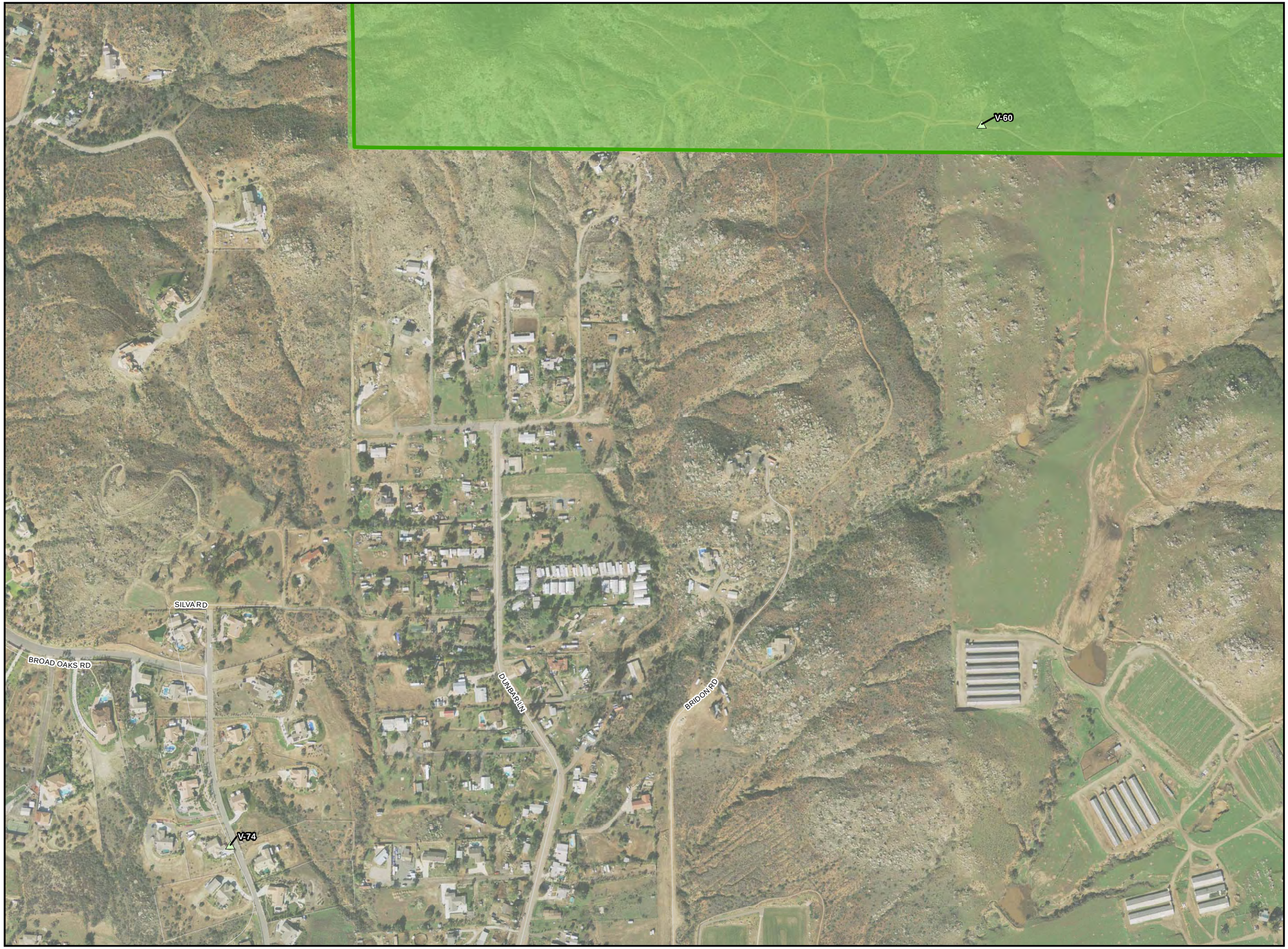
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-092 - 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
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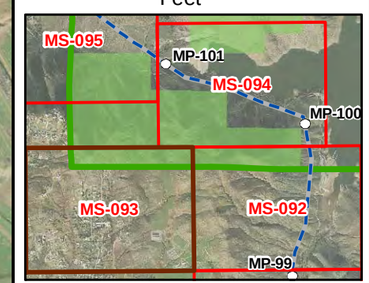
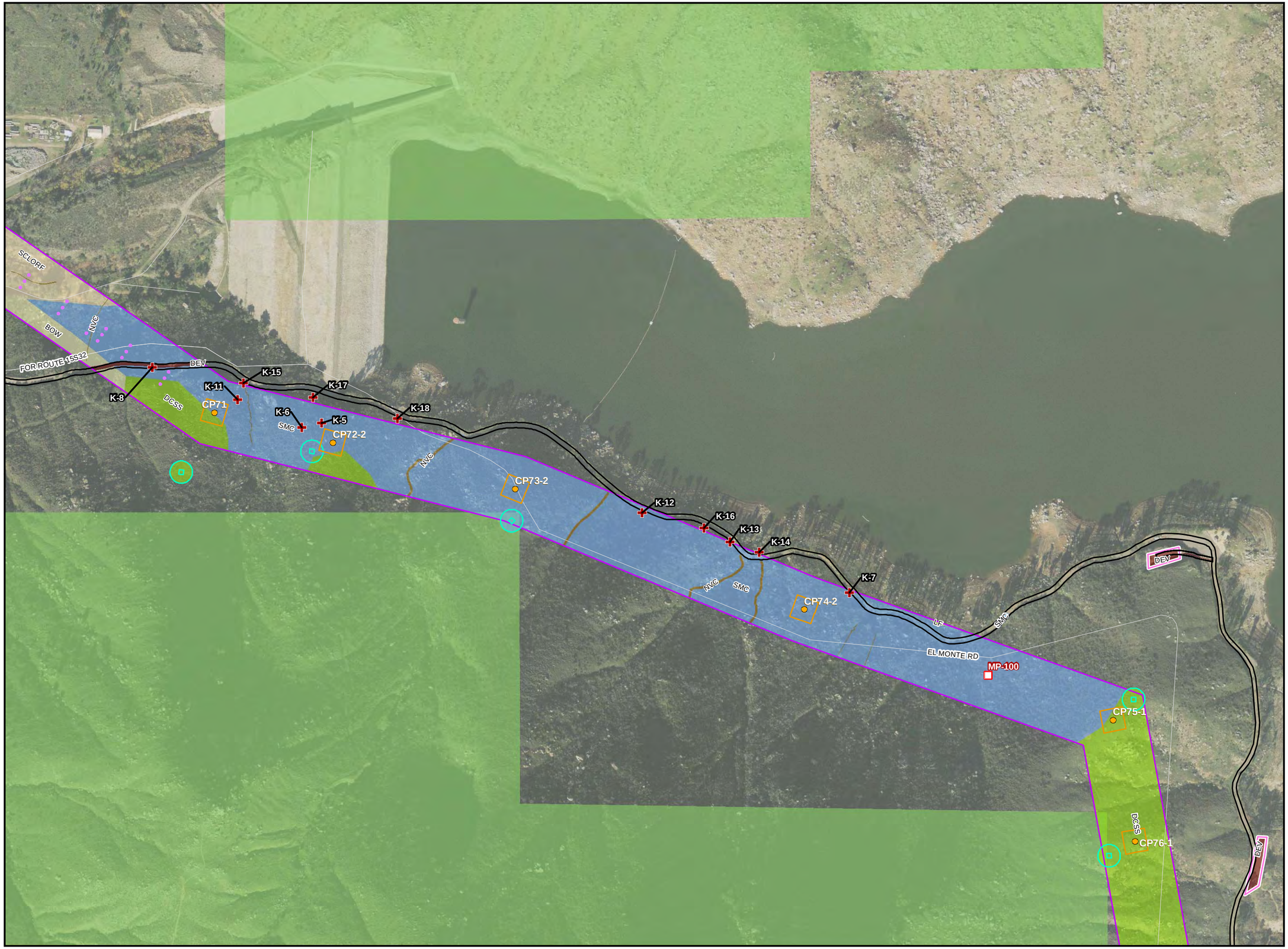
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-093 - 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
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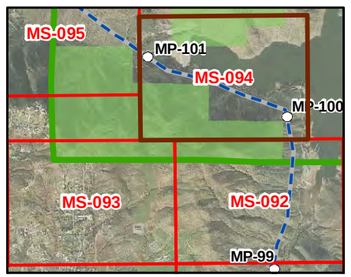
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

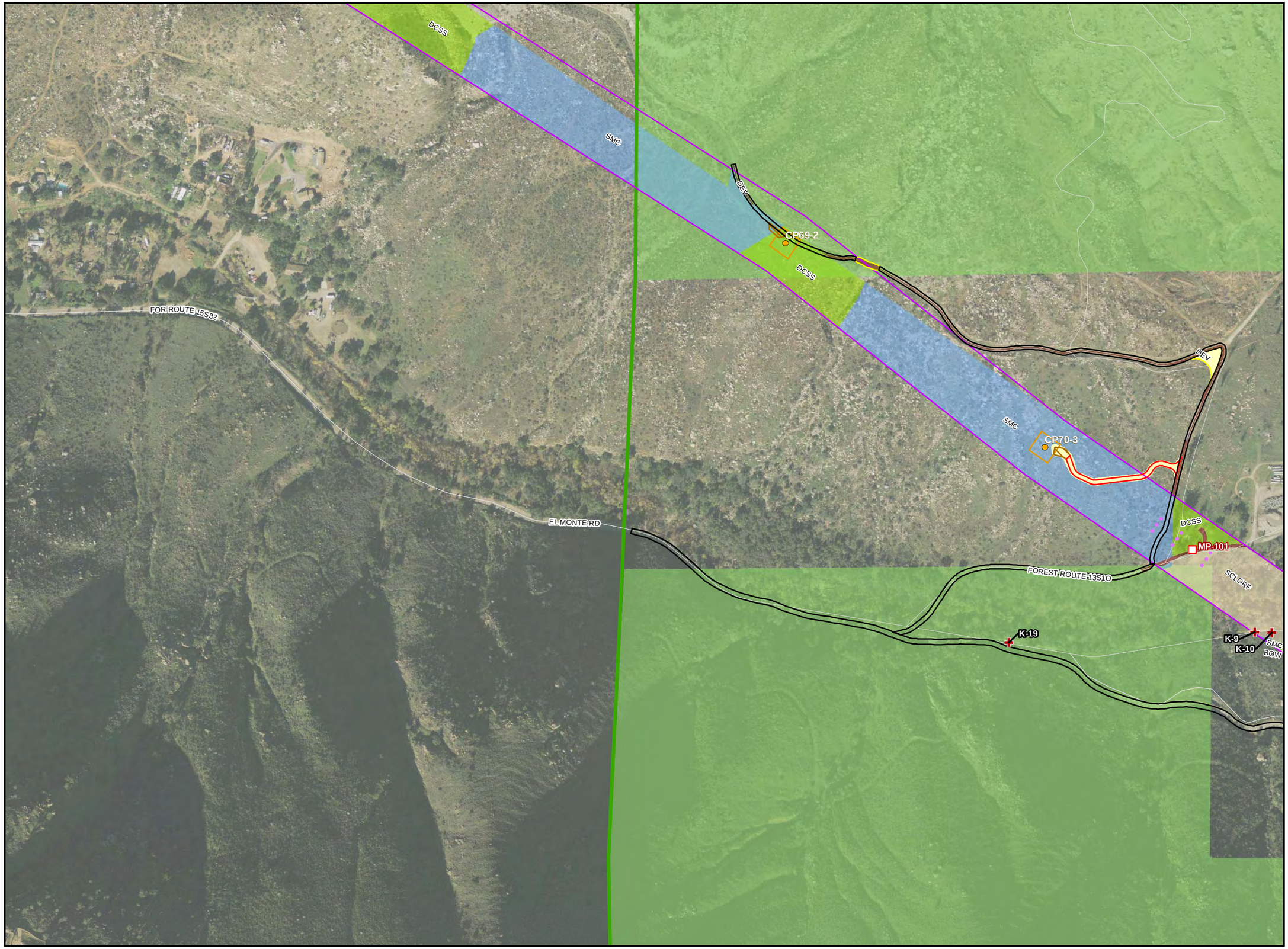
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-094 - 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
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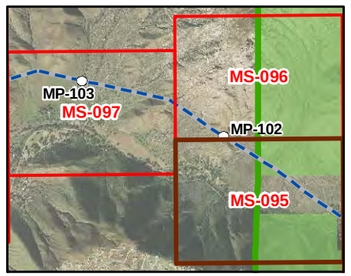
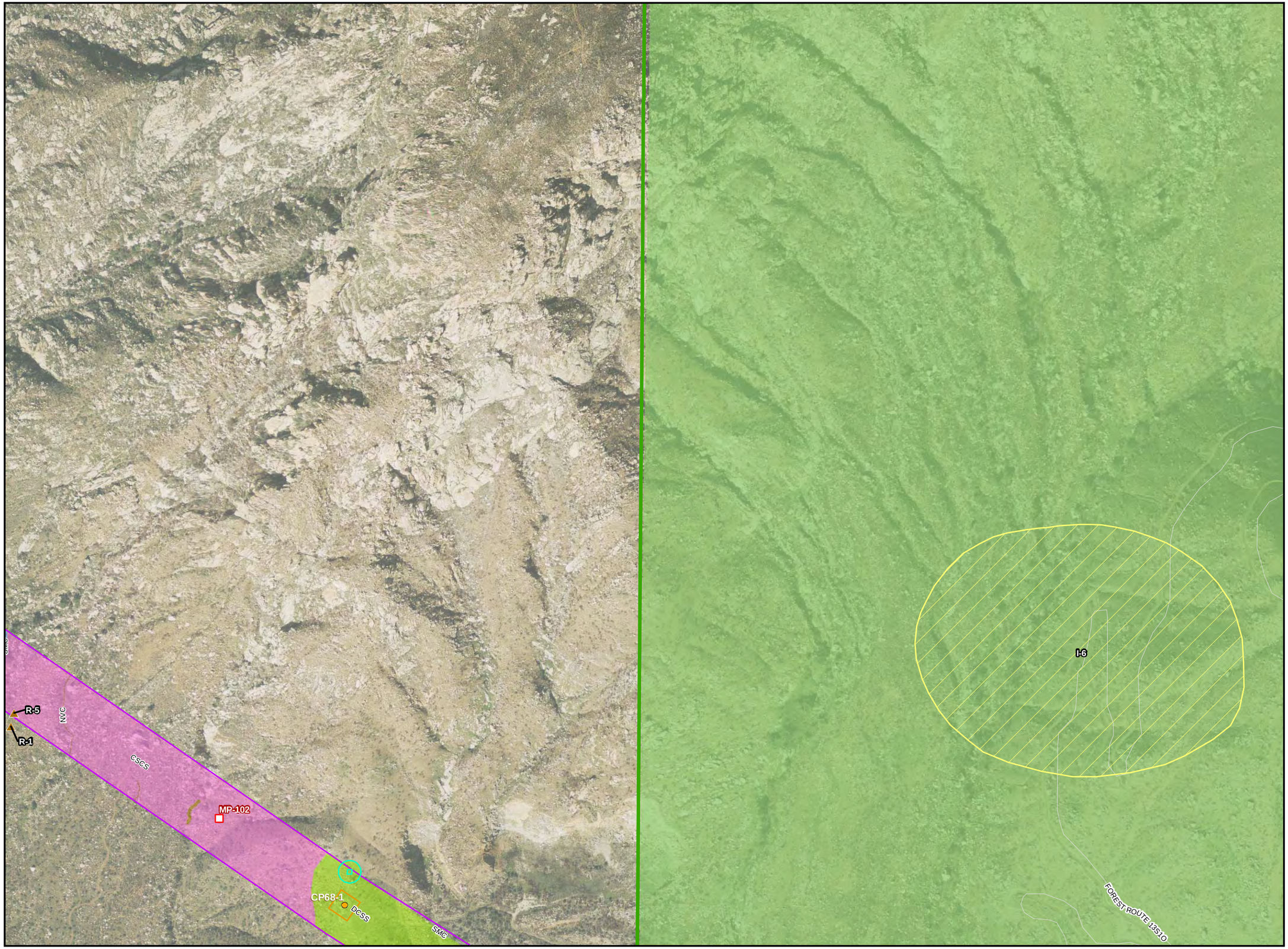
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-095 - 5/24/2010



SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
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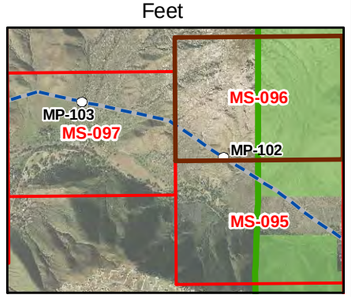
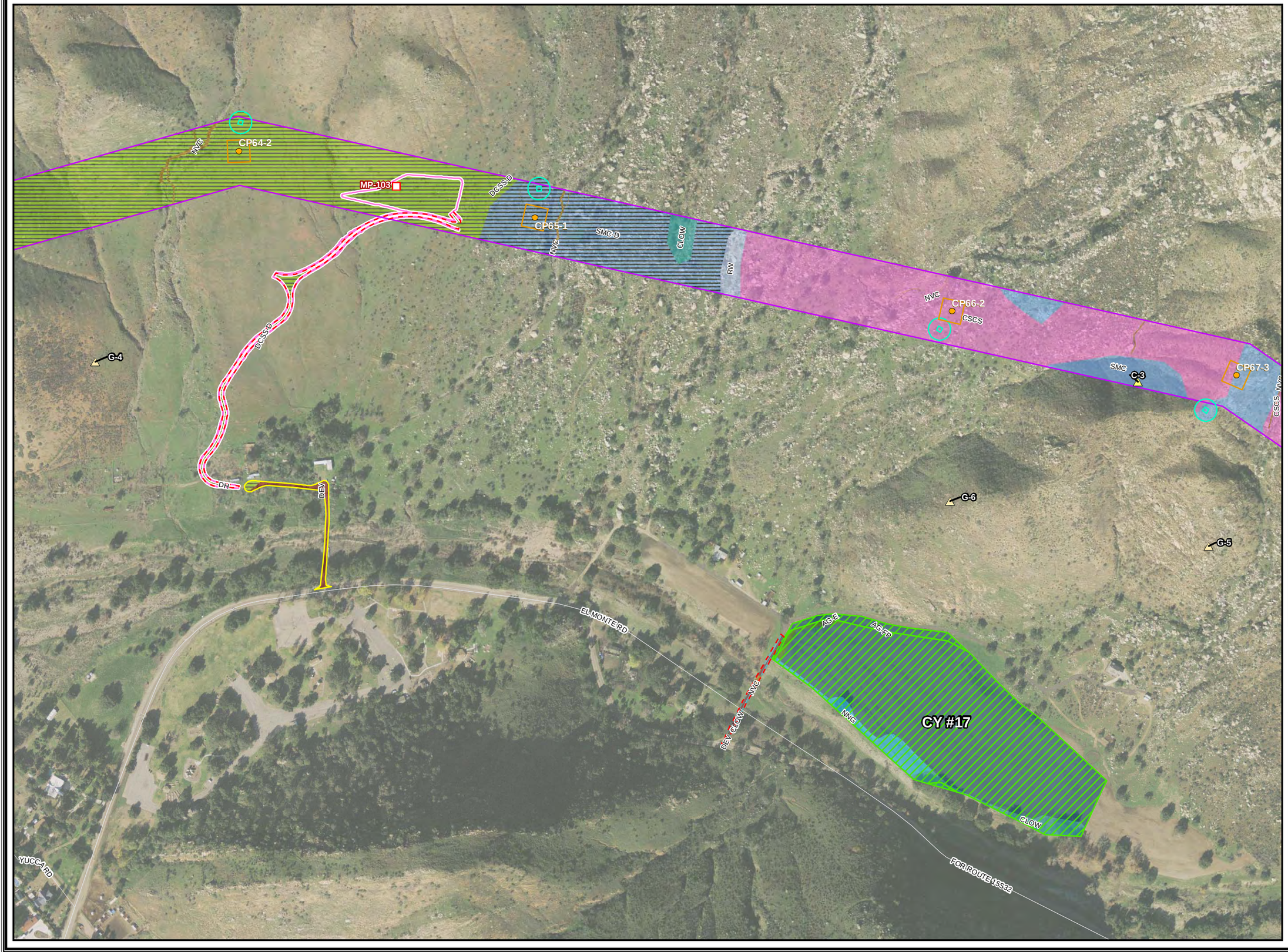
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-096 - 5/24/2010



SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
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- TSAP (Tower Staging Access Pad)
- Existing Road Needing Major Reconstruction
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- Structure Pad Area
- Grading Limits
- Construction Yard
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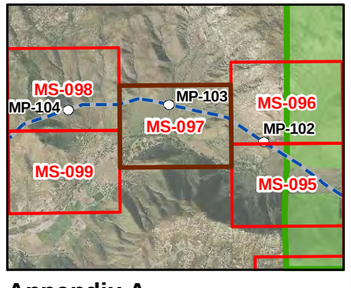
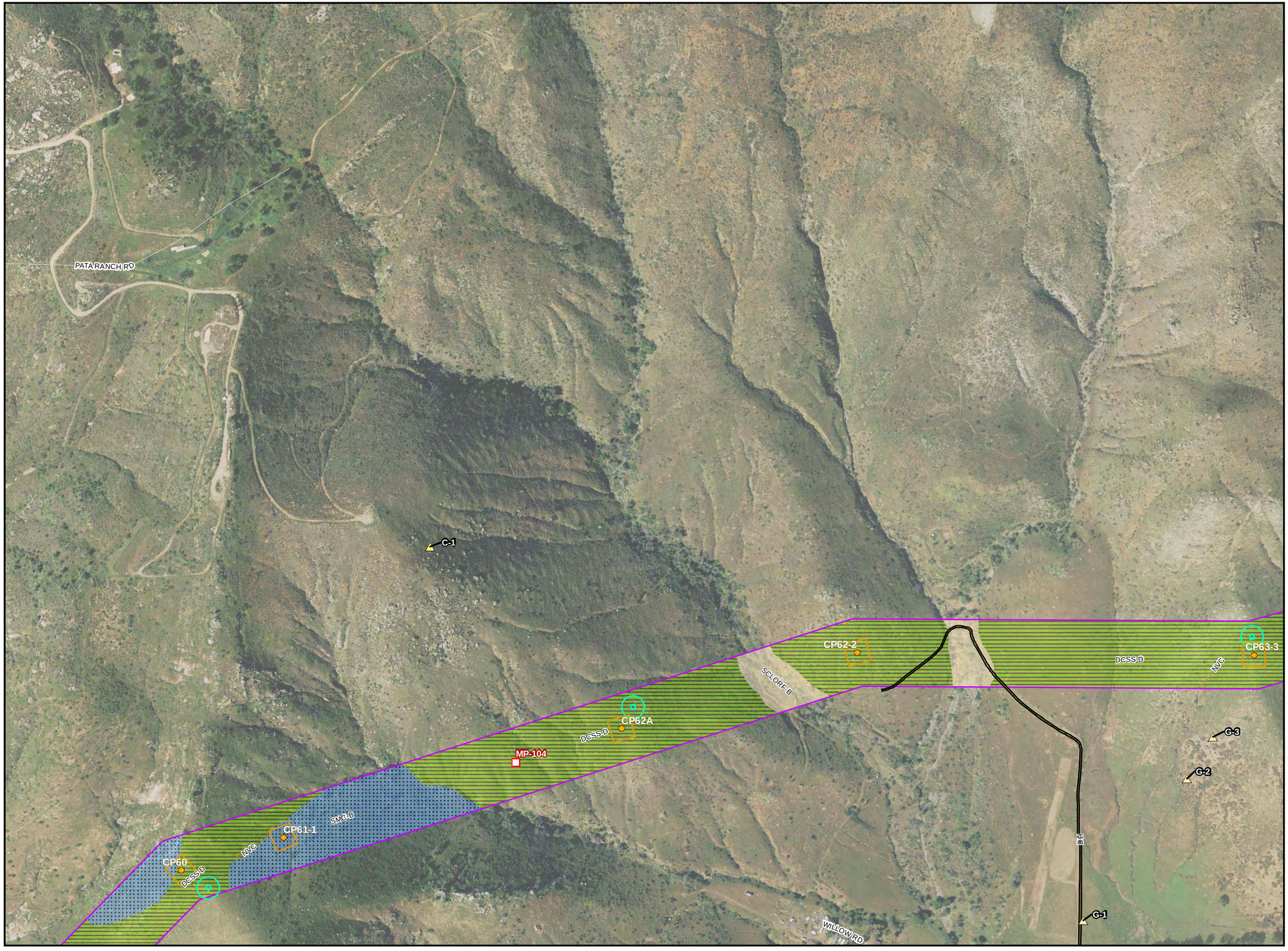
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-097 - 5/24/2010



SUNRISE POWERLINK℠

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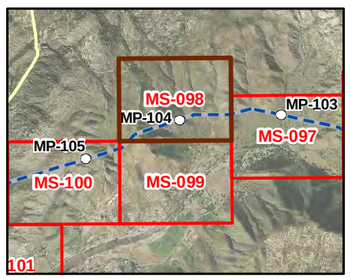
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



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USFS Sensitive Species Occurrences

MS-098 - 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
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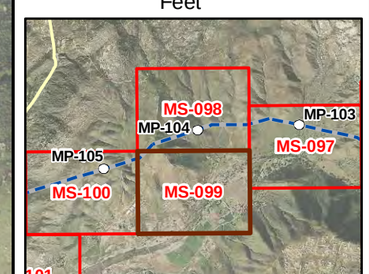
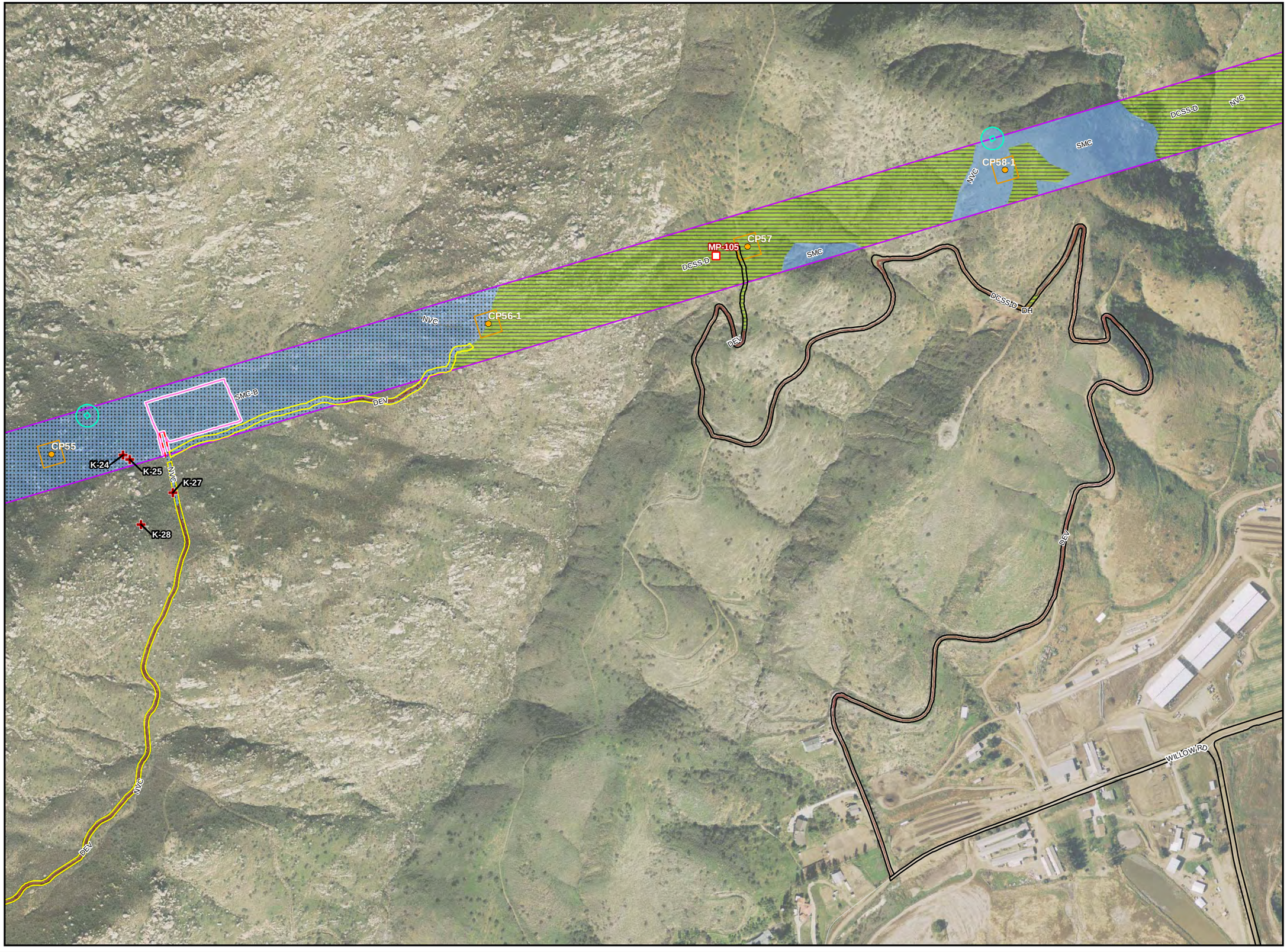
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-099 - 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
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- Maintenance Pad
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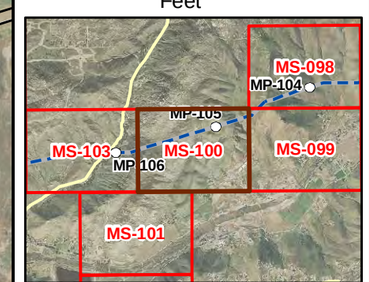
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-100 - 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
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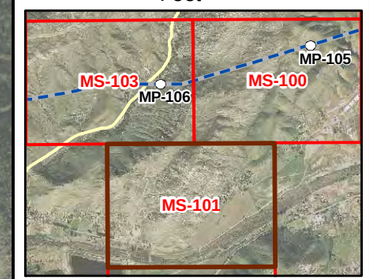
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive Species Occurrences
MS-101 - 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
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- 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-102 - 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
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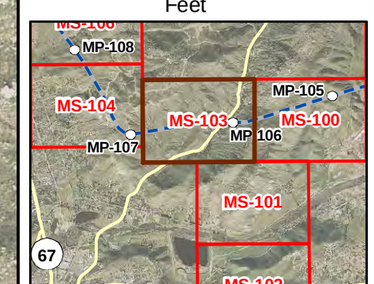
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



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USFS Sensitive Species Occurrences

MS-103 - 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
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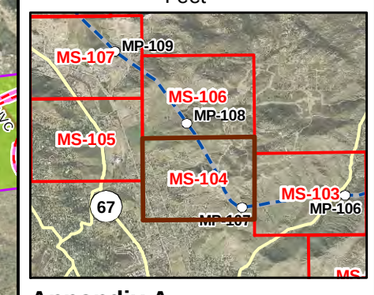
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-104 - 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
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- Maintenance Pad
- Structure Pad Area
- Grading Limits
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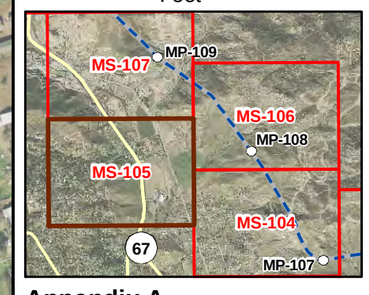
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

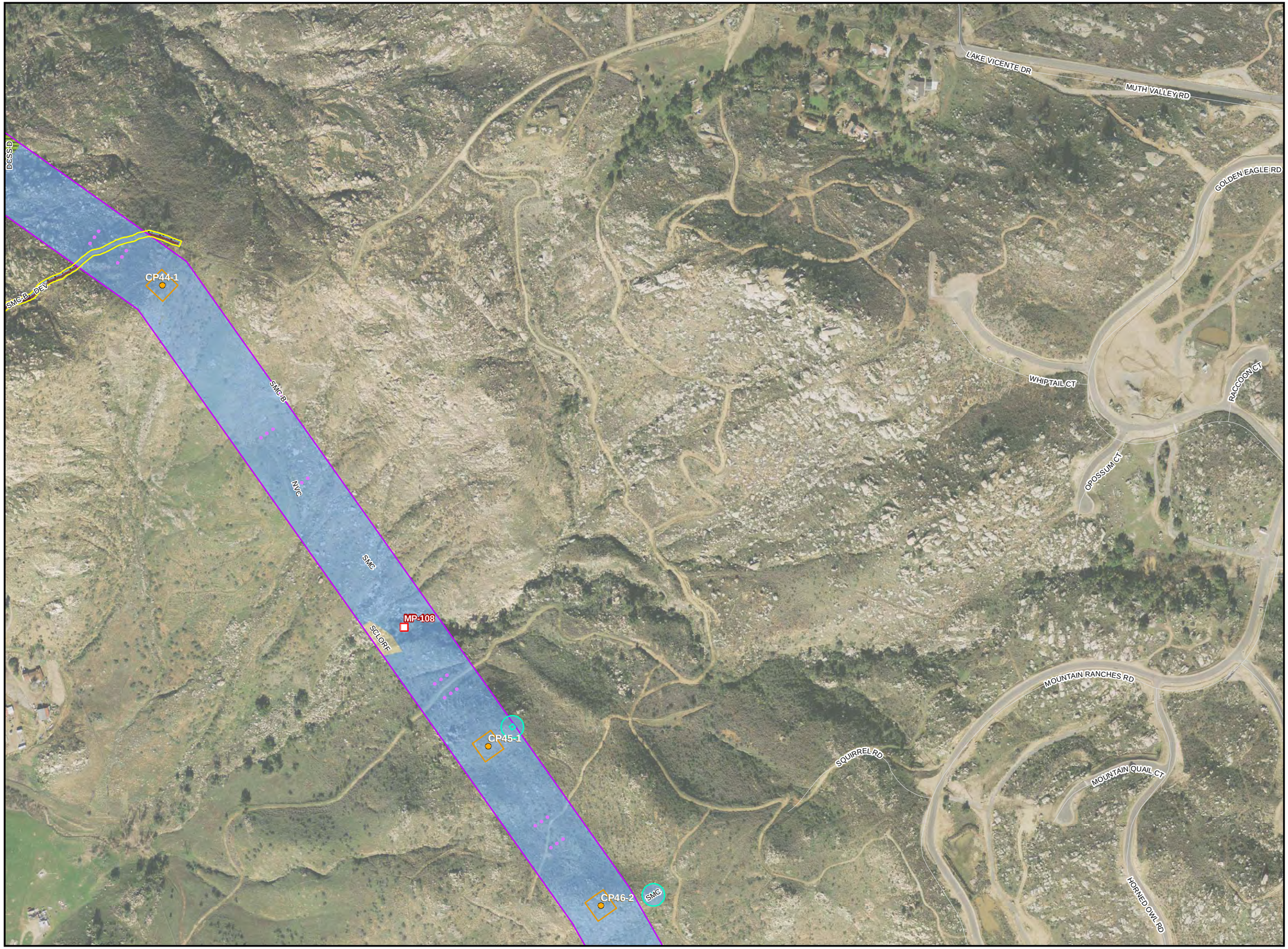
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-105 - 5/24/2010



SUNRISE POWERLINK℠

- Mile Marker
- Current Sunrise Structure
- Guard Structure
- TSAP (Tower Staging Access Pad)
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- Existing Road Needing Minor Grading
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- Construction Yard
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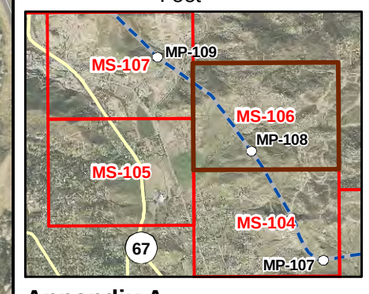
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-106 - 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
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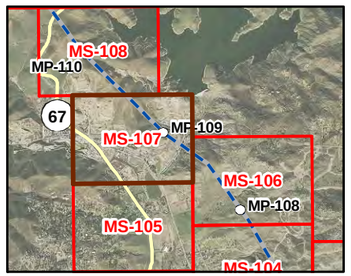
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive
Species Occurrences
MS-107 - 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
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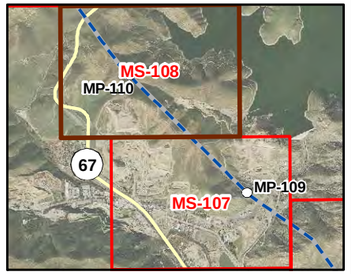
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

Feet



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USFS Sensitive Species Occurrences

MS-108 - 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
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- Suncrest Substation
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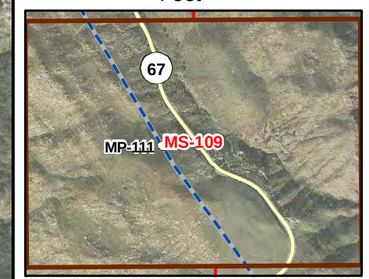
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800
Feet



Appendix A
USFS Sensitive Species Occurrences
MS-109 - 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
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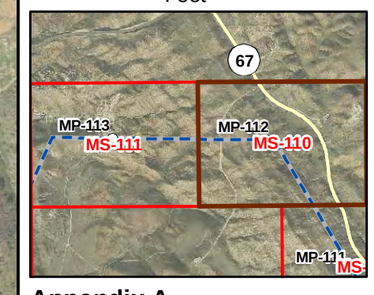
- Existing Road Ready to Use
- Suncrest Substation
- Substation Impact Area
- Maintenance Pad
- Structure Pad Area
- Grading Limits
- Construction Yard
- Temporary Pull Site
- Structure Work Area
- Cleveland National Forest Congressional Boundary
- USFS Owned Land

0 400 800

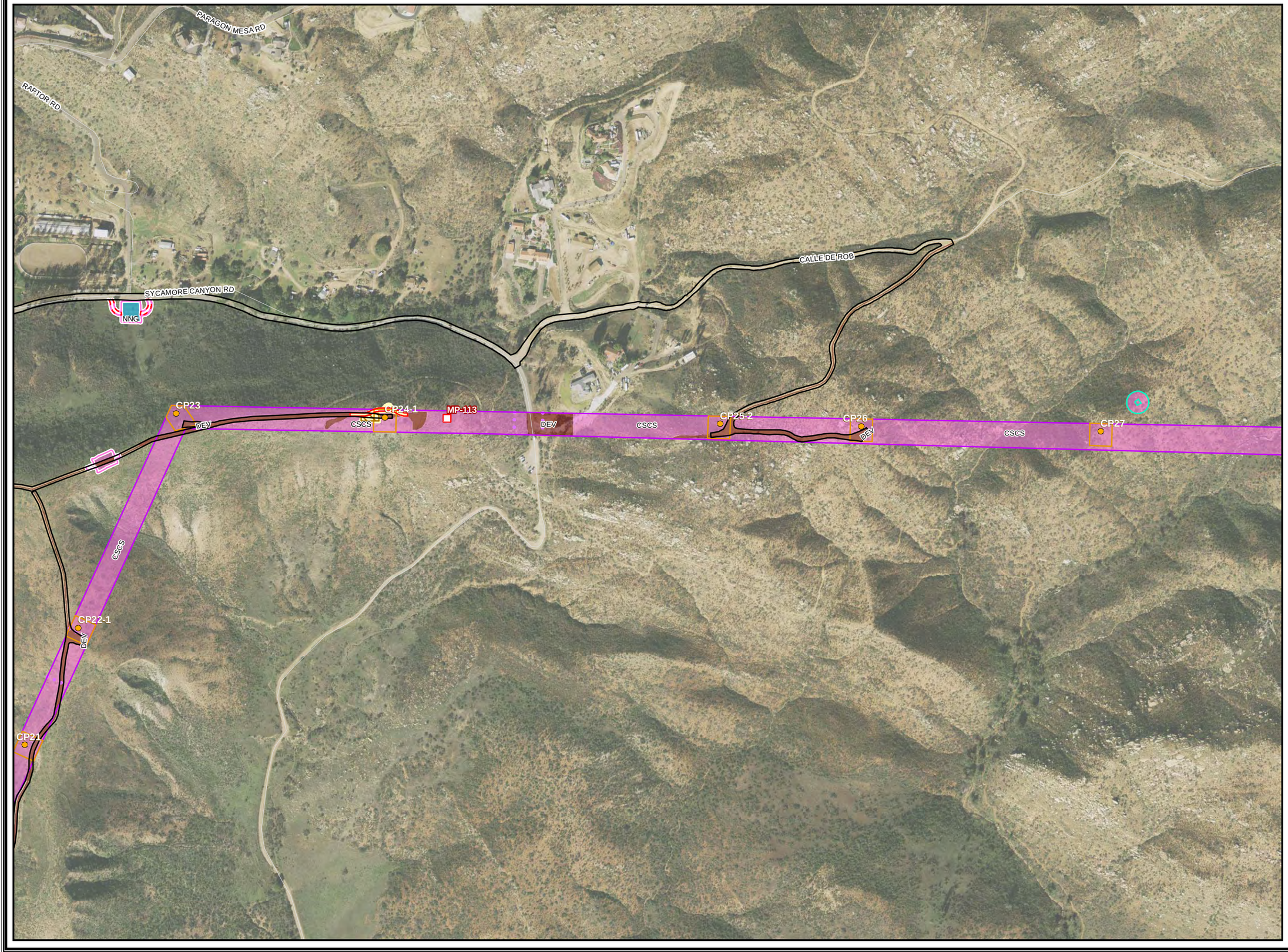
Feet



Appendix A

USFS Sensitive Species Occurrences

MS-110 - 5/24/2010

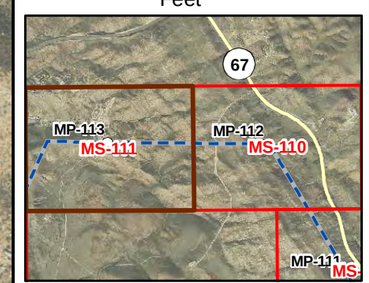


SUNRISE POWERLINK℠

- 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

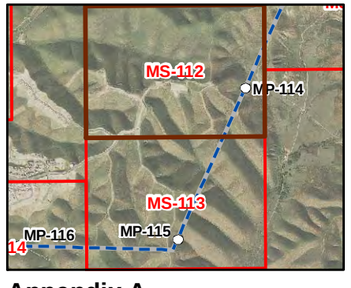
USFS Sensitive Species Occurrences

MS-111 - 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



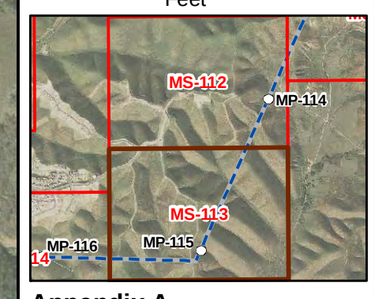
Appendix A
USFS Sensitive
Species Occurrences
MS-112 - 5/24/2010

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

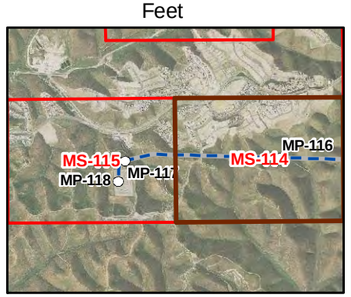
USFS Sensitive Species Occurrences

MS-113 - 5/24/2010

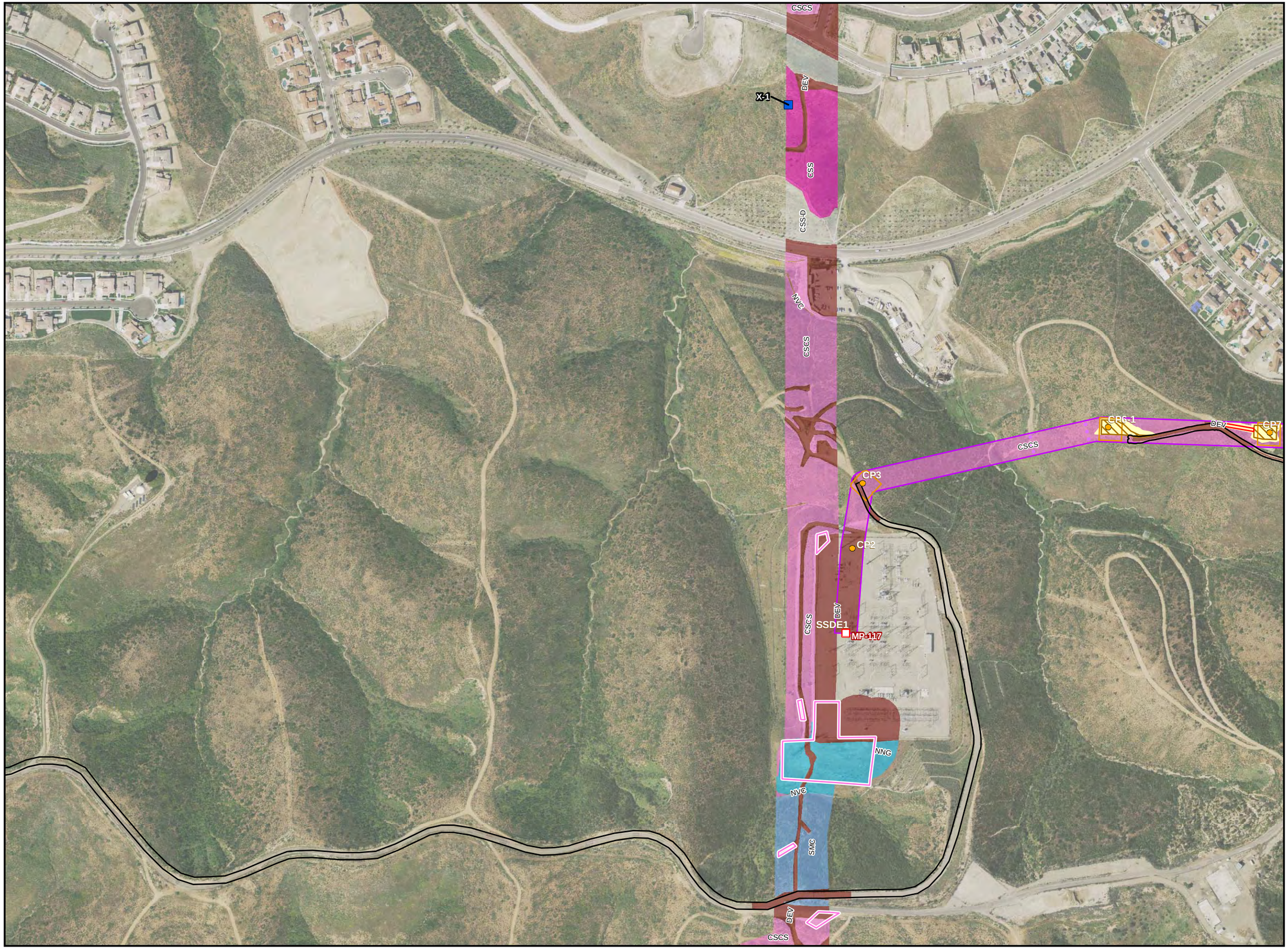
SUNRISE POWERLINK℠

- 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-114 - 5/24/2010

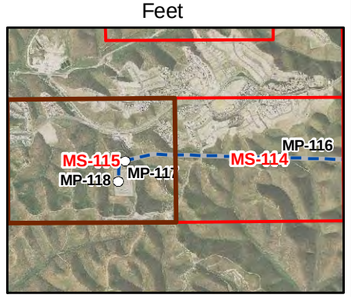


SUNRISE POWERLINK℠

- 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-115 - 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-116 - 5/24/2010

APPENDIX B – LIST OF PREPARERS AND BIOLOGISTS AND RESUMES OF LEAD AUTHORS AND BIOLOGISTS

List of Biological Evaluation Authors and Lead Field Biologists

Name	Title/Role
Chambers Group, Inc.	
Kris Alberts	Biologist/BE contributor, Lead field biologist
Nichole Cervin	Biologist/BE contributor
Damien Edwards	Biologist/BE author, field biologist
Rob Fletcher	Biologist/BE author, field biologist
Linette Lina	Biologist/BE contributor, field biologist
Lisa Louie	Biologist/BE author
Seth Reimers	Biologist/BE contributor, field biologist
Shannan Shaffer	Biologist/BE author
ICF International	
Scott Boczkiewicz	Biologist/BE author
RECON Environmental, Inc.	
Anna Bennett	Biologist/BE contributor, field biologist
Teresa Gonzales	Biologist/BE contributor, field biologist
Robert MacAller	President, Principal/BE author
Mike Nieto	Project Biologist/ BE author, Lead field biologist
Fred Roberts	Biologist/BE contributor, field biologist
Lee Sherwood	Regional Director, CEQA Advisor/BE author
Lance Unverzagt	Environmental Analyst/BE author
San Diego Natural History Museum	
Drew Stokes	Biologist/BE author, field biologist

Note: Resumes attached for BE Authors and Lead Field Biologists

KRIS ALBERTS

Biologist

Mr. Alberts has 12 years of experience conducting and managing biological surveys for many federally- and state- listed endangered species. As a senior wildlife biologist, he has conducted surveys and nest monitoring for federally and state- listed species including least Bell's vireo, coastal California gnatcatcher, burrowing owl, southwestern willow flycatcher, summer tanager, yellow warbler, nesting raptors, Stephen's kangaroo rat, Quino checkerspot butterfly, coast range newt, California red-legged frog, arroyo toad, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, and desert tortoise. He also has conducted diurnal and nocturnal bat surveys, bat exclusions, bat house installation and monitoring, in-stream assessments, and fish surveys.

Key Strengths

12 years of Experience in Southern California
Focused/Protocol Plant and Wildlife Surveys
Biological Resource Analysis and Management
Field Crew Management
Wetland/Jurisdictional Delineations
San Diego County Multiple Species Conservation Plan (MSCP)
Multiple Methods of Vegetation Sampling
Vegetation Mapping
Extensive Knowledge of Flora and Fauna of Southern California
Biological Assessments (Section 7)
Habitat Restoration Programs
Construction Mitigation Monitoring
Extensive Working Knowledge of Regulations/ Guidelines
Section 1602/401/404 permitting

As a senior botanist, he has worked extensively in many southern California vegetation communities conducting line transect, point intercept, and stacked cube sampling, community mapping, species identification, and focused surveys. He has performed vernal pool, riparian, and coastal sage scrub restorations as well as exotic species removal programs. Combining his wildlife skills with his botany skills, he has conducted habitat assessments and focused wildlife surveys throughout San Diego, Orange, Los Angeles, San Bernardino, Riverside, and Imperial counties. As a wetland scientist, he has performed wetland delineations and jurisdictional determinations in Mentone, Crafton, Diamond Bar, San Clemente, and the Salton Sea area of Riverside. Mr. Alberts also has investigated environmental impacts to existing or potential biological resources by construction activities, noise, and proposed developments. He has assisted with the implementation of mitigation programs for large-scale projects and mitigation compliance throughout southern California. He has authored and assisted with numerous biological documents, including reports on long-term federal projects and Biological Assessments for Section 7 consultation with USFWS. As a wildlife biologist, botanist, and group manager for previous federal projects, his responsibilities have included survey coordination, staff supervision, data collection, technical report writing, interacting effectively with resource/regulatory agency personnel, maintaining client communication, and meeting project deadlines.

RELEVANT EXPERIENCE

Environmental and Monitoring Support Services for the Sunrise Powerlink (SRPL) Project, San Diego Gas & Electric, San Diego and Imperial Counties. Field coordinator. Member of the engineering and construction management team for the Sunrise Powerlink Project. He is Responsible for coordination and logistics with survey crews and engineers. He performed focused surveys for sensitive species in the Cleveland National Forest, coastal California gnatcatcher, and Quino Checkerspot butterfly. In addition he performed preliminary wetland determinations along the project route and worked with the design staff to minimize or avoid jurisdictional features. The project traverses approximately 120 mi between the El Centro area of Imperial County and southwestern San Diego County. The proposed ROW for the project crosses private and Federal Lands (BLM, USFS, and Department of Defense).

On-Call Environmental Consulting and Biological Services, Wood to Steel Pole Replacement, San Diego Gas & Electric Company, San Diego County. Senior Biologist. This project involves the replacement of existing wood poles in undeveloped or rural, fire-prone areas with equivalent steel poles to improve system reliability in high risk fire zones. The project consists primarily of pole replacements in existing SDG&E right-of-ways, associated road maintenance to provide access to those poles, pulling sites required for reconductoring and temporary construction staging areas to support the replacement of

Education
B.S., Natural Resources and Environmental Sciences, University of Illinois, Urbana-Champaign; 1996

Registrations
Authorized for coastal California gnatcatcher, Southwestern willow flycatcher, and least Bell's vireo, USFWS Permit #TE-039640-2
California Dept. of Fish & Game Scientific Collector's Permit #SC-009155
Flat-tailed Horned Lizard authorization to take, possess and transport, 2007
Desert Tortoise Council Survey Techniques Workshop, 2007
Southwestern Willow Flycatcher Survey Training, Southern Sierra Research Station, 2007
Wetland Training Institute certified, 2007

existing wood poles. Responsible for surveys, reporting, biological monitoring and reporting and contractor training.

Environmental Assessment/Initial Study/Mitigated Negative Declaration (EA/IS/MND), Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, AT&T, sub to Forkert Engineering & Surveying, Inc., San Bernardino and Clark County. Senior Biologist. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise in accordance with protocol set forth by the USFWS. The project involves permitting applications, conducting biological surveys, vegetation mapping, and jurisdictional delineations. Conducted general biological reconnaissance surveys to map the vegetation communities, to document the existing biological resources, and to assess the habitat for its potential to support sensitive plant and wildlife species. Identified and delineated areas of the project site that fell under USACE, RWQCB, and CDFG jurisdiction.

Ecological Screening Evaluation, Leathers Geothermal Facility, Calipatria, Iris Environmental, sub to CalEnergy, Imperial County. Chambers Group performed an Ecological Screening Evaluation as part of Preliminary Endangerment Assessments for geothermal plants near the Salton Sea. Habitats. Sensitive species in the area were identified, and a pathway assessment was done to identify the potential for contact between biota and chemicals of concern.

Environmental Assessment (EA) of Monument Fuels Management Project, Snow Creek / Pinyon, Labat Environmental, Riverside County. Project Manager. Performed field surveys. Wrote Environmental Assessments. This project included a new literature review, field survey, and report updating on an EA for the Monument Fuels Management Project. Biologists and botanists conducted a standard bio-recon survey, with a focus on potentially-occurring sensitive plants or animals in the area.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure, San Bernardino and Imperial County. Senior Biologist. The project involved conducting biological surveys, vegetation mapping, and wetland delineations along 100-mile corridor. Services included reconnaissance surveys, focused sensitive species surveys (least Bell's vireo, southwestern willow flycatcher), and vegetation communities surveys and mapping within the 200- to 1000-foot right-of-way. Prepared a biotechnical report encompassing all baseline and focused surveys for this project.

Construction Monitoring and Biological Surveys, Water Pipeline Installation Project, MCB Camp Pendleton, Orion, San Diego County. Provided construction monitoring for the installation of 5.5 miles of fiber optic backbone on MCB Camp Pendleton. Backbone installation involved Horizontal Directional Drilling (HDD) under the Santa Margarita River. The project passed through sensitive habitat including riparian vegetation that provide habitat for threatened or endangered species including the southwestern willow flycatcher, least Bell's vireo and arroyo southwestern toad; focused surveys were conducted in the project area for each of these sensitive species. Pre-construction nesting bird surveys were conducted prior to ground-breaking activities, and vegetation removal monitoring was provided concurrently with willow tree relocation.

DAMIEN EDWARDS

Biologist

Mr. Edwards is a bilingual senior biologist with 10 years of multidisciplinary project management and technical experience in the environmental industry predominantly in the energy (utilities, wind power), airport (wildlife hazard management, Bird Aircraft Strike Hazard/BASH), public works, forestry, and military facilities sectors. He has diverse experience in the environmental profession including utility Right-of-Way (ROW) vegetation management/ California Public Utilities Commission (CPUC) compliance; project management performance; compliance with international, federal, state, and local regulations; natural resource management; development and implementation of environmental mitigation monitoring plans; as well as construction monitoring for complex construction (energy, linear) projects, and surveys for threatened and endangered wildlife and plant species following U.S. Fish and Wildlife Service (USFWS) and U.S. Forest Service (USFS) protocols in compliance with the Endangered Species Act (ESA). Mr. Edwards has managed biological resources surveys and impact assessments for sensitive resources, and he has experience coordinating with jurisdictional agencies and worked on assignments for some high profile clients (U.S. Navy, U.S. Air Force, Royal Air Force).

Mr. Edwards has conducted reconnaissance-level and detailed/protocol surveys for wildlife (birds, reptile and amphibians, mammals, fish) and plants, including federally and state listed species, investigated environmental impacts in terms of noise, air quality, water quality, fire, biological resources, written mitigation plans for large-scale complex projects, and performed restoration and mitigation compliance in the U.S. and internationally. Mr. Edwards' ability to adapt in different environments, aided by his Spanish skills, has allowed him to work in multiple countries, including managing Environmental Impact Assessments (EIA) projects for a new airport in South America, conducting ecological baseline studies for onshore and offshore wind farms in the Northeast U.S., and utility ROW vegetation management in central and southern California. Mr. Edwards' international experience includes natural resource management and wildlife conservation projects in Canada, Mexico, Honduras, Panama and Ecuador. In addition, he was involved in various forestry and restoration projects for the logging and oil sands industries.

Key Strengths
10 years of Environmental Research & Consulting experience
5 years of Wind Energy-Avian Projects Experience (Onshore & Offshore)
Utility ROW-Vegetation Management
Environmental Impact Analysis
Biological Resource Analysis & Management
Airport Wildlife Hazard Management
Construction Mitigation Monitoring
Focused / Protocol Plant & Wildlife Surveys & Monitoring
Scientific Diving
International Work Experience
Fluent in Spanish

RELEVANT EXPERIENCE

Environmental and Biological Monitoring Support Services for the Sunrise Powerlink (SRPL) Project 2009-2010, San Diego Gas & Electric (SDG&E), San Diego and Imperial Counties. Biological Monitor. Biological resources services in support of the 120-mile transmission line from SDG&E's Imperial Valley Substation near El Centro, Imperial County, to SDG&E's Peñasquitos Substation near Interstate 805, in coastal San Diego. The proposed Right-of-Way (ROW) for the project crosses private and Federal lands (BLM, USFS, and Department of Defense). Conducted biological compliance monitoring during the pre-construction period for vegetation management (utility danger tree surveys), topographic surveys, seismicity testing, and soil resistivity testing.

Generalized Tree Mitigation Plan Development for the Sunrise Powerlink (SRPL) Project, San Diego Gas & Electric, San Diego County, 2010. ISA-certified Arborist/ Biologist/ Author. Mr. Edwards prepared the Generalized Tree Mitigation Plan (GTMP) for the SRPL Project as part of the Master Habitat Restoration and Mitigation Plan (Master HRMP) for the mitigation obligations of the Project. The GTMP addressed the mitigation obligations and restoration options for all native tree species (coastal, woodland and desert trees) potentially impacted by the Project. The GTMP included: existing regulations and standards for the protection of trees, vegetation communities and other related biological resources; tree impact evaluation methods; mitigation; restoration areas; restoration treatment

Education
B.S., Forestry & Environmental Management, Univ. New Brunswick, Fredericton, Canada; 2001

Specialized Training/Certifications
Scientific Diving Methods & Rescue Diver Training (2008)
Project Management
Airport Wildlife Hazard Management (Embry-Riddle Aeronautical University, 2007)
Fish Identification: Fishes of the Caribbean (2007)
PADI Divemaster SCUBA Diver (2004)
Wilderness First Aid & First Lead (2004)
ISA Certified Arborist (International Society of Arboriculture, 2002)
ISA Certified Arborist (2009)

Professional Conferences
Solar Power International (SPI) Conference (2009)
American Wind Energy Association (AWEA) WINDPOWER Conference (2008)
Bird Strike Committee USA/Canada Conference (2007)

methods; maintenance and monitoring methods, and reporting requirements. Mr. Edwards authored, edited, and compiled all pertinent tree and tree-related information and data used in the GTMP.

On-Call Environmental Consulting and Biological Services, Wood to Steel Pole Replacement, San Diego Gas & Electric, San Diego County, 2009. Technical Reviewer. This Project involves the replacement of existing wood poles in undeveloped or rural, fire-prone areas with equivalent steel poles to improve system reliability in high risk fire zones. The project consists primarily of pole replacements in existing SDG&E right-of-ways, associated road maintenance to provide access to those poles, pulling sites required for reconductoring and temporary construction staging areas to support the replacement of existing wood poles. Mr. Edwards provided a peer review of the Pre-activity Survey Report (PSR) which analyzed the impacts to any listed and sensitive species along the existing Tie-Line (TL) 685 during the proposed activities.

Utility Vegetation Management, Pacific Gas & Electric (PG&E), Marin, Napa & Sonoma Counties, California, 2002-2003. Utility Forester/ ISA Certified Arborist. Worked directly with the client and their customers concerning vegetation management concerns. He inspected electric utility and transmission right-of-ways (ROW) for compliance with State (California Public Utilities Commission [CPUC]) required clearance standards; identified needed tree and brush control per the International Society of Arboriculture (ISA) best management practices (pruning guidelines for trees near utilities); and scheduled tree and brush removal; and notified the jurisdictional agencies or interested parties of tree-related issues. In addition, managed special projects for utility vegetation management, including negotiation with property owners to achieve appropriate line clearance and removal of hazard/non-compliant trees near electric/transmission lines.

Review of Granite Mountain Wind Energy Project Environmental Impact Statement (EIS), BLM, Sub to Labat Environmental, Inc., San Bernardino County –2009-2010. Project Manager. The proposed project will include the installation of up to 28 2.3-megawatt (MW) Siemens wind turbines on a permanent project footprint of approximately 91.2 acres. The project is anticipated to produce approximately 185,000 MWh per year and will require the construction of a new access road, project substation, overhead transmission line, interconnection to the Southern California Edison (SCE) 230 kV transmission system, operations and maintenance (O&M) building, a temporary office, and temporary staging areas. Labat Environmental contracted Chambers Group to conduct a review of the administrative draft and final EIS and associated documents for the project proposed to be sited on BLM administered public land and private land located approximately 14 miles east of Victorville. Specifically, Mr. Edwards managed/ performed the technical review of the biological resources present at the project site, potential impacts, and mitigation measures proposed to assure regulatory compliance and lessen the project impacts to biological resources at or near the project site. Revisions were submitted to the client to be incorporated in the Final EIS.

ROBERT FLETCHER

Biologist

Mr. Fletcher has more than five years of experience participating in and conducting terrestrial and aquatic/marine studies, with a comprehensive background in both collecting data and performing biological monitoring surveys. He has worked with protected and sensitive fish species such as the Santa Ana sucker, Santa Ana speckled dace, arroyo chub, rainbow trout, and southern steelhead, as well as multiple species of marine fish. He has also conducted stream and sediment sampling for macro-invertebrates, passive and active acoustic tracking of marine fishes, electro-fishing surveys, and environmental compliance monitoring. In addition, he has strong scientific writing skills and the ability to communicate complex scientific information to non-technical personnel.

Key Strengths
5 years of experience in Southern California
Construction Mitigation Monitoring
Biological Surveys
Vegetation Mapping
San Diego County Multiple Species Conservation Plan (MSCP)

Education
M.S., Marine Biology, University of Stirling (Scotland); 2005
B.A., Environmental Studies, University of California, Santa Barbara; 2001

Registrations, Certifications, and Affiliations
SCUBA certified through SCUBA Schools International since 2000
Surveying, Monitoring and Handling Techniques Workshop, Desert Tortoise Council, 2007
California Department of Fish and Game certified *Caulerpa* surveyor
Flat-Tailed Horned Lizard Survey Training Certification
40-Hour HAZWOPER worker certification.
Railroad Safety Training course, Union Pacific Railroad
Marine Corps Certified Range Control OIC/RSO (MCB Camp Pendleton)

RELEVANT EXPERIENCE

Environmental and Monitoring Support Services for the Sunrise Powerlink (SRPL) Project, San Diego Gas & Electric (SDG&E), San Diego and Imperial Counties. Performed focused surveys for forest service sensitive speces and assited with the prepartion of the Biological Assessment/biological Evaluation.

Biological Assessment/Environmental Assessment (BA/EA), International Border Fuel Break Project, Bureau of Land Management (BLM), South Coast Field Office, sub to Labat Environmental, Inc., Tecate, San Diego County. Chambers Group biologists ground-truthed the findings and results of bio-reconnaissance and focused surveys undertaken by other firms in spring and summer 2008 and to completed environmental documentation related to a fuel reduction project. The project involved the construction and maintenance of a 35-mile long fuel break along existing roads and historic fire breaks at the US/Mexico border primarily on BLM-managed lands. Chambers Group biologists prepared an updated vegetation map, assessed the potential for the site to contain sensitive species, and surveyed the entire route. Associated documentation that Chambers Group prepared immediately following the surveys included a Biological Assessment and an Environmental Assessment.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, UPRR Track Upgrade Project, Thermal, CA to Yuma, AZ, Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure, San Bernardino and Imperial Counties. Biologist. The project involved conducting biological surveys, vegetation mapping, and wetland delineations along a 100-mile-long corridor. Services included reconnaissance surveys, focused sensitive species surveys (Yuma clapper rail surveys, California black rail surveys, least Bell's vireo, southwestern willow flycatcher, Coachella Valley fringe-toed lizard surveys, desert tortoise presence/absent surveys, desert pupfish, diurnal and nocturnal bat surveys, Peirson's milk vetch and Algodones Dunes sunflower surveys), and vegetation communities surveys and mapping within the 200 to 1,000 foot right of way.

LISA P. LOUIE

Biologist

Ms. Louie has a strong background in environmental management. She has prepared and provided support for environmental documents in compliance with the NEPA and CEQA. Her experience includes EISs, EAs, ISs, EIRs, and NDs, as well as integrated NEPA/CEQA documents. She is experienced in coordinating with state and federal resource agencies and has successfully negotiated mitigation and conservation requirements. In addition, Ms. Louie is experienced in the preparation of, and coordination for, permit applications that include CWA 404 (individual and nationwide) permits and 404(b)(1) evaluations for the USACE, CWA Section 401 water quality certifications for the Regional Water Quality Control Board, Section 1600 streambed alteration agreement applications for the CDFG, coastal development permits and consistency determinations for the California Coastal Commission, and essential fish habitat, as well as mitigation and monitoring plans, for the National Marine Fisheries Service.

Key Strengths
10 years experience in Southern California
CEQA/NEPA documentation
Regulatory Compliance and Permitting (CWA Sections 401 and 404, SAA Sections 1600-1602)
Experience with California Coastal Commission and California State Lands Commission
Wetland and Jurisdictional Delineations

RELEVANT EXPERIENCE

Environmental and Monitoring Support Services for the Sunrise Powerlink (SRPL) Project, San Diego Gas & Electric (SDG&E), San Diego and Imperial Counties. Senior Biologist. She provided project assistance with biological surveys and monitoring, including recommendations on preliminary wetland determinations to minimize or avoid jurisdictional features. The project traverses approximately 120 mi between the El Centro area of Imperial County and southwestern San Diego County. The proposed ROW for the project crosses private and Federal Lands (BLM, USFS, and Department of Defense).

Environmental Impact Statement/Environmental Impact Report (EIS/EIR), San Clemente Shoreline Protection Project, U.S Army Corps of Engineers (USACE), sub to Noble Consultants, San Clemente, Orange County. Project Manager. Preparing a joint EIS/EIR to provide the analysis of impacts of the proposed action and alternatives and addressing the ongoing problem of beach erosion, which is threatening the stability of City facilities, private property, and a major southern California commuter rail corridor. The document will examine, at a minimum, a beachfill/nourishment alternative for addressing the San Clemente beach erosion problem. The EIS/EIR addresses both the site-specific and cumulative impacts of the proposed project. Services also included preparation of an Air Conformity Determination (as necessary), Coastal Consistency Determination, 404(b)(1), NEPA and CEQA notices, and the mitigation monitoring and reporting program, as well as coordination with federal and state agencies.

Environmental Documentation, Biological Assessment/Environmental Assessment (BA/EA), International Border Fuel Break Project, Tecate, Bureau of Land Management (BLM), South Coast Field Office, sub to Labat Environmental, Inc, San Diego County. Senior Biologist. Chambers Group prepared a Biological Assessment and an Environmental Assessment for the project, which involved the construction and maintenance of a 35-mile long fuel break along existing roads and historic fire breaks at the U.S./Mexican border, primarily on BLM-managed lands. Chambers Group biologists also prepared an updated vegetation map, assessed the potential for the site to contain sensitive species, and surveyed the entire route.

Mitigation Monitoring Implementation Plan (MMIP), Environmental Compliance Services, Pacific Street Bridge, Oceanside, Oceanside, sub to Harris & Associates, San Diego County. Regulatory Specialist, QA/QC. Chambers Group staff conducted monitoring services during construction to assure compliance with the EIR and all environmental permits. Chambers Group prepared a MMIP, Environmental Awareness Program, and conducted environmental compliance monitoring during the two year construction period for the bridge.

Education
M.S., Marine Science, University of San Diego; 2005
B.S., General Biology, University of California, San Diego; 1999

Related Training
California Rapid Assessment Method (CRAM) – Southern California Research Project (SCCWRP) (May 2009)
Wetland Delineation – Wetland Training Institute (August 2007)
Wetland Riverine Functional Assessment/Ecology for Project Managers – US Army Corps of Engineers
Environmental Considerations in Planning – US Army Corps of Engineers
Hydrologic & Hydraulic Considerations in Planning – US Army Corps of Engineers
Planning (Principles and Procedures) Workshop – US Army Corps of Engineers
Environmental Impact Assessment – US Army Corps of Engineers
Public Involvement and Teaming in Planning – US Army Corps of Engineers
Planning (Civil Works) Orientation Workshop – US Army Corps of Engineers
Introduction to Planning – US Army Corps of Engineers
Plan Formulation Workshop – US Army Corps of Engineers

Crown Cove Dock Project, California Dept of Boating and Waterways, sub to RBF Consulting, Coronado, San Diego County. Senior Biologist. Assisted with an eelgrass survey and reviewed the Biological Technical Report for a proposed dock in the Crown Cove area at Silver Strand Beach in San Diego County.

San Gabriel River Biological Surveys and Environmental Services, San Gabriel River Sediment Management Program Los Angeles County, Los Angeles County – Los Angeles Department of Public Works (LADPW). Senior Biologist. Performed fish as well as stream assessments and macroinvertebrate collection in support of the overall functional analysis methodology. The study involved fish sampling using both seine and electro-fishing techniques. The study area included the East Fork and West Fork of the San Gabriel River, Brown's Gulch, and areas below the San Gabriel and Morris Dams. Native fish species included Santa Ana speckled dace, arroyo chub, Santa Ana sucker, and rainbow trout. Other sampled fish included green sunfish, bluegill, and carp.

Environmental Assessment/Initial Study/Mitigated Negative Declaration (EA/IS/MND), Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark Counties – AT&T, sub to Forkert Engineering & Surveying, Inc. Regulatory Specialist. The project involved permitting applications, biological surveys, vegetation mapping, and jurisdictional delineations. Permit applications for the State Water Resources Control Board (SWRCB) 401 water quality certification, U.S. Army Corps of Engineers (USACE) 404 nationwide permit, and California Department of Fish and Game (CDFG) 1602 Streambed Alteration Agreement were submitted for project approval. Provided oversight for identification of delineated areas of the project site that fell under the regulatory jurisdiction of the USACE pursuant to Section 404 of the federal Clean Water Act and CDFG jurisdiction pursuant to Section 1602. Provided quality assurance for the Jurisdictional Delineation Report for the project site, which was completed after the field surveys described the limits of jurisdiction pursuant to USACE, CDFG, and SWRCB.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, UPRR Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. QA/QC. Provided project oversight and quality assurance for jurisdictional delineations of drainages crossed by the railroad right of way. The project involved biological surveys, vegetation mapping, and wetland delineations along a 100-mile-long corridor. Project services included reconnaissance surveys, focused sensitive species surveys, and vegetation community's surveys and mapping within the 200-foot right of way.

Biological Sciences Environmental Manager, US Army Corps of Engineers (USACE), Los Angeles District, Planning Division, Environmental Resources Branch – Los Angeles. Prepared environmental documents in compliance with NEPA, CEQA, CWA, Coastal Zone Management Act, Endangered Species Act, Fish and Wildlife Coordination Act, and other State and Federal laws and regulations, permits and compliance documentation. Coordinated with State and Federal resource agencies and discussed issues concerning fish and wildlife resources, terrestrial and wetland vegetation, coastal and marine environments, and threatened and endangered species.

SHANNAN SHAFFER

Biologist

Ms. Shaffer has five years of professional experience working as a wildlife biologist. She is knowledgeable in field identification of avian species, larval and adult amphibians, reptiles, and small mammals and fur-bearers. She has conducted reconnaissance-level and detailed wildlife and vegetation surveys, focused surveys for threatened/endangered bird species such as least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher and sensitive species such as the burrowing owl and California legless lizard. She follows current survey protocols to perform wildlife inventories and focused field studies and uses standardized methodologies including live-trapping for small mammals; track and photo station monitoring for large mammals; point counts, strip transects, and spot-mapping for birds; and pitfall trapping for reptiles. She frequently conducts consultations with other knowledgeable biologists. She has managed projects and authored reports, including biological assessments, mitigation plans, and technical reports.

Key Strengths

Over 5 years experience in southern California
Experience with focused protocol surveys and trapping programs
Biological resource analysis and management
Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Riparian/Riverine
Habitat restoration enhancement programs
Construction mitigation monitoring
Extensive working knowledge of regulations/guidelines:
Endangered Species Act
Clean Water Act
U.S. Fish and Wildlife Service
California Dept. of Fish and Game
U.S. Army Corps of Engineers Section 1602/401/404 permitting

RELEVANT EXPERIENCE

Biological Resource Surveys, Environmental Impact Report/Environmental Impact Statement (EIR/EIS), Sunrise Transmission Line Route Siting Studies, San Diego Gas & Electric, sub to ARCADIS G&M, Inc., San Diego County. A team of Chambers Group biologists conducted reconnaissance level surveys of several proposed routes to identify sensitive wildlife and plant species for future placement of electrical transmission lines. The project required identification of sensitive habitat and identified areas needing future focused surveys. The surveys covered approximately 50 miles of 500-kV transmission line corridor from the Imperial Valley Substation to a new substation (known as Central) in central San Diego County. In addition, there will be a 230-kV line connecting Sycamore Substation to the Penasquitos Substation. The new 230-kV lines are estimated to be between 25 and 50 miles in length.

Southwest Gas Kiowa Reinforcement Project Phase II, Southwest Gas Corporation, Southern California Division, Apple Valley, San Bernardino County. This project involved the installation of approximately 6,200 feet of 12-inch high pressure steel pipeto replace older 6-inch steel pipe within the existing right of way of Kiowa Road in Apple Valley. A hydrostatic discharge permit (provided by our sub) was required for hydrostatic testing resulting in the release of approximately 36,426 gallons of water. Chambers Group proposed disposing of the water via construction area dust control using 2,000 or 4,000 gallon water trucks. The total project disturbance was estimated to be 2.8 acres within the previously disturbed limits of the right of way. SWG utilized Chambers Group's company-approved Master Storm Water Pollution Prevention Plan document to create the required SWPPP. Best Management Practice (BMP) was included as required as part of the hydrostatic test water disposal.

Southwest Gas Hesperia Reinforcement Project (HRP), El Centro Road, Southwest Gas Corporation, Southern California Division, Hesperia, San Bernardino County. This project involves the replacement of approximately 7,700 feet of 4-inch high pressure steel pipe with new 8-inch steel pipe. This project commences at the intersection of Summit Valley Road and El Centro Road in Hesperia. The project crosses two privately owned parcels in which SWG is acquiring easements as well as the BNSF railroad. The project continues west along the existing right of way of El Centro Road and terminates at the intersection of El Centro Road and Hawthorne Avenue. This project will require environmental permit scoping across the parcels in which easements are required. This project is planned for construction in August or September 2007. SWG will create the required SWPPP plan for this project. No hydrostatic test will be conducted on this project.

Education
B.S., Biology, California State Polytechnic University, Pomona; 2004
Minor, Zoology, California State Polytechnic University, Pomona

Certifications
California Department of Fish and Game, Scientific Collector's Permit # 801020-03

Memberships
The Wildlife Society, Southern California Chapter Member
Sea and Sage Audubon Society Member
American Society of Mammalogists Member
The Desert Tortoise Council Member
Specialized Training
Intro to Birding Workshop – Sea and Sage Audubon Society, 2004
Sensitive Butterfly Workshop – Nature Festivals of San Diego County, 2004
Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2005
California Bird Sounds – Sea and Sage Audubon Society, 2006
Southwestern Willow Flycatcher Workshop, Southern Sierra Research Station; 2006
Basic Tracking, Earth Skills, 2006
Sparrows of North America – Sea and Sage Audubon Society, 2007
BLM Flat-tailed horned lizard training, May 2007

Southwest Gas Greenway Casing Project, Southwest Gas Corporation, Southern California Division, Big Bear, San Bernardino County. Greenway Casing Project. This project involves the installation of vent piping on each end of an existing six-inch steel casing on Greenway Avenue south of Northshore Drive in Big Bear Lake.

Environmental Assessment (EA) of Monument Fuels Management Project, Labat Environmental, Snow Creek / Pinyon, Riverside County. This project includes a new literature review, field survey, and report updating on an EA for the Monument Fuels Management Project. The fieldwork and full report updating will be accomplished within one week. Biologists and botanists will conduct a standard bio-recon survey, with a focus on potentially-occurring sensitive plants or animals in the area. Billing is under Chambers standard GSA rates.

Habitat Assessment and Restoration, Temecula, Carino & Associates, Riverside County. Chambers Group conducted a habitat assessment for quino checkerspot butterfly and Coastal California gnatcatcher on the approximately 20-acre Seraphina Development site located in the city of Temecula, Riverside County. A jurisdictional delineation was performed onsite. An air quality analysis was also performed for this site as required by the City of Temecula.

Biological Monitor, San Juan Capistrano Department of Public Works, San Juan Capistrano. Biologist. Monitored the removal of native and non-native vegetation within coastal sage scrub habitats during the grading of a road to access geotechnical boring sites. Any wildlife such as snakes and rodents were either flushed off the site or captured and relocated to an area not to be disturbed. Detailed daily monitoring logs were completed as to document the impacts to the wildlife and native vegetation. Coastal California gnatcatchers were present on the site.

Biological Surveys, San Juan Capistrano Lower Landslide, San Juan Capistrano, City of San Juan Capistrano Public Works, Orange County. Monitored the removal of native and non-native vegetation within coastal sage scrub habitats during the repair and mitigation of a landslide. Wildlife in danger from construction were either flushed off the site or captured and relocated to an area not to be disturbed. Detailed daily monitoring logs were completed as to document the impacts to the wildlife and native vegetation. The federally-threatened Coastal California gnatcatcher was present on the project site. Gnatcatchers onsite were monitored, and appropriate measures were taken to minimize construction impacts to any individuals.

Ecological Surveys, City of Newport Beach, Newport Coast. Wildlife Biologist. Surveyed eight canyons in the Newport Coast watershed area to in order to identify and map the vegetation communities, to document the location of non-native plant species, to determine the average width of California Department of Fish and Game (CDFG) and U.S. Army Corps of Engineer (USACE) jurisdiction, and to report potential presence of sensitive species. Sensitive species on site included coastal California gnatcatcher and snowy plover. A technical report of findings was prepared.

Scott M. Boczkiewicz

Conservation Biologist

Scott Boczkiewicz has worked as a biologist for the past 16 years in Hawaii, West Virginia, North Dakota, New Mexico, Washington, Oregon, and California. He has broad experience as a project manager field biologist including vegetation mapping, habitat assessments, and biological inventories; focused threatened, endangered, and special status plant and wildlife surveys; wetlands delineations, functional assessments, and fisheries and stream surveys; landscape scale planning studies, natural resource impact analyses, California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) compliance documents, and technical reports; wetlands permitting and mitigation planning, design and implementation; and Habitat Management Plans (HMPs) and Multiple Species Conservation Plans.

Recent Project Experience

Sunrise Powerlink Adjunct Staffing—San Diego Gas & Electric (SDG&E), San Diego County, California

Providing long-term in-house biological resources support for the Sunrise Powerlink Project to SDG&E. Support tasks include completion of biological portions of the Project Modification Report (PMR), review, revision, and update of resource agency submittals including U.S. Fish and Wildlife Service (USFWS) Biological Assessment, U.S. Forest Service (USFS) Biological Evaluation (BE) and Management Indicator Species (MIS) Report, California Department of Fish and Game (CDFG) 2081, and technical support for U.S. Army Corps of Engineers (ACOE) 404, Regional Water Quality Control Board (RWQCB) 401, and CDFG 1602 permit applications.

Sunrise Powerlink Wetlands and Waters Delineation—San Diego Gas & Electric (SDG&E), San Diego and Imperial Counties, California

Project Manager for a team of 16 biologists that completed jurisdictional delineations of all waters, wetlands, and U.S. Forest Service (USFS) Riparian Conservation Areas (RCAs) within the Sunrise Powerlink Project impact areas in San Diego and Imperial Counties. Trained crew members with assistance from WRA Consultants, and completed delineations throughout the project alignment between March 2009 and February, 2010. All data

Total Years of Experience

6 Months/16 Years

Years with ICF

1 Month/ 2 Years

Education

BA, Biological Conservation, University of Wisconsin, 1994

BFA, Painting and Drawing, University of Wisconsin, 1994

Special Training

California Rapid Assessment Methodology (CRAM) Training, SWS Conference, Sacramento, CA, 2007

USACE Interim Regional Supplement Training, SWS, San Diego, CA, 2007

Specialized botanical training in identification of Carez, Juncaceae, Poaceae and Asteraceae, Jepson Herbarium, University of California, Berkeley, 2002-2006

Project Management Bootcamp, PSMJ, San Francisco, CA, 2004

CEQA/NEPA Training, AEP, San Diego, CA, 2001

Wetlands Hydrogeomorphic (HGM) classification training, Division of State Lands, Salem, OR, 2000

Wetlands delineation training, Wetlands Training Institute, Portland, OR, 1999

GPS Training, U.S. Army, White Sands Missile Range, Las Cruces, NM, 1996

collected was compiled by WRA for submittal with project 404, 401, and 1602 regulatory permit applications.

SDG&E Sunrise Powerlink 2008 Rare Plant Surveys—Arcadis, San Diego County, California

Project Manager for a task to perform rare plant surveys in support of the SDG&E Sunrise Powerlink in San Diego and Imperial Counties. Managed multiple field teams from March through September 2008 that performed focused surveys for over 120 rare plant species on over 300 miles of proposed Powerlink project routes. Coordinated private and public land access, performed surveys and managed survey crews, and developed a GIS database of rare plant locations to inform the project design.

As-Needed Biological Services Contract—City of San Diego Metropolitan Wastewater Department (MWWD), California

Project Manager for a 3-year (2005-2008) contract to provide biological services in support of the city's wastewater and storm water department operations. A total of 33 tasks including emergency access projects, planning and project design studies, biological inventories and technical reports, focused T&E surveys, habitat restoration projects and construction monitoring and reporting were completed through 2008.

Grossmont Union High School District New School # 12—Essentia Management Services, Alpine, California

Project Biologist and co-author of Biological Technical Report analyzing the biological impacts associated with three proposed high school development sites near Alpine, California. Performed rare plant surveys and wetlands delineations on three proposed project sites, compiled all general and focused plant and wildlife survey information, prepared detailed impacts analysis and developed mitigation measures consistent with the MSCP and County BMO and to inform the site selection process and complete the project EIR.

South Region High School #15 EIR—Los Angeles Unified School District, San Pedro, California

Project Biologist and author of Biological Technical Report for the LAUSD HS#15 Project in San Pedro, California. Completed vegetation mapping, botanical inventory, general wildlife surveys and focused rare plant surveys on a proposed high school development site on the southern tip of the Palos Verdes Peninsula and prepared an impact assessment and mitigation measures consistent with

CEQA. Analyzed installation of approximately 36 wind turbines on the project site, and coordinated with USFWS and CDFG in developing a monitoring and mitigation plan (pre- and post-construction) to help assess the potential for avian impacts resulting from the turbines.

Campus Master Plan EIR—San Diego State University, San Diego, California

Phase manager for the SDSU 2020 Master Plan Revision EIR Biotechnical Studies. Conducted focused and general biological resources surveys, wetlands delineations, impacts analysis and mitigation program for the project biotechnical report. Represented SDSU planning staff and the program EIR and supporting biotechnical data in public community planning meetings and resource agency meetings and site visits.

State Route 56 Project—City of San Diego Engineering and Capital Projects, Transportation Division, California

Project biologist and phase manager for the permitting and construction of SR-56. Secured federal, state and local wetlands permits, take authorization for Least Bell's vireo and coastal development permit for construction of the SR-56 project. Assisted with mitigation site selection and design, provided an HGM-based functional assessment and wetlands creation and enhancement plan and monitored project installation. The 25 acre El Cuervo Norte riparian creation and enhancement project was installed in the west end of the Los Peñasquitos Canyon Preserve in 2004.

Newhall Ranch Development Project—Newhall Land and Farming Company, Los Angeles and Ventura Counties, California

Project biologist and manager for various phases of the 26,000 acre project area from 2002 through 2007. Coordinated and conducted focused surveys for sensitive plant species, San Fernando Valley spineflower seed collection and population monitoring, conducted wetlands functional assessments and riparian habitat management plans, and coordinated and monitored geotechnical testing in sensitive areas of Newhall Ranch.

Robert MacAller
President/Principal

Experience Highlights

- ✓ Highly experienced in large-scale habitat restoration planning, implementation, and maintenance
- ✓ Familiarity of existing resource management planning efforts in the region
- ✓ Specializes in southwestern ecosystem restoration

Experience:

18 years

Education:

B.S. Biology, San Diego State University

Permits/ Trainings:

USFWS Permit #TE-797665 to independently collect Endangered Vernal Pool and Upland Plants; under supervision for Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, and Pacific Pocket Mouse surveys

CDFG Scientific Collecting Permit #006267

Development of USACE HGM Arizona Riverine Riverbank Model, Tucson

Selection, Installation, and Inspection of Construction Site BMPs for NPDES Stormwater Permit Compliance, International Erosion Control Association

Experience Summary

Mr. MacAller is the president of RECON and a habitat restoration specialist with 18 years of experience in the environmental profession. He is proficient in managing teams of environmental specialists on complex projects throughout the southwest. He has monitored and controlled schedules, budgets, and staffing for a variety projects, including several high-volume, on-call contracts for agencies such as the City of San Diego, County of San Diego, San Diego Gas & Electric, City of Riverside, and County of Riverside.

As a restoration specialist with 18 years of experience in ecosystems of the southwest, Mr. MacAller provides specialized expertise in the management and quality control of all phases of habitat restoration including the inventory and analysis of existing conditions of plant communities; preparation of revegetation, mitigation, and monitoring plans for sensitive habitats; implementation of restoration plans; long-term management and monitoring of revegetation sites; and preparation of status and annual reports to clients and resource agencies.

Mission Trails Regional Park Phase I Natural Resources Management Plan, San Diego, CA

Mr. MacAller recently completed the Phase I report of the MTRP Natural Resources Management Plan. Work involved park-wide mapping of vegetation communities, identification of locations of potential MSCP covered species habitat, and identification of potential weed issues and management/restoration areas. The results of the survey were presented in a technical report.

SDG&E NCCP On-Call Operation & Maintenance Contract, As-Needed Environmental Services, San Diego Gas & Electric, CA

Mr. MacAller manages this as-needed services agreement with SDG&E. He serves as the point of contact and is responsible for assigning the appropriate staff to each task and ensuring thorough and timely completion of all work performed. He ensures that tasks are completed on schedule and within budget.

El Sobrante Landfill Expansion HCP Implementation, Riverside, CA

Mr. MacAller managed the restoration of Riversidean sage scrub for this landfill project. He met with regulatory agencies to devise statistically valid long-term monitoring techniques; collected and analyzed reference area vegetation data; reported findings; and directed seed collection, plant production, and weed control tasks.

Permits/ Trainings (continued):

Pollution Prevention Program Erosion and Sediment Control Training, Engineering & General Contractors Association/City of San Diego

County of San Diego Approved CEQA Consultants List - Revegetation Planning

Unexploded Ordnance Safety for Fort Irwin Range Safety Officer, Fort Irwin

Unexploded Ordnance Safety for Camp Pendleton Range Safety Operations, MCB Camp Pendleton

Unexploded Ordnance Safety for US Army Corps of Engineers UXO Training, San Diego

Unexploded Ordnance Safety for 29-Palms Range Safety Briefing, 29-Palms

Affiliations:

Society of Ecological Restoration

Association of Environmental Professionals

American Public Works Association

Work involves pre-impact surveys, many-stemmed salvage and translocation, Riversidian sage scrub restoration, and contractor coordination.

IDIQ Revegetation Services for National Park Service (NPS)

Mr. MacAller manages all task orders under RECON's NPS IDIQ Revegetation Services contract for work in Arizona, Nevada, and Colorado. The scope of work includes preparation of revegetation plans; native plant revegetation and ecological restoration; collection of seed and cuttings; propagation of native plants from NPS genetic stocks; exotics control; plant salvaging; seed and plant installations; and maintenance and monitoring of revegetation success.

Energia Costa Azul Flora and Fauna Rescue, Protection, and Conservation Plan for the Sempra International Liquid Gas Plant (LGP), Baja California

Mr. MacAller is managing this project involving the construction of a Liquid Gas Plant (LGP) in northwestern Baja California, Mexico. The development of approximately 30 hectares resulted in the direct loss of land supporting approximately 4,000 coast barrel cactus. This impact is being mitigated through the salvage and translocation of coast barrel cactus from the impact area and the restoration of the associated coast barrel cactus habitat, matorral coastal succulent sage scrub. In order to ensure no net loss of coast barrel cactus individuals, RECON is maintaining and monitoring the transplanted population for five years. In addition, replacement individuals are being grown in an on-site nursery from seed collected from the local population.

San Diego County Water Authority Subregional NCCP/HCP EIS/EIR, San Diego, CA

Mr. MacAller served as principal in charge for this project that evaluates the potential environmental effects from implementation of the proposed Water Authority Subregional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). The EIS/EIR describes the habitat that would be affected by implementation of the NCCP/HCP and discusses the potential environmental consequences associated with this action.

As-Needed Environmental Services, Engineering and Capital Projects, City of San Diego Water and Sewer Design, CA

Mr. MacAller managed this as-needed contract under which RECON provides a full range of environmental services for sewer and water pipeline projects and canyon sewer access planning efforts. He served as the primary contact for the City, assigned appropriate staff and resources to each task order, performed quality control reviews, and carefully monitored schedules and budgets.

As-Needed Environmental Services, County of San Diego Department of Public Works, CA

Mr. MacAller has managed four as-needed contracts for the County of San Diego Department of Public Works under which RECON provided biological and archaeological resource services, noise analyses, and environmental documents in compliance with local, state, and federal policies for public works facilities. He served as the primary contact for the County, assigned appropriate staff and resources to each task order, performed quality control reviews, and carefully monitored schedules and budgets.

As-Needed Environmental Services, City of San Diego Water Operations Department, CA

Mr. MacAller managed this as-needed contract under which RECON provides a full range of environmental services in support of the planning, design, and construction of various water and sewer pipeline projects in the City's CIP. He served as the primary contact for the City, assigned appropriate staff and resources to each task order, performed quality control reviews, and carefully monitored schedules and budgets.

Pacific Highlands Ranch Habitat Restoration, San Diego, CA

Mr. MacAller planned and is currently implementing 131-acres of upland and 22-acres of wetland and riparian habitat restoration in an open space reserve located in San Diego. The riparian and wetland restoration includes the reestablishment of willow dominated plant communities to create habitat for the federally listed Least Bell’s vireo and other species. Restoration methodologies included extensive weed control, plant production, seed collection, seed storage, seed application, and developing irrigation strategies.

Lake Murray Mitigation Project, San Diego, CA

Mr. MacAller is serving as Principal in charge for this City of San Diego Metropolitan Wastewater Department project. He conducted a quality control review of the conceptual habitat restoration plan that provides guidelines for implementation, monitoring, maintenance, and reporting for the restoration of Diegan coastal sage scrub habitat and enhancement of wetland habitat. He is also responsible for overseeing the implementation, monitoring, and maintenance of the site. The maintenance program includes irrigation, exotic species control, identification of vandalism, and remedial planting.

Mike Nieto

Project Biologist/Botanist

Experience Highlights

- ✓ Conducts botanical and wildlife surveys
- ✓ Knowledge of local biological resources
- ✓ Vernal Pool wetland delineation
- ✓ Rare plant surveys
- ✓ Arroyo Toad Monitoring
- ✓ Bullfrog control on the Santa Margarita River

Experience

10 years

Education

B.S., General Biology, University of California San Diego, 2000

Permits/ Trainings

Wetland Delineation Training (WTI)

Arid West Supplement Seminar (WTI)

Native Grass Identification (RSABG)

Rare Plants of Cismontane Southern California (RSABG)

SDNHM Native Plant Identification Workshops (Boraginacea, Euphorbiacea)

Affiliations:

California Native Plant Society (CNPS)

Experience Summary

Mr. Nieto is a biologist on RECON's Agency team. He conducts habitat assessments, monitoring, and general surveys in a variety of habitats in southern California. Mr. Nieto specializes in botany, wetland assessments, and herpetology. In addition, he has experience mapping vegetation and sensitive species habitats, monitoring construction activities, and preparing biological technical documentation.

2009 Rare Plant Survey Report for the SDG&E Sunrise Powerlink Project, San Diego and Imperial County, CA

Survey coordination, implementation, and report of CNPS List 1B and 2 rare plants along 120 linear mile transmission line project. Rare plants ranged from Sonoran desert to cismontane foothills.

Draft 2009 Rare Plant Report for the Mountain Springs Grade Segment of the SDG&E Sunrise Powerlink Project, Jacumba, CA

Survey and reporting of CNPS List 1B and 2 rare plants within desert transitional scrub at the Mountain Springs Grade.

Draft 2009 Weed Control Plan for the Environmentally Superior Southern Route of the SDG&E Sunrise powerlink Project, San Diego and Imperial Counties, CA

Survey coordination, implementation, and report of Cal-IPC moderate and high weeds along 120 linear mile transmission line project. Weed study ranged from Sonoran desert to cismontane foothills.

SDG&E Preactivity Survey Reports (PSR), San Diego, CA

Completed nine SDG&E PSRs in San Diego County.

Environmental Constraints Report for West and Northwest Areas of Montgomery Field Airport, San Diego, CA

Analysis of biological resources and recommendations within a vernal pool complex on a public airfield. City of San Diego.

Jurisdictional Delineation Report for Montgomery Field, San Diego, CA

Vernal pool delineation and classification on a public airfield. City of San Diego.

Draft Biological Technical Report for the MYF Localizer Project at Montogomery Field, San Diego, CA

Impact analysis and mitigation plan for vernal pools and San Diego Fairy Shrimp on Montgomery airfield.

Alvarado Court Sewer Pipe Crossing Accelerated Revegetation/Erosion Control Plan, San Diego, CA

Plan to revegetation urban canyon following sewer replacement. City of San Diego.

Letter Report for the Biological Resources Monitoring for the Borrego Valley Improvement Sites, San Diego, CA

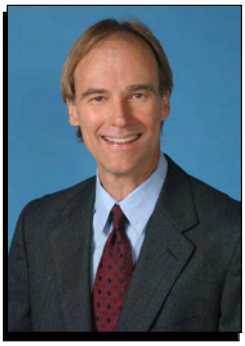
Construction monitoring report for airfield improvements in Borrego Valley. County of San Diego.

Arroyo Toad Monitoring, MCB Camp Pendleton, CA

Mark-Release-Recapture (MRR) studies on Santa Margarita River, MCB Camp Pendleton. Construction monitoring, pit fall trap and drift fence installation, Passive Integrated Transponder (PIT) tag installation.

Lee Sherwood

Regional Director, CEQA Advisor



Experience Highlights

- ✓ CEQA Expert
- ✓ Strong knowledge of City CEQA procedures and guidelines
- ✓ Large-scale urban redevelopment experience
- ✓ Former member of City of San Diego Task Force to develop significance threshold guidelines

Experience

27 years

Education

M.A., Geography (environmental studies), San Diego State University, 1983

B.A., Geography, San Diego State University, 1976

Certifications/ Trainings

San Diego County Approved CEQA Consultants List - EIR Preparer

Affiliations

City of San Diego Business Process Reengineering Committee for CEQA Processing

City of San Diego Task Force to Develop Significance Threshold Guidelines

Experience Summary

Mr. Sherwood has over 27 years of experience managing the preparation of CEQA documents for projects in San Diego. As a local CEQA expert, Mr. Sherwood has taught environmental studies courses and has presented CEQA update workshops for San Diego State University Extension and the Association of Environmental Professionals (AEP). He has been a presenter at the CEQA Basics course offered by the AEP throughout the state as part of the annual “Understanding CEQA” workshop series.

Through his environmental career in San Diego, he has a strong knowledge of local land planning policies, zoning ordinances, and planning documents. He has specific knowledge of City of San Diego procedures and guidelines for CEQA review.

The Commons at Mount Burdell, Novato, CA

The proposed Commons at Mount Burdell project would enhance the 65-acre Fireman’s Fund office campus by adding a variety of mixed uses to the existing campus. The project has also been designed to be carbon neutral and will rely on passive and active measures to meet the energy, heating and cooling, water, and solid waste disposal needs of the development. In support of the EIR, Mr. Sherwood is managing technical studies for the issues of air quality, global climate change, biological resources, noise, visual impact/scenic resources, archaeological resources, and public services/utilities.

Otay Mesa Community Plan Update Program EIR, San Diego, CA

Mr. Sherwood served as principal in charge for the development of this Program EIR (PEIR) for the update of the Otay Mesa Community Plan covering more than 9,000 acres in the southernmost portion of the City of San Diego. The PEIR provides a comprehensive analysis of the impacts and alternatives, so that subsequent project-level environmental review can be streamlined.

Barrio Logan Community Plan Update EIR, San Diego, CA

Mr. Sherwood is the principal in charge for the community plan update EIR encompassing approximately 1,000 acres in the southern portion of the City of San Diego. The community contains a mixture of residential, commercial, and light and heavy industrial uses, with governmental agencies and major maritime industries.

Meadowood Specific Plan EIR, San Diego, CA

The 389-acre Meadowood Specific Plan Area (SPA) lies within the Fallbrook Community Plan. The project proposes residential and complementary uses for 12 undeveloped parcels comprising a total of 389.6 acres. The project also entails approximately six miles of trails, associated community facilities, and infrastructure. Mr. Sherwood managed the preparation of this EIR evaluated potential impacts to land use, water and sewer service, agricultural resources, biological resources, traffic, cultural resources, air quality, noise, geology, hydrology, water quality, utilities, and public services.

Downtown El Cajon Specific Plan EIR, El Cajon, CA

Ms. Sherwood is the technical advisor for the Downtown El Cajon Specific Plan (DECSP) EIR. The DECSP covers approximately 527 acres within the City's Redevelopment Project Area. The overall goal of the Specific Plan is to guide future public and private improvements over the next 50 years focusing on a revitalized pedestrian-oriented, sustainable, mixed-use community.

EIR for the Castlerock Project, San Diego, CA

Mr. Sherwood managed the preparation of the EIR for this project that would allow for the development of 269 detached single-family residences, 87 detached small lots, and 120 multi-family residences on 102 acres within the East Elliott community. The EIR was prepared in accordance with the City of San Diego EIR Guidelines and complies with all criteria, standards, and procedures of CEQA.

Master EIR for the Santee Town Center, Specific Plan Amendment, Santee, CA

Mr. Sherwood managed the preparation of this EIR for the proposed project. The proposed project is an Amendment to the Town Center Specific Plan that establishes a physical and design framework for the development of 154 acres within the City's 706-acre Town Center Specific Plan Area. The Santee Town Center Specific Plan Amendment would enable the eastern portion of the existing Santee Town Center to be developed with approximately 2.5 million square feet of residential and commercial/office uses, and a limited number of residential units.

Wildcat Canyon Road Enhancement EIR/EA, San Diego, CA

Mr. Sherwood managed this multi-phased project involving the enhancement and widening of segments of Wildcat Canyon Road between Willow Road and the Barona Casino entrance. With federal funding involved from the Bureau of Indian Affairs, he prepared the draft joint EIR/EA for the County of San Diego Department of Public Works. The document addresses a variety of issues including aesthetics, biological resources, land use, and community character.

Lance Unverzagt, AICP
Environmental Analyst

Experience Highlights

- ✓ CEQA knowledge and experience
- ✓ Residential development projects

Experience

8 years

Education

Master of Community and Regional Planning (MCRP), University of Nebraska, 2002

B.S., Business Administration, University of Nebraska, 1999

Certifications/ Trainings

San Diego County Approved CEQA Consultants List - Agriculture

Affiliations

American Institute of Certified Planners (AICP)

American Planning Association, California & San Diego Chapters

Experience Summary

As an environmental analyst, Mr. Unverzagt prepares CEQA and NEPA compliance documents for a variety of large- and small-scale development plans throughout southern California. He is responsible for document preparation, research, issue analysis, report writing, and client and agency coordination. He prepares accurate and thorough environmental documents within the limits of the project's budget and schedule.

Mr. Unverzagt's environmental experience has emphasized the management of a full range of projects including residential, commercial, industrial, and mixed-use developments. He is experienced in guiding clients and their projects through the environmental process and coordinating their proposed plans with state and federal resource agencies, public jurisdictions, and other interested parties.

Escondido Village Mall Site Plan Addendum, Escondido, CA

Mr. Unverzagt assisted with the preparation of the Addendum to the Final EIR for the Wal-Mart/ Escondido Union School District Planned Development Project. The addendum addressed the changes to the proposed project which had not moved forward since the 2005 approval. The addendum addressed the removal of the school district portion of the project as well as a re-configured site plan and reduction in square footage.

Otay Mesa Community Plan Update PEIR, San Diego,CA

Mr. Unverzagt is preparing the Draft PEIR for the Otay Mesa Community Plan Update (CPU). The CPU is the basis for adopting the City of San Diego City of Villages strategy for the Otay Mesa community which is envisioned as a diverse international community due to its proximity to the US/Mexico border and the presence of the region's commercial port of entry. The PEIR analyzes three draft land use scenarios representing a range of land use types with a range of density and intensity of uses.

Procalamos Residential Draft EIR, Imperial County, CA

Mr. Unverzagt is preparing the Draft EIR for the proposed Procalamos Residential Specific Plan/General Plan Amendment; Annexation; Zone Change; and Tentative Tract Map for 841 single-family units six parks; retention basins; recreational vehicle (RV) storage; mini storage; and several pedestrian paths.

Cement Powder Storage Silo MND, El Centro, CA

Mr. Unverzagt prepared the Initial Study Checklist and MND for the project which consists of a Conditional Use Permit for the construction of a 105-foot silo adjacent to an existing silo.

Colace Brothers Industrial Park MND, El Centro, CA

The project consists of a Tentative Map to subdivide a 16-acre site in order to accommodate the development of an industrial park on East Evan Hewes Highway in El Centro. Mr. Unverzagt prepared the Draft MND for the proposed project which addresses the issues of traffic, hydrology and water quality, air quality, and biology.

Clark Road Residential MND, El Centro, CA

The project consists of an annexation, a General Plan Amendment and subsequent Change of Zone in order to accommodate a multi-family residential housing complex on Clark Road in El Centro. Mr. Unverzagt prepared the Draft MND which addressed the issues of traffic, cultural resources, and air quality.

Robertson's Ready-Mix MND, Oceanside, CA

Mr. Unverzagt prepared an MND for this City of Oceanside project which consists of a concrete manufacturing plant that will produce "ready mix" concrete for use in construction. The manufacturing plant would process a maximum of 1,200 cubic yards of concrete per day. The proposed project includes an enclosed aggregate storage building with a 12,000-gallon above-ground diesel fuel storage tank, as well as a batch plant and office building.

El Centro Fire Station Draft MND, El Centro, CA

Mr. Unverzagt recently completed the draft MND for the proposed General Plan Amendment and Change of Zone to allow for the future development of a fire station and a public park. He prepared the preliminary draft MND and coordinated with City staff and technical specialists on the team.

Scripps Green Hospital IS/MND, San Diego, CA

The proposed project involves a Site Development Permit (SDP), Coastal Development Permit (CDP), and Conditional Use Permit (CUP) to consolidate CUP 94-0395 for Scripps Green Hospital to construct an Outpatient Cancer Treatment and Research Center and an employee parking structure on a 34-acre site on North Torrey Pines Road. Mr. Unverzagt assisted in the preparation of the Initial Study and MND.

DREW STOKES

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Department of Birds and Mammals
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dstokes@sdnhm.org
619-255-0293

Education

1994 - Associate of Science with honors in general science, Grossmont Community College, CA.
1997 - Bachelor of Science, Cum Laude, with distinction in biology (zoology emphasis) at San Diego State University, California.

Relevant Courses - Ecology and Evolution, Conservation of Wildlife, Entomology, Animal Behavior, Natural History of Vertebrates, Mammalogy, 3 semesters of independent study (subject: ecology of southern California bats), Ecology and Conservation of Bats in California (1 week course through San Francisco State University college of extended studies focusing on bats and bat survey techniques), Anabat bat detector workshop (1 week course taught by Chris Corben and Dr. Mike O'Farrell focusing on use of the Anabat II bat detector system to survey for free-flying bats).

Employment History

9/3/2007 – Present: San Diego Natural History Museum. Field biologist with Department of Birds and Mammals (Full time position). Duties include:

- Conducting bat surveys in southern California and Baja, Mexico
    - acoustic monitoring using both active and passive Anabat monitoring systems including batcall identification analysis
    - hand-net and mist-net operation for species identification and analysis of habitat use (currently hold MOU with CDFG to capture and handle bats)
    - data compilation and analysis and writing of technical reports and manuscripts
    - public outreach including conducting educational programs, working with boy scouts to construct bat houses, providing bat houses to interested members of the public, providing advice and information to public about 'nuisance bats'
- acting as an Independent Science Advisor (bat expert) for the San Diego County East County Multiple Species Conservation Program

- serving on the California Bat Working Group team to assist with development of the California Bat Conservation Plan.

- Conducting small mammal trapping in southern California using Sherman live traps. Includes species identification, determination of age, sex, and reproductive condition, and marking of individuals for mark and recapture studies
- Conducting general herpetological surveys in southern California including use of pitfall traps

- Conducting focused surveys for the federally endangered Arroyo Toad (*Bufo californicus*) in southern California. Currently holds USFWS Recovery permit (TE168927-0) and is named on USFWS list of approved Arroyo Toad handlers in southern California.

2/22/2004 – 8/31/2007: United States Geological Survey –Biological Resources Discipline (USGS-BRD) GS-9 Biologist permanent appointment (Full time position). Duties include:

- conducting herpetological surveys in southern California using pitfall traps
- focused reptile and amphibian surveys including sensitive, threatened, and endangered species (Arroyo Toads *Bufo californicus*, Mountain Yellow-legged Frogs *Rana muscosa*, and Western Pond Turtle *Emmys marmorata*)
- surveys for large and small mammals using track and camera stations
- small mammal trapping using box-style traps
- vegetation transect surveys
- general data entry and analysis
- proposal, technical report, and manuscript writing
- conducting bat surveys in southern California
    - acoustic monitoring using both active and passive Anabat monitoring systems including batcall identification analysis
    - hand-net and mist-net operation for species identification and analysis of habitat use
    - data compilation and analysis and writing of technical reports and manuscripts
- acting as an Independent Science Advisor (bat expert) for the San Diego County East County Multiple Species Conservation Program
- serving on the California Bat Working Group team to assist with development of the California Bat Conservation Plan.

11/04/2001 – 2/22/2004: USGS-BRD GS-8 Biological Science Technician (wildlife) term appointment to conduct herpetological surveys in Southern California, including monitoring of pitfall traps, focused reptile and amphibian surveys including sensitive, threatened, and endangered species, surveys for large and small mammals, and data entry and analysis and technical report writing. Conduct bat surveys in southern California, including acoustic monitoring using Anabat system and hand-net and mist-net operation for species identification and analysis of habitat use, including writing of technical reports. (Full time position)

7/15/2001 - 11/04/2001: USGS-BRD GS-7 Biological Science Technician (wildlife) term appointment to conduct herpetological surveys in Southern California, including monitoring of pitfall traps, focused reptile and amphibian surveys including listed and/or sensitive species, and data entry and analysis. Conduct bat surveys in Southern California, including acoustic monitoring using Anabat system and hand-net and mist-net operation for species identification and analysis of habitat use. (Full time position)

3/1999-9/2000: Independent Contractor to The Environmental Trust - conduct post-gating monitoring of pallid bat mine roost (Benchmark 19 mine) on Twenty-nine Palms Marine Corps Air Ground Combat Center, San Bernardino County, CA, including acoustic monitoring using

Anabat system, night vision and hand-net and mist-net operation for species identification and analysis of habitat use and includes technical report writing.(300 hrs completed)

6/21/99-7/15/2001: GS-7 with U.S. Geological Survey-B.R.D, research assistant to Dr. Robert Fisher- assist with herpetological surveys in Southern California, including monitoring of pitfall traps in Southern California, assisting with radio tracking study of Rosy Boas (*Lichanura trivergata*) in southern California, and data entry and analysis. Conduct bat survey of Santa Ana Mountains, including acoustic monitoring using Anabat system and hand-net and mist-net operation for species identification and analysis of habitat use. (40 hrs/week)

2/1998-6/21/99: Research Assistant to Dr. Robert Fisher, Conservation Scientist for San Diego State University Field Stations - conduct herpetological surveys in Southern California, including monitoring of pitfall traps and data entry and analysis. Conduct bat survey of Santa Ana Mountains, including acoustic monitoring using Anabat system and hand-net and mist-net operation for species identification and analysis of habitat use.(40 hrs/week)

6/1997-12/1998: Research Assistant to The Environmental Trust - conducted bat survey of Miramar Marine Corps Air Station, San Diego County, California, including acoustic surveys using Anabat system, roost surveys, hand net capture and mist-net operation for species identification and analysis of habitat use.(20 hrs/week)

6-9/1996 and 6-9/1997: Biological Scientific Aide, GS-4, U. S. Forest Service - conducted seasonal surveys for bats in mountains (on four National Forests) of southern California, including acoustic surveys using Anabat system, roost surveys, hand-net and mist-net operation and radio-telemetry for species identification and analysis of habitat use. (40 hrs/week)

6/1996-present: Field assistant to Brown-Berry Biological Consulting - assisting Dr. Patricia Brown with various bat surveys including acoustic monitoring using Anabat system, hand-net and mist-net operation, mine surveys, and radio telemetry for species identification and analysis of habitat use on federal, state, and private properties in southern California and Arizona. (200+ hours completed)

5/1997: Independent Contractor to Ecoventures California - conducted bat survey of Lockheed missile propulsion test site at Protrero Creek in Riverside County, California, including acoustic surveys using Anabat system, roost surveys, hand-net operation for species identification and analysis of habitat use. (50 hrs total)

Volunteer Experience

3/1998-3/2000: Bureau of Land Management - conduct bat surveys of mines in eastern San Diego County, California (Banner and Ranchita), including acoustic monitoring using Anabat system, hand-net and mist-net operation and use of night vision equipment for species identification and analysis of habitat use.(100+ hours)

6/1996-present: California State Parks - conduct bat surveys for species inventory of San Jacinto, Red Rock Canyon, Cuyamaca and Anza-Borrego State Parks, including acoustic monitoring

using Anabat system, roost surveys and hand-net and mist-net operation for species identification and analysis of habitat use.(100+ hours)

Grants applied for and received independently

2001 - $17,750 received from San Diego County Fish and Wildlife Advisory Commission to conduct bat inventories of public lands in Western San Diego County.

2001 - $1900 received from United States Fish and Wildlife Service to conduct bat surveys of the San Diego National Wildlife Refuge.

Grants assisted with

2007 - $400,000 received by Dr. Robert Fisher/USGS from San Diego Association of Governments (SANDAG) to continue post-2003 Cedar and Otay Wildfire recovery and response research

2006 - $105,000 received by Dr. Robert Fisher/USGS from the San Diego Association of Governments (SANDAG) to continue post-2003 Cedar and Otay Wildfire recovery and response research

2003 - $19,000 received by Dr. Robert Fisher/USGS-BRD to conduct post-mine gating bat surveys at 29-Palms Marine Corps Air Ground Combat Center.

2002 - $103,000 received by County of San Diego, California from California Department of Fish and Game to conduct bat inventory of the San Diego County Multiple Species Conservation Planning area.

2002 - $20,000 received by Dr. Robert Fisher/USGS-BRD to conduct bat inventory of the Descanso district of the Cleveland National Forest, California.

2002 - $5000 received by Dr. Robert Fisher/USGS-BRD to conduct bat inventory of the Cabrillo National Monument, California.

Products

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Noss, R., P. Beier, R. Fisher, B. Foster, J. Opdycke, E. Rubin, D. Stokes, and K. Williams. 2006. Report of the Independent Science Advisors on the San Diego East County MSCP (NCCP/HCP) - Part I: Recommendations Following the Workshop, February 2-3, 2006. Technical Report prepared for the County of San Diego.

Stokes, D. C., and R. N. Fisher. 2006. Monitoring Bat Roosts in Mines at the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California, 2005. U. S. Geological Survey final report prepared for Natural Resources and Environmental Affairs Division, Twentynine Palms MCAGCC, United States Marine Corps. Twentynine Palms, CA. 37 pp.

Miner, K. and D.Stokes. 2006. Bats in the South Coast Ecoregion: Status, Conservation Issues, and Research Needs. USDA Forest Service Gen. Tech. Rep.

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Hathaway, S., R. Fisher, C. Rochester, C. Haas, M. Mendelsohn, G. Turschak, D. Stokes, M. Madden-Smith, E. Ervin, K. Pease, and C. Brown. 2004. Baseline biodiversity survey for the Santa Ysabel Ranch Open Space Preserve. USGS Technical Report. Prepared for The Nature Conservancy and San Diego County Department of Parks and Receration.

Stokes, D., C.S. Brehme, and R.N. Fisher. 2003. Bat Inventory of the Point Loma Peninsula including the Cabrillo National Monument. US Geological Survey Tech. Rep. 31 pp.

Stokes, D.C., C.S. Brehme, R.N. Fisher. 2003. Bat inventory of the San Diego County Multiple Species Conservation Program Area, Interim Report. USGS Technical Report prepared for the County of San Diego and the California Department of Fish and Game, 17 pp.

Stokes, D., C.S. Brehme, and R.N. Fisher. 2003. A bat inventory of western San Diego County, California. Poster presented at The Wildlife Society meetings, February 2003.

Hathaway, S. A., J. O'Leary, R. N. Fisher, C. Rochester, C. Haas, S. McMillan, M. Mendelsohn, D. Stokes, C. Brehme, K. Pease, C. Brown, B. Yang, E. Ervin, and M. Warburton. 2002. Baseline Biodiversity Survey for The Rancho Jamul Ecological Reserve. Prepared for California Department of Fish and Game. 91 pp., 17 appendices.

Stokes, D. 2001. Bats of Mission Trails Park. In Mission Trails Regional Park News: a publication of Mission Trails Regional Park Foundation, Inc. Vol. 12, no. 2. 8 pp.

Stokes, D., D. Griffin, S. Baldwin. 2001. Final Report: Monitoring and surveys for bats at the benchmark 19 mine, Marine Corps Air Ground Combat Center, Twenty-nine Palms, California. Prepared for Tierra Data Systems. 19 pp.

Miner, K., D. Stokes, C. Dooley, M. Henshaw, R. Le Duc, and G. O'Corry-Crowe. 2000. Bats and mines survey of Bureau of Land Management lands in San Diego County, with special emphasis on the protection of important roost sites. Unpublished report prepared by San Diego Bat Conservation for BLM and the National Fish and Wildlife Foundation. 42 pp.

Stokes, D. 1996. Evening beings. In Bayfront By-line: a publication of the Bayfront Conservancy Trust and Chula Vista Nature Center. Vol. IX, no. 12. 8 pp.

References

Scott Tremor, San Diego Natural History Museum, (619) 255-0235

Dr. Robert Fisher, U.S.Geological Survey-B.R.D, (619) 225-6442

Karen Miner, California Department of Park and Recreation, (619) 220-5315

CHAMBERS GROUP

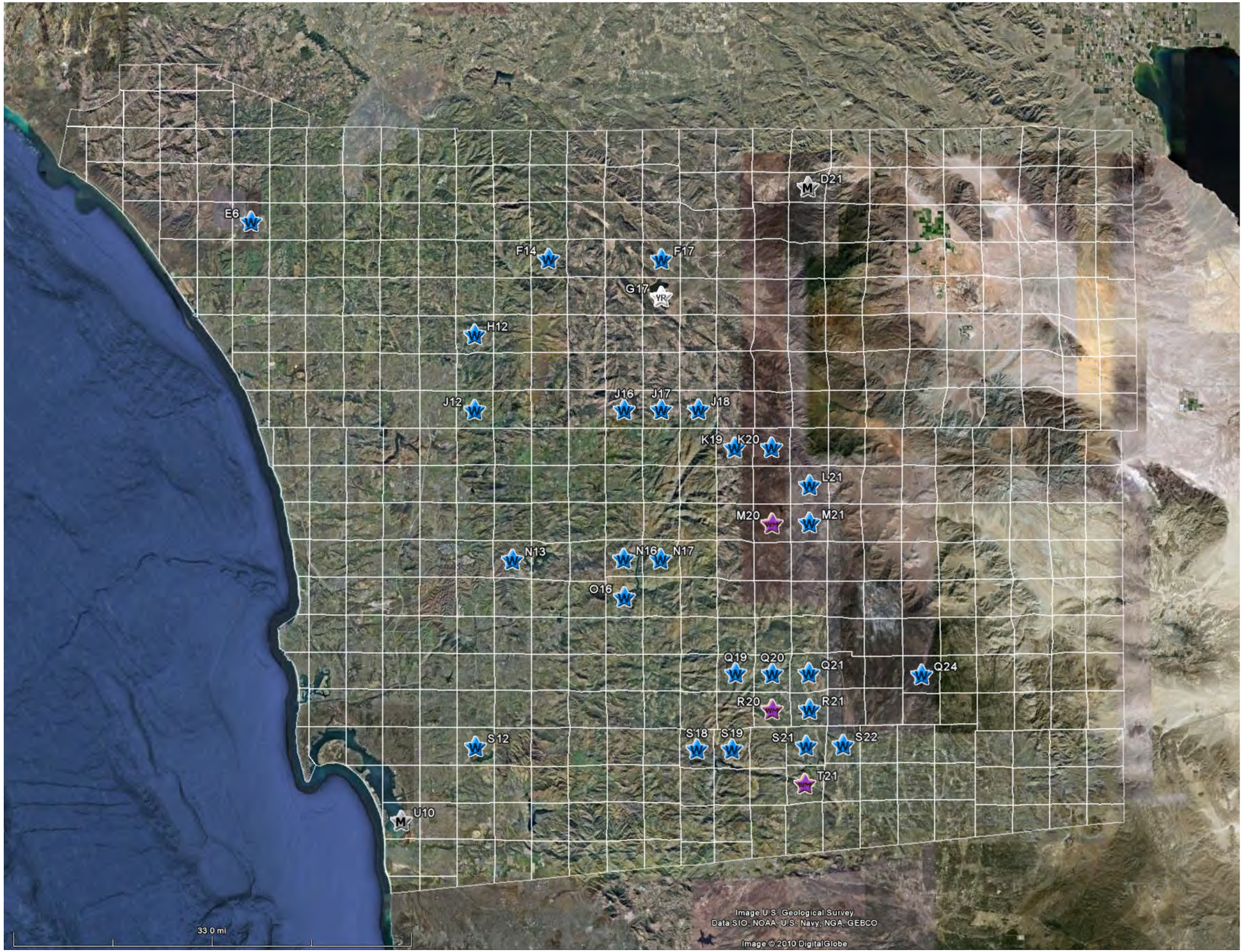
APPENDIX C – BIRD ATLAS OCCURRENCES FOR BALD EAGLE, CALIFORNIA SPOTTED OWL AND COASTAL CACTUS WREN IN SAN DIEGO COUNTY

San Diego Bird Atlas Tables for Bald Eagle, California Spotted Owl and Coastal Cactus Wren Occurrences in San Diego County

Bald Eagle (*Haliaeetus leucocephalus*)	
SD Bird Atlas Grid Location	**Closest Observed Distance from SRPL**
S18	305 feet
N13	900 feet
O16	1,565 feet
Q24	1,700 feet
T21	2,540 feet
S22	2.21 miles
Q19	2.48 miles
S19	2.88 miles
N16	3.02 miles
S21	3.56 miles
N17	4.5 miles
Q20	5.39 miles
R20	6.36 miles
Q21	8.29 miles
R21	9.32 miles
14 Additional Occurrences	>10 miles

California Spotted Owl (*Strix occidentalis*)	
SD Bird Atlas Grid Location	**Closest Observed Distance from SRPL**
P23	4.25 miles
R20	6.59 miles
O23	6.86 miles
O22	8.52 miles
N20	9.37 miles
11 Additional Occurrences	>10 miles

Coastal Cactus Wren (*Campylorhynchus brunneicapillus*)	
SD Bird Atlas Grid Location	**Closest Observed Distance from SRPL**
O14	1,990 feet
N12	2,835 feet
O15	1.24 miles
N11	1.66 miles
O12	2.52 miles
O11	2.83 miles
P14	3.32 miles
M11	3.92 miles
L13	5.02 miles
P12	6.41 mile
M17	7.06 miles
L10	7.99 miles
K12	8.07 miles
K13	8.07 miles
Q12	8.36 miles
K11	9.04 miles
R13	9.62 miles
45 Additional Occurences	>10 miles



Sunrise Powerlink

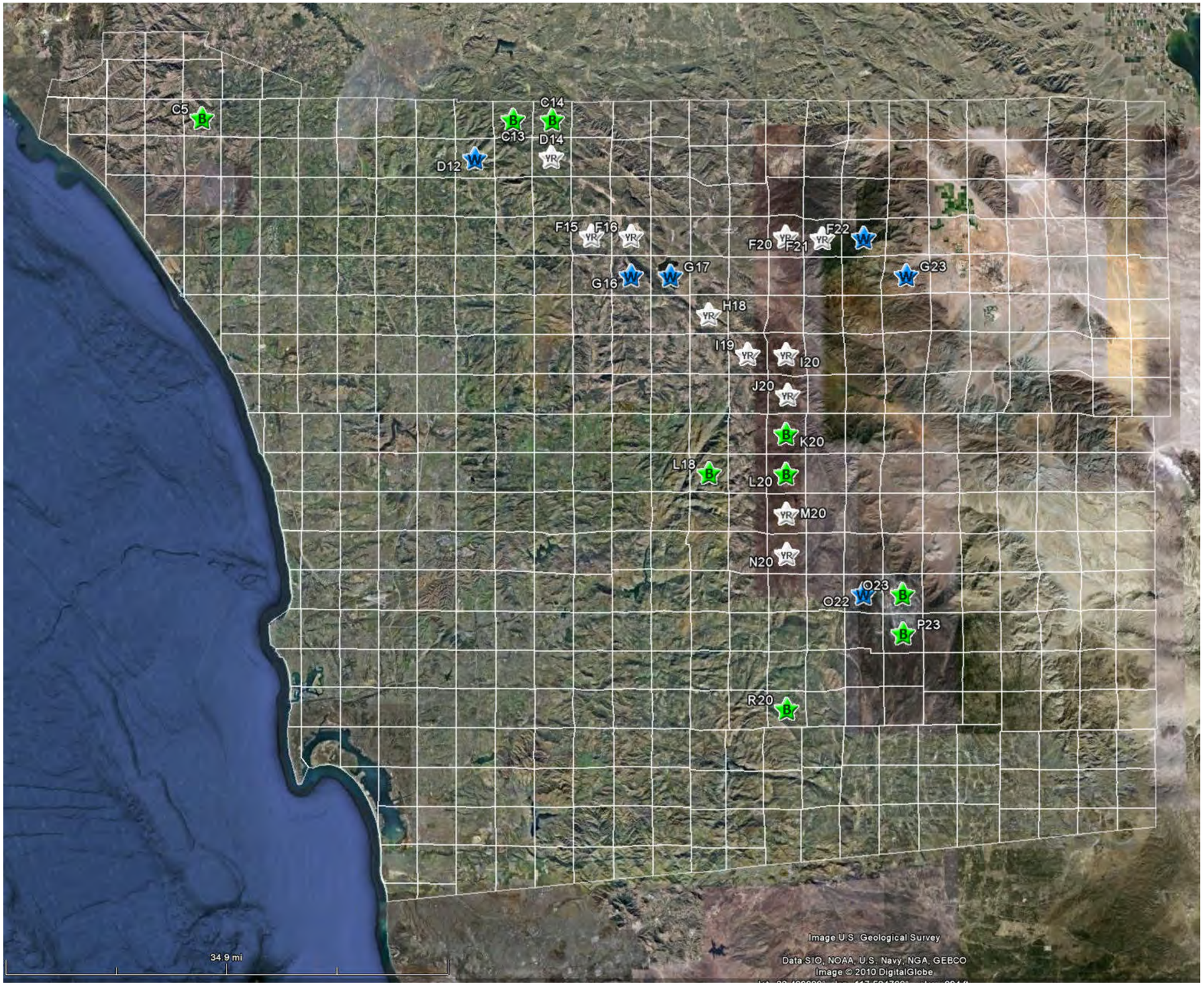
San Diego County Bird Atlas Occurrences

Bald Eagle

- Breeding
- Year Round
- Wintering
- Wintering Migrant

Source: Google
Chambers Group, Inc.

Dragonfly GIS
Chambers Group Inc.



Sunrise Powerlink

San Diego County Bird Atlas Occurrences

California Spotted Owl

Breeding

Year Round

Wintering

Wintering Migrant

N

Source: Google
Chambers Group, Inc.

Dragonfly GIS
Chambers Group Inc.

Sunrise Powerlink

San Diego County Bird Atlas Occurrences

Coastal Cactus Wren

- Breeding
- Year Round
- Wintering
- Wintering Migrant

Source: Google
Chambers Group, Inc.

Dragonfly GIS
Chambers Group Inc.

APPENDIX D – LIST OF ALL KNOWN RECORDS AND OBSERVATIONS OF RFSS PLANTS AND WILDLIFE SPECIES IN THE CNF WITHIN 10-MILES OF SRPL

List of All Known Records and Observations of RFS Plants and Wildlife Species in the CNF within 10-Miles of SRPL

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
Southwestern pond turtle	*Actinemys marmorata pallida*	1	6/12/1991	Biologist	Dulzura	CNDDB	NO	N/A	N/A	522749	3620216	2.80
Southwestern pond turtle	*Actinemys marmorata pallida*	1	6/12/1991	Biologist	Potrero	CNDDB	NO	N/A	N/A	536250	3607535	3.19
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/4/1992	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	540671	3614995	0.95
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/4/1992	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	531405	3620115	1.82
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/4/1992	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	532488	3621561	2.60
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/20/1992	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	534567	3627099	2.04
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/3/1994	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	532756	3623091	2.92
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/3/1994	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	533478	3625143	3.13
Southwestern pond turtle	*Actinemys marmorata pallida*	1	4/7/1994	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	539102	3615415	1.45
Southwestern pond turtle	*Actinemys marmorata pallida*	1	4/28/1994	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	532073	3620570	2.24
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/2/1996	Biologist	Descanso	CNDDB	NO	N/A	N/A	536131	3628395	2.01
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/2/1996	Biologist	Descanso	CNDDB	NO	N/A	N/A	540266	3630624	4.25
Southwestern pond turtle	*Actinemys marmorata pallida*	1	2/2/1996	Biologist	Descanso	CNDDB	NO	N/A	N/A	543203	3633463	6.40

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1987	(Descanso Atlas)	N/A*	USFS, cnf_tes_pts	NO	N/A	N/A	531369	3620091	1.79
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1987	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	540295	3630617	4.27
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1988	d.clark(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	538220	3629035	3.06
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1990	Wells J. (Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	540674	3615060	0.99
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1990	woychak(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	536118	3628519	1.96
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1990	Wells J. (Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	532460	3621577	2.59
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1991	woychak(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	534999	3627591	1.88
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1991	white(Descanso Atlas)	adults	USFS, cnf_tes_pts	NO	N/A	N/A	534412	3627066	2.03
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1991	white(Descanso Atlas)	adults	USFS, cnf_tes_pts	NO	N/A	N/A	534388	3626810	2.18
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1991	r.woychak(Descanso Atlas)	3" diameter young	USFS, cnf_tes_pts	NO	N/A	N/A	534097	3626657	2.23
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1991	r.woychak(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	534212	3626643	2.25
Southwestern pond turtle	*Actinemys marmorata pallida*	2	1/1/1991	r.woychak(Descanso Atlas)	adults	USFS, cnf_tes_pts	NO	N/A	N/A	534418	3626647	2.28
Southwestern pond turtle	*Actinemys marmorata pallida*	9999	1/1/1992	Volgarino Dave	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	539234	3615451	1.42

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1992	Volgarino Dave	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	532102	3620600	2.26
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1992	Volgarino Dave	1 adult	USFS, cnf_tes_pts	NO	N/A	N/A	532731	3623128	2.91
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1992	volgarino(Descanso Atlas)	juvenile	USFS, cnf_tes_pts	NO	N/A	N/A	533454	3625147	3.13
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1993	Boyd C. (Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	532170	3620923	2.32
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1993	Stephenson/Vaughn/Kirkpatrick	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	525005	3650924	8.83
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1993	Stephenson J.	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	531839	3647378	9.62
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/1996	copp(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	539187	3626864	4.13
Southwestern pond turtle	*Actinemys marmorata pallida*	1	1/1/2003	B. Hollingsworth, D. Wood	SDNHM specimen, SD F	USFS, cnf_tes_pts	NO	N/A	N/A	540306	3615026	0.97
California legless lizard	*Anniella pulchra*	1	3/17/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	A-1	552246	3618697	0.23
California legless lizard	*Anniella pulchra*	1	8/4/1997	Biologist	El Cajon	CNDDB	NO	N/A	N/A	509644	3634832	1.18
Pallid bat	*Antrozous pallidus*	1	10/4/2006	Biologist	Descanso	CNDDB	NO	N/A	N/A	535067	3632197	1.60
Pallid bat	*Antrozous pallidus*	1	10/4/2006	Biologist	El Cajon	CNDDB	NO	N/A	N/A	507274	3635467	1.90

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Pallid bat	*Antrozous pallidus*	1	10/4/2006	Biologist	Campo	CNDDB	NO	N/A	N/A	549247	3609786	2.11
Pallid bat	*Antrozous pallidus*	1	10/4/2006	Biologist	El Cajon	CNDDB	NO	N/A	N/A	502398	3633335	4.91
Pallid bat	*Antrozous pallidus*	1	3/7/2007	Biologist	Sweeney Pass	CNDDB	NO	N/A	N/A	572068	3635866	7.32
Pallid bat	*Antrozous pallidus*	1	9/4/2008	Biologist	Jacumba	CNDDB	YES	MS-003	B-1	578521	3610490	0.08
Pallid bat	*Antrozous pallidus*	1	9/4/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	522352	3619748	2.99
Pallid bat	*Antrozous pallidus*	1	9/4/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	536051	3637224	4.65
Pallid bat	*Antrozous pallidus*	1	9/4/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	517496	3616665	6.17
Pallid bat	*Antrozous pallidus*	1	9/4/2008	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	522208	3603577	7.55
Pallid bat	*Antrozous pallidus*	1	11/5/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	516634	3615705	6.68
Pallid bat	*Antrozous pallidus*	1	11/10/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	515313	3614243	7.54
Pallid bat	*Antrozous pallidus*	1	1/1/2003	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	536092	3637236	4.67
Pallid bat	*Antrozous pallidus*	1	8/20/2003	Biologist	Foraging bats, Hulburd Grove	Stokes, D. C.	NO	N/A	N/A	536112	3637210	4.66
Pallid bat	*Antrozous pallidus*	1	8/15/2002	Biologist	Foraging bats, Palo Verde area of Alpine	Stokes, D. C.	NO	N/A	N/A	549896	3637533	7.24
Pallid bat	*Antrozous pallidus*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-034	B-2	555009	3624169	0.00
Pallid bat	*Antrozous pallidus*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-052	B-3	544059	3613416	0.00
Dean's milk-vetch	*Astragalus deanei*	1	5/1/1980	Biologist		USFS TESPeos 4-1	NO	N/A	N/A	529547	3611627	1.11
Dean's milk-vetch	*Astragalus deanei*	1	5/1/1980	Biologist		USFS TESPeos 4-1	NO	N/A	N/A	514301	3625706	5.97
Dean's milk-vetch	*Astragalus deanei*	1	7/19/1991	Biologist		USFS TESPeos 4-1	YES	MS-052	D-5	543678	3613668.	0.07
Dean's milk-vetch	*Astragalus deanei*	1	9/21/1991	Biologist		USFS TESPeos 4-1	NO	N/A	N/A	530181	3620625	1.04
Dean's milk-vetch	*Astragalus deanei*	1	11/1/1991	Biologist	Tecate	CNDDB	NO	N/A	N/A	531122	3606444	4.41
Dean's milk-vetch	*Astragalus deanei*	1	11/1/1991	Biologist	El Cajon	CNDDB	NO	N/A	N/A	508822	3627887	5.52
Dean's milk-vetch	*Astragalus deanei*	1	11/19/1991	Biologist	Tecate	CNDDB	NO	N/A	N/A	532770	3607328	3.82
Dean's milk-vetch	*Astragalus deanei*	1	2/25/1992	Biologist		USFS TESPeos 4-1	NO	N/A	N/A	531413	3620490	1.77
Dean's milk-vetch	*Astragalus deanei*	1	2/25/1992	Biologist		USFS TESPeos 4-1	NO	N/A	N/A	531823	3620469	2.05
Dean's milk-vetch	*Astragalus deanei*	1	4/16/1993	Biologist		USFS TESPeos 4-1	NO	N/A	N/A	524132	3650609	8.34
Dean's milk-vetch	*Astragalus deanei*	1	10/26/1999	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	530122	3620717	1.05

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Dean's milk-vetch	*Astragalus deanei*	1	10/26/1999	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	537288	3615515	1.46
Dean's milk-vetch	*Astragalus deanei*	1	10/26/1999	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	531403	3620552	1.82
Dean's milk-vetch	*Astragalus deanei*	1	10/26/1999	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	524114	3650574	8.41
Dean's milk-vetch	*Astragalus deanei*	1	6/22/2005	Biologist	El Cajon	CNDDB	NO	N/A	N/A	509538	3626099	6.58
Dean's milk-vetch	*Astragalus deanei*	1	6/22/2005	Biologist	El Cajon	CNDDB	NO	N/A	N/A	509137	3625500	6.97
Dean's milk-vetch	*Astragalus deanei*	1	5/15/2008	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	517563	3638861	0.18
Dean's milk-vetch	*Astragalus deanei*	1	5/15/2008	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	529858	3611907	1.03
Dean's milk-vetch	*Astragalus deanei*	1	5/15/2008	Biologist	Alpine	CNDDB	NO	N/A	N/A	518725	3625934	4.72
Dean's milk-vetch	*Astragalus deanei*	1	5/15/2008	Biologist	Alpine	CNDDB	NO	N/A	N/A	515109	3625243	5.83
Dean's milk-vetch	*Astragalus deanei*	1	5/15/2008	Biologist	El Cajon	CNDDB	NO	N/A	N/A	510447	3625197	7.14
Dean's milk-vetch	*Astragalus deanei*	1	5/15/2008	Biologist	El Cajon	CNDDB	NO	N/A	N/A	508824	3624600	7.55
Dean's milk-vetch	*Astragalus deanei*	1	6/24/2008	Biologist	Morena Reservoir	CNDDB	YES	MS-052	D-1	543633	3613742	0.16
Dean's milk-vetch	*Astragalus deanei*	3	6/26/2009	RECON Biologists, 2009	astdea?-3pl	RECON, Sensitive_sp	YES	MS-061	D-2	532804	3613550	0.00
Dean's milk-vetch	*Astragalus deanei*	1	6/26/2009	RECON Biologists, 2009	asrdea-1pl	RECON, Sensitive_sp	YES	MS-061	D-3	532807	3613554	0.00
Dean's milk-vetch	*Astragalus deanei*	4	6/26/2009	RECON Biologists, 2009	astdea-4pl	RECON, Sensitive_sp	YES	MS-061	D-4	532799	3613553	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	YES	MS-026	E-1	564538	3626332	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	YES	MS-024	E-2	567606	3624719	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Live Oak Springs	CNDDB	YES	MS-020	E-3	569548	3619843	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Jacumba	CNDDB	YES	MS-002	E-4	580570	3610537	0.09
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Live Oak Springs	CNDDB	YES	MS-023	E-5	568349	3623254	0.17
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Live Oak Springs	CNDDB	YES	MS-021	E-6	568087	3621376	0.29
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	YES	MS-025	E-7	564716	3625508	0.34

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Cameron Corners	CNDDB	YES	MS-043	E-8	549956	3620449	0.35
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	563233	3626314	0.38
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	548331	3621448	0.41
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	566487	3626085	0.49
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	569375	3622207	0.58
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	547288	3623259	0.70
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Jacumba	CNDDB	NO	N/A	N/A	570736	3618371	0.78
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	563513	3624873	0.92
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	547821	3617815	1.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	545719	3615670	1.08
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Jacumba	CNDDB	NO	N/A	N/A	571201	3616984	1.09
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	547031	3620475	1.21
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	563063	3629938	1.37

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	568186	3627542	1.61
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	566973	3628481	1.90
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Jacumba	CNDDB	NO	N/A	N/A	578636	3614531	2.11
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	562636	3632445	2.80
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	557792	3617673	2.94
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Jacumba	CNDDB	NO	N/A	N/A	577801	3615977	2.99
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	561884	3633800	3.58
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	560259	3610414	6.18
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Tierra Del Sol	CNDDB	NO	N/A	N/A	560675	3608944	6.37
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	10/29/1999	Biologist	Tierra Del Sol	CNDDB	NO	N/A	N/A	559046	3609548	6.62
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/27/2005	Biologist	Jacumba	CNDDB	YES	MS-011	E-9	572243	3611787	0.19
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/27/2005	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	566530	3615239	1.74
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/27/2005	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	551353	3610445	2.38

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/22/2006	Biologist	Sombrero Peak	CNDDB	NO	N/A	N/A	565870	3626466	0.48
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Live Oak Springs	CNDDB	YES	MS-021	E-10	569336	3620962	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Live Oak Springs	CNDDB	YES	MS-016	E-11	568971	3616012	0.26
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Sombrero Peak	CNDDB	YES	MS-028	E-12	562053	3628754	0.51
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	550391	3621262	0.80
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	547176	3624394	1.28
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Jacumba	CNDDB	NO	N/A	N/A	573982	3614097	1.36
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Jacumba	CNDDB	NO	N/A	N/A	581831	3613660	1.63
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	536230	3633763	2.82
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Campo	CNDDB	NO	N/A	N/A	547788	3607172	3.29
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	543975	3632567	6.71
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/25/2008	Biologist	Jacumba	CNDDB	NO	N/A	N/A	576306	3609386	0.69
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	17	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-015	E-13	569783	3614726	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	24	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-015	E-14	569820	3614722	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	4/17/2009	RECON Biologists, 2009	astdou4	RECON, Sensitive_sp	YES	MS-012	E-15	571005	3613771	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/17/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-012	E-16	570787	3613790	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdouper 2	RECON, Sensitive_sp	YES	MS-016	E-17	569393	3616268	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdouper 1	RECON, Sensitive_sp	YES	MS-016	E-18	569404	3616298	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdouper 2	RECON, Sensitive_sp	YES	MS-016	E-19	569402	3616304	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdouper	RECON, Sensitive_sp	YES	MS-016	E-20	569385	3616346	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	asrdouper 1	RECON, Sensitive_sp	YES	MS-017	E-21	569406	3617007	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	asrdouper2	RECON, Sensitive_sp	YES	MS-017	E-22	569400	3617001	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	asrdouper 1	RECON, Sensitive_sp	YES	MS-017	E-23	569408	3616985	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	asrdouper1	RECON, Sensitive_sp	YES	MS-017	E-24	569403	3616970	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	asrdouper 1	RECON, Sensitive_sp	YES	MS-017	E-25	569408	3616965	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-017	E-26	569405	3616952	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	4/23/2009	RECON Biologists, 2009	astdouper3	RECON, Sensitive_sp	YES	MS-017	E-27	569416	3616961	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdouper 2	RECON, Sensitive_sp	YES	MS-017	E-28	569423	3616972	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-29	569429	3616972	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	asrdouper1	RECON, Sensitive_sp	YES	MS-017	E-30	569422	3617706	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-31	569423	3617714	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-32	569429	3617720	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-33	569430	3617721	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-017	E-34	569421	3617729	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-35	569454	3614786	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-36	569452	3614833	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-37	569444	3614823	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-38	569510	3614817	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-39	569557	3614751	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pul-1	RECON, Sensitive_sp	YES	MS-015	E-40	569606	3614758	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	4/23/2009	RECON Biologists, 2009	astdou var pur-5	RECON, Sensitive_sp	YES	MS-015	E-41	569602	3614739	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-42	569605	3614743	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	4/23/2009	RECON Biologists, 2009	astdou var pur-3	RECON, Sensitive_sp	YES	MS-015	E-43	569659	3614766	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	4/23/2009	RECON Biologists, 2009	astdou var pur-6	RECON, Sensitive_sp	YES	MS-015	E-44	569648	3614767	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdou var pur-2	RECON, Sensitive_sp	YES	MS-015	E-45	569663	3614764	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-46	569771	3614722	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur	RECON, Sensitive_sp	YES	MS-015	E-47	569775	3614716	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-48	569797	3614717	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-49	569806	3614715	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdou var pur-2	RECON, Sensitive_sp	YES	MS-015	E-50	569799	3614711	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-51	569773	3614705	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-52	569764	3614703	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	14	4/23/2009	RECON Biologists, 2009	astdouper 14	RECON, Sensitive_sp	YES	MS-016	E-53	569415	3616304	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	11	4/23/2009	RECON Biologists, 2009	asrdouper 11	RECON, Sensitive_sp	YES	MS-016	E-54	569398	3616331	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	4/23/2009	RECON Biologists, 2009	astdouper3	RECON, Sensitive_sp	YES	MS-017	E-55	569417	3616968	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	18	4/23/2009	RECON Biologists, 2009	astdouper18	RECON, Sensitive_sp	YES	MS-017	E-56	569423	3617738	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdou var pur-2	RECON, Sensitive_sp	YES	MS-015	E-57	569844	3614646	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	4/23/2009	RECON Biologists, 2009	astdou var pur-3	RECON, Sensitive_sp	YES	MS-015	E-58	569553	3614742	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	4/23/2009	RECON Biologists, 2009	astdou var pur-1	RECON, Sensitive_sp	YES	MS-015	E-59	569530	3614739	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	4/23/2009	RECON Biologists, 2009	astdou var pur-2	RECON, Sensitive_sp	YES	MS-015	E-60	569719	3614764	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	80	4/23/2009	RECON Biologists, 2009	astdouper80	RECON, Sensitive_sp	YES	MS-017	E-61	569463	3616973	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper-1plnt	RECON, Sensitive_sp	YES	MS-020	E-62	569428	3620271	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-021	E-63	569228	3620793	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	asrdouper1	RECON, Sensitive_sp	YES	MS-021	E-64	569223	3620794	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-021	E-65	569226	3620798	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-021	E-66	569219	3620795	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-021	E-67	569213	3620796	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	50	5/15/2009	RECON Biologists, 2009	astdouper50	RECON, Sensitive_sp	YES	MS-021	E-68	569269	3620648	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/15/2009	RECON Biologists, 2009	astdouper-10plnts	RECON, Sensitive_sp	YES	MS-020	E-69	569337	3620490	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	5/15/2009	RECON Biologists, 2009	astdouper-6-plnts	RECON, Sensitive_sp	YES	MS-020	E-70	569419	3620384	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	53	5/15/2009	RECON Biologists, 2009	astdouper53	RECON, Sensitive_sp	YES	MS-021	E-71	569321	3620661	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	50	5/15/2009	RECON Biologists, 2009	astdouper-50plnts	RECON, Sensitive_sp	YES	MS-020	E-72	569399	3620480	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	5/15/2009	RECON Biologists, 2009	astdouper-30plnts	RECON, Sensitive_sp	YES	MS-020	E-73	569344	3620392	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper-1plnt	RECON, Sensitive_sp	YES	MS-020	E-74	569393	3620271	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-021	E-75	569307	3620726	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	5/15/2009	RECON Biologists, 2009	astdouper-3-plnts	RECON, Sensitive_sp	YES	MS-020	E-76	569377	3620275	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	50	5/15/2009	RECON Biologists, 2009	astdouper-30plnts	RECON, Sensitive_sp	YES	MS-020	E-77	569355	3620290	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	8	5/15/2009	RECON Biologists, 2009	astdouper8	RECON, Sensitive_sp	YES	MS-020	E-78	569545	3619980	0.03

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-79	569525	3618836	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	59	5/15/2009	RECON Biologists, 2009	astdouper59	RECON, Sensitive_sp	YES	MS-021	E-80	569347	3620721	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	100	5/15/2009	RECON Biologists, 2009	astdouper100	RECON, Sensitive_sp	YES	MS-021	E-81	569362	3620694	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	18	5/15/2009	RECON Biologists, 2009	astdouper18	RECON, Sensitive_sp	YES	MS-019	E-82	569530	3618813	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	14	5/15/2009	RECON Biologists, 2009	astdouper14	RECON, Sensitive_sp	YES	MS-021	E-83	569317	3620833	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-84	569554	3618332	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	200	5/15/2009	RECON Biologists, 2009	astdouplnts-200plnts	RECON, Sensitive_sp	YES	MS-020	E-85	569212	3620542	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/15/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-86	569555	3618539	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/15/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-87	569563	3618534	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	8	5/15/2009	RECON Biologists, 2009	astdouper8	RECON, Sensitive_sp	YES	MS-019	E-88	569570	3618529	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	5/15/2009	RECON Biologists, 2009	astdouper4	RECON, Sensitive_sp	YES	MS-019	E-89	569570	3619132	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/15/2009	RECON Biologists, 2009	astdouper5	RECON, Sensitive_sp	YES	MS-019	E-90	569577	3618512	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-021	E-91	569392	3620765	0.07

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-020	E-92	569606	3619938	0.07
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	asrdouper1	RECON, Sensitive_sp	YES	MS-020	E-93	569594	3619872	0.07
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/15/2009	RECON Biologists, 2009	astdouper	RECON, Sensitive_sp	YES	MS-020	E-94	569597	3619891	0.08
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	5/15/2009	RECON Biologists, 2009	astdouper-3plnts	RECON, Sensitive_sp	YES	MS-020	E-95	569245	3620217	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/15/2009	RECON Biologists, 2009	astdouper-10-plnts	RECON, Sensitive_sp	YES	MS-020	E-96	569239	3620238	0.11
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1	RECON, Sensitive_sp	YES	MS-022	E-97	568070	3623091	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-98	568957	3620969	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/20/2009	RECON Biologists, 2009	astdouper-2pl	RECON, Sensitive_sp	YES	MS-021	E-99	568956	3620961	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-100	568952	3620961	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-101	568987	3620969	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/20/2009	RECON Biologists, 2009	astdouper-2pl	RECON, Sensitive_sp	YES	MS-021	E-102	569021	3620923	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/20/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-021	E-103	569131	3620834	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/20/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-021	E-104	569130	3620846	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-105	569174	3620867	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-106	569183	3620840	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-107	569169	3620864	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-108	569166	3620867	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-109	569166	3620858	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-pl1	RECON, Sensitive_sp	YES	MS-024	E-110	567615	3624608	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1plts	RECON, Sensitive_sp	YES	MS-021	E-111	568707	3621175	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	5/20/2009	RECON Biologists, 2009	astdouper-3plts	RECON, Sensitive_sp	YES	MS-021	E-112	569046	3620919	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/20/2009	RECON Biologists, 2009	astdouper-2plts	RECON, Sensitive_sp	YES	MS-021	E-113	569079	3620887	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/20/2009	RECON Biologists, 2009	astdouper-2plts	RECON, Sensitive_sp	YES	MS-021	E-114	569107	3620850	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	5/20/2009	RECON Biologists, 2009	astdouper-4plts	RECON, Sensitive_sp	YES	MS-021	E-115	569114	3620846	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	5/20/2009	RECON Biologists, 2009	astdouper-6plnts	RECON, Sensitive_sp	YES	MS-022	E-116	568326	3622300	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	5/20/2009	RECON Biologists, 2009	astdouper-3pl	RECON, Sensitive_sp	YES	MS-022	E-117	568406	3622071	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	5/20/2009	RECON Biologists, 2009	astdouper-15pl	RECON, Sensitive_sp	YES	MS-021	E-118	568687	3621254	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-119	569177	3620866	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/20/2009	RECON Biologists, 2009	astdouper-1pl	RECON, Sensitive_sp	YES	MS-021	E-120	569166	3620873	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	5/20/2009	RECON Biologists, 2009	astdouper-30plts	RECON, Sensitive_sp	YES	MS-021	E-121	569141	3620813	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	5/20/2009	RECON Biologists, 2009	astdouper-30plts	RECON, Sensitive_sp	YES	MS-021	E-122	569138	3620815	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	5/20/2009	RECON Biologists, 2009	astdouper-6pl	RECON, Sensitive_sp	YES	MS-021	E-123	569192	3620858	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	5/20/2009	RECON Biologists, 2009	astdouper-15plts	RECON, Sensitive_sp	YES	MS-021	E-124	568958	3620916	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	5/20/2009	RECON Biologists, 2009	astdouper-15plts	RECON, Sensitive_sp	YES	MS-021	E-125	568958	3620911	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/21/2009	RECON Biologists, 2009	astdouper-5plts	RECON, Sensitive_sp	YES	MS-026	E-126	564684	3626237	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-026	E-127	564717	3626204	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-026	E-128	564771	3626177	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-026	E-129	564786	3626142	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-025	E-130	565029	3626016	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-025	E-131	565116	3625976	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-025	E-132	565120	3625973	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-133	567288	3624635	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/21/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-024	E-134	567280	3624635	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-135	566876	3624882	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-136	566521	3625127	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-137	566521	3625139	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/21/2009	RECON Biologists, 2009	asrdouper2	RECON, Sensitive_sp	YES	MS-025	E-138	565758	3625569	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-025	E-139	565768	3625579	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	20	5/21/2009	RECON Biologists, 2009	astdoupe -20plts	RECON, Sensitive_sp	YES	MS-024	E-140	566493	3625155	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	5/21/2009	RECON Biologists, 2009	astdouper4	RECON, Sensitive_sp	YES	MS-024	E-141	566545	3625133	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-142	566551	3625137	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	8	5/21/2009	RECON Biologists, 2009	astdouper-8plts	RECON, Sensitive_sp	YES	MS-026	E-143	564756	3626128	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper-1plt	RECON, Sensitive_sp	YES	MS-026	E-144	564683	3626247	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/21/2009	RECON Biologists, 2009	astdouper-2plts	RECON, Sensitive_sp	YES	MS-026	E-145	564778	3626114	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/21/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-024	E-146	566566	3625130	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-147	567240	3624649	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/21/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-024	E-148	566557	3625155	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/21/2009	RECON Biologists, 2009	astdouper-2plts	RECON, Sensitive_sp	YES	MS-026	E-149	564680	3626260	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-024	E-150	566570	3625149	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-026	E-151	564437	3626284	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-026	E-152	564380	3626223	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	asrdouper1	RECON, Sensitive_sp	YES	MS-026	E-153	564424	3626365	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-026	E-154	564348	3626429	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-027	E-155	562531	3627506	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	5/26/2009	RECON Biologists, 2009	astdoouper2	RECON, Sensitive_sp	YES	MS-027	E-156	562525	3627509	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-026	E-157	564382	3626269	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/26/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-026	E-158	564420	3626353	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/28/2009	RECON Biologists, 2009	astdouper?-1plnt	RECON, Sensitive_sp	YES	MS-031	E-159	557075	3628127	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	5/28/2009	RECON Biologists, 2009	astdouper3?	RECON, Sensitive_sp	YES	MS-031	E-160	557107	3628130	0.07
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	5/28/2009	RECON Biologists, 2009	astdouper3?	RECON, Sensitive_sp	YES	MS-031	E-161	557120	3628139	0.07
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/28/2009	RECON Biologists, 2009	astdouper?-1plnt	RECON, Sensitive_sp	YES	MS-031	E-162	557100	3628163	0.09
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-163	568580	3617881	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-164	568934	3618064	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	asrdouper2	RECON, Sensitive_sp	YES	MS-019	E-165	568864	3618312	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	asrdouper1	RECON, Sensitive_sp	YES	MS-019	E-166	568875	3618306	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdoupe 1	RECON, Sensitive_sp	YES	MS-019	E-167	568879	3618300	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	asttdouper1	RECON, Sensitive_sp	YES	MS-019	E-168	568911	3618323	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-169	568939	3618346	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-170	568949	3618347	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-171	568957	3618356	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdoupe 1	RECON, Sensitive_sp	YES	MS-019	E-172	568973	3618398	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	astdouper3	RECON, Sensitive_sp	YES	MS-019	E-173	568951	3618337	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-174	568915	3618286	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-175	568905	3618284	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-176	568841	3618217	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-177	568936	3618269	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-019	E-178	569018	3618345	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-179	569023	3618232	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-180	569040	3618204	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-181	568973	3618106	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-019	E-182	568997	3618088	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-183	569123	3618048	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-184	568598	3617719	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	8/6/2009	RECON Biologists, 2009	astdou-4pl	RECON, Sensitive_sp	YES	MS-017	E-185	568454	3617770	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-186	568468	3617768	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-187	568612	3617782	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-188	568710	3617799	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-189	568852	3617848	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-190	568618	3617867	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-191	568573	3617878	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-192	568926	3618087	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-193	568937	3618077	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-194	568941	3618068	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-195	568829	3618195	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-196	568829	3618192	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-197	568834	3618190	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-198	568838	3618183	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-199	568857	3618320	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-200	568918	3618355	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-201	568937	3618374	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-202	568941	3618362	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-203	568957	3618370	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-204	568988	3618389	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-205	568981	3618366	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-206	568985	3618348	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-207	568982	3618347	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	astdou-3pl	RECON, Sensitive_sp	YES	MS-019	E-208	568979	3618340	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-209	568974	3618332	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-210	568928	3618278	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-211	568922	3618280	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-212	568983	3618303	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-213	568990	3618310	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-214	568996	3618319	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-215	569000	3618324	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-216	569005	3618327	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-217	569056	3618264	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-218	568879	3618144	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	9	8/6/2009	RECON Biologists, 2009	asrdouper9	RECON, Sensitive_sp	YES	MS-017	E-219	568839	3617884	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	asrdouper3	RECON, Sensitive_sp	YES	MS-019	E-220	568885	3618297	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	7	8/6/2009	RECON Biologists, 2009	astdouper7	RECON, Sensitive_sp	YES	MS-019	E-221	568936	3618339	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	astdouper3	RECON, Sensitive_sp	YES	MS-019	E-222	568941	3618352	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	astdouper3	RECON, Sensitive_sp	YES	MS-019	E-223	568978	3618389	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	8/6/2009	RECON Biologists, 2009	astdouper6	RECON, Sensitive_sp	YES	MS-019	E-224	568973	3618350	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	11	8/6/2009	RECON Biologists, 2009	astdouper11	RECON, Sensitive_sp	YES	MS-019	E-225	568963	3618343	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	750	8/6/2009	RECON Biologists, 2009	astdouper750+	RECON, Sensitive_sp	YES	MS-019	E-226	569070	3618329	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	8/6/2009	RECON Biologists, 2009	astdouper4	RECON, Sensitive_sp	YES	MS-019	E-227	569033	3618191	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	9	8/6/2009	RECON Biologists, 2009	zstdouper9	RECON, Sensitive_sp	YES	MS-019	E-228	568965	3618368	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	20	8/6/2009	RECON Biologists, 2009	astdou-20pl	RECON, Sensitive_sp	YES	MS-019	E-229	568876	3618089	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	8/6/2009	RECON Biologists, 2009	astdou-15pl	RECON, Sensitive_sp	YES	MS-019	E-230	568951	3618361	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	8/6/2009	RECON Biologists, 2009	astdou-4pl	RECON, Sensitive_sp	YES	MS-019	E-231	568997	3618104	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	8/6/2009	RECON Biologists, 2009	astdou-4pl	RECON, Sensitive_sp	YES	MS-017	E-232	568841	3617857	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-017	E-233	568992	3618074	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-234	569062	3618056	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-235	568895	3618026	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-236	569112	3618035	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-237	569004	3618077	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	8/6/2009	RECON Biologists, 2009	astdou-5pl	RECON, Sensitive_sp	YES	MS-017	E-238	569107	3618035	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-239	568866	3617706	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-240	569042	3618060	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-241	568920	3618030	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-242	569093	3618034	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-243	569097	3618028	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-017	E-244	569064	3618038	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-245	568997	3618055	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	astdou-3pl	RECON, Sensitive_sp	YES	MS-017	E-246	569065	3618027	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-247	568782	3618196	0.03

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-248	569123	3617994	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	8/6/2009	RECON Biologists, 2009	astdou-3pl	RECON, Sensitive_sp	YES	MS-017	E-249	569124	3617991	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	8/6/2009	RECON Biologists, 2009	astdou-15pl	RECON, Sensitive_sp	YES	MS-017	E-250	569067	3618009	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-251	568773	3618194	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-017	E-252	568996	3618018	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-253	569115	3617979	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	8/6/2009	RECON Biologists, 2009	astdou-5pl	RECON, Sensitive_sp	YES	MS-017	E-254	569052	3618003	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	8/6/2009	RECON Biologists, 2009	astdou-4pl	RECON, Sensitive_sp	YES	MS-019	E-255	568760	3618184	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-256	569024	3618007	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-257	569028	3618004	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-258	568459	3618006	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-017	E-259	569010	3618007	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-260	569062	3617986	0.04

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-261	568463	3618013	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-262	569064	3617981	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	8/6/2009	RECON Biologists, 2009	astdou-6pl	RECON, Sensitive_sp	YES	MS-017	E-263	569015	3617999	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-017	E-264	568996	3617995	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-017	E-265	569055	3617981	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-017	E-266	568996	3617989	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-267	568943	3617874	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-268	569039	3617979	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-269	568949	3617846	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-270	568953	3617851	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-017	E-271	568954	3617851	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdouper2	RECON, Sensitive_sp	YES	MS-017	E-272	568446	3618031	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	8/6/2009	RECON Biologists, 2009	astdouper4	RECON, Sensitive_sp	YES	MS-017	E-273	569015	3617976	0.06

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	14	8/6/2009	RECON Biologists, 2009	astdouper14	RECON, Sensitive_sp	YES	MS-017	E-274	568999	3617974	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdoupe 1	RECON, Sensitive_sp	YES	MS-017	E-275	568962	3617714	0.07
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-276	568981	3617846	0.08
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdouper1	RECON, Sensitive_sp	YES	MS-017	E-277	568982	3617790	0.08
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	8/6/2009	RECON Biologists, 2009	astdou-2pl	RECON, Sensitive_sp	YES	MS-019	E-278	568544	3618150	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdoupe 1	RECON, Sensitive_sp	YES	MS-019	E-279	568514	3618138	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-280	568522	3618153	0.11
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	8/6/2009	RECON Biologists, 2009	astdou-1pl	RECON, Sensitive_sp	YES	MS-019	E-281	568439	3618138	0.12
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	75	4/25/2008	ARCADIS	15ish astrag	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	547042	3622993	0.72
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	7/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	YES	MS-039	E-282	553480	3619324	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	100	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	549077	3618748	0.39
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	100	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	549094	3618618	0.32
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	25	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	YES	MS-043	E-283	549180	3619896	0.61

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/5/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547195	3620878	0.94
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	20	5/6/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547904	3621111	0.63
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	25	5/20/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	546907	3619963	1.53
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/20/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547775	3619452	1.28
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/20/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547779	3619547	1.32
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	5/21/2008	ARCADIS	also in field off road.	ARCADIS, RarePlant_2008_pt	YES	MS-038	E-284	553436	3619993	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-285	553331	3619962	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-286	553318	3619872	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-038	E-287	553298	3620000	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	20	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-038	E-288	553252	3620054	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	25	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-038	E-289	553202	3620068	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-038	E-290	553463	3620157	0.09
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-038	E-291	553452	3620074	0.10

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-292	553575	3619953	0.19
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/21/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-293	553779	3619912	0.32
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-046	E-294	549190	3617091	0.72
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549087	3617112	0.74
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-045	E-295	549169	3617222	0.66
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549088	3617336	0.60
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549048	3617352	0.61
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549072	3617435	0.55
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-045	E-296	549222	3617440	0.52
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	5/22/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-045	E-297	549232	3617405	0.54
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-017	E-298	569410	3617809	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-017	E-299	569427	3617749	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	7	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-300	569494	3618779	0.01

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	16	6/16/2008	ARCADIS	smut present	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-301	569529	3618814	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-302	569532	3619141	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-303	569507	3620047	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-304	569381	3620903	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-305	567337	3625046	0.06
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-306	567240	3624649	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-307	566875	3624881	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-308	566696	3625048	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-309	566679	3625074	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/16/2008	ARCADIS	curved peduncle	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-310	566526	3625081	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-311	566485	3625086	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-312	566457	3625122	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	22	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-313	566438	3625144	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-314	566497	3625159	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-315	566605	3625183	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	6/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-316	566410	3625111	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	6/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-317	566911	3625210	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-318	566765	3625186	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/17/2008	ARCADIS	some errect some prostrate	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-319	566686	3625187	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	16	6/17/2008	ARCADIS	mostly errect incorporates both revisit points	ARCADIS, RarePlant_2008_pt	YES	MS-026	E-320	564682	3626205	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/17/2008	ARCADIS	just off existing rd.	ARCADIS, RarePlant_2008_pt	YES	MS-026	E-321	564417	3626359	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/17/2008	ARCADIS	decumbent	ARCADIS, RarePlant_2008_pt	YES	MS-027	E-322	562338	3626520	0.56
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/17/2008	ARCADIS	tamarix in channel	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	561524	3626390	0.86
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-323	569514	3618332	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-324	569493	3618460	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	8	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-325	569570	3618531	0.06

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-019	E-326	569556	3618479	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-327	569546	3619784	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-328	569496	3619881	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	6/18/2008	ARCADIS	open	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-329	569544	3619930	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-330	569544	3619978	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	9	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-331	569526	3620065	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/18/2008	ARCADIS	open	ARCADIS, RarePlant_2008_pt	YES	MS-020	E-332	569451	3620337	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-333	569020	3620923	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-334	569055	3620912	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-335	569078	3620890	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	14	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-336	569191	3620858	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-337	569317	3620833	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-022	E-338	567992	3623014	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-023	E-339	568047	3623221	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-023	E-340	568057	3623352	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-023	E-341	568204	3624141	0.23
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-023	E-342	568183	3624239	0.17
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-023	E-343	568096	3624377	0.07
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/18/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	E-344	567955	3624504	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	5/22/2008	ARCADIS	021 -no fruit	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-345	553047	3619239	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	551834	3621378	0.86
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	E-346	569170	3620954	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-022	E-347	568289	3622291	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-022	E-348	568225	3622347	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	E-349	562337	3626521	0.56
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	E-350	562474	3626507	0.52

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	E-351	563075	3626574	0.30
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	E-352	563125	3626505	0.32
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	E-353	563163	3626463	0.33
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-016	E-354	569510	3615906	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-016	E-355	569644	3615949	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	19	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-016	E-356	569656	3616238	0.13
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-016	E-357	569610	3615955	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-016	E-358	569589	3615953	0.01
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	30	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-016	E-359	569526	3615539	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-360	569481	3614913	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-361	569352	3615022	0.04
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/24/2008	ARCADIS	off road	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-362	569332	3615043	0.05
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/24/2008	ARCADIS	on edge of existing rd.	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-363	569241	3615013	0.10

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-364	569222	3615005	0.10
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/24/2008	ARCADIS	rd. edge	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-365	569158	3615003	0.13
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-366	569105	3615003	0.16
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-367	569067	3615014	0.18
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-368	569054	3615002	0.19
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-369	568941	3614998	0.25
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-370	569250	3614835	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	4	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-371	569495	3615037	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	11	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-372	569581	3615217	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-373	569843	3614645	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	13	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-374	569802	3614715	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	16	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-375	569784	3614725	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-376	569719	3614764	0.01

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	6	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-377	569647	3614767	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-015	E-378	570026	3614252	0.02
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	6/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547909	3621107	0.63
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	5	6/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547808	3621070	0.67
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	7/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-379	553365	3619272	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	15	7/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-380	553365	3619272	0.03
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	7/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-381	553461	3619302	0.08
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	10	7/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	554375	3619476	0.66
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549023	3618641	0.36
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	548910	3618300	0.34
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	3	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-043	E-382	549185	3619980	0.61
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-383	553203	3619224	0.00
Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	2	7/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-039	E-384	553029	3619244	0.00

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Jacumba milk-vetch	*Astragalus douglasii var. perstrictus*	1	6/12/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	YES	MS-010	E-385	572848	3611664	0.09
Descanso milk-vetch	*Astragalus oocarpus*	1	7/18/1960	Biologist		USFS TESPeos4-1	NO	N/A	N/A	538053	3640135	6.69
Descanso milk-vetch	*Astragalus oocarpus*	1	7/24/1967	Biologist		USFS TESPeos4-1	NO	N/A	N/A	533604	3638668	4.94
Descanso milk-vetch	*Astragalus oocarpus*	1	7/5/1978	Biologist		USFS TESPeos4-1	NO	N/A	N/A	525290	3650179	8.36
Descanso milk-vetch	*Astragalus oocarpus*	1	6/1/1980	Biologist		USFS TESPeos4-1	NO	N/A	N/A	535059	3636213	3.76
Descanso milk-vetch	*Astragalus oocarpus*	1	9/1/1983	Biologist		USFS TESPeos4-1	NO	N/A	N/A	538725	3641016	7.38
Descanso milk-vetch	*Astragalus oocarpus*	1	8/11/1989	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	525223	3650184	8.48
Descanso milk-vetch	*Astragalus oocarpus*	1	4/29/1991	Biologist	Descanso	CNDDB	NO	N/A	N/A	535082	3636325	3.93
Descanso milk-vetch	*Astragalus oocarpus*	1	4/29/1991	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	533594	3638199	4.77
Descanso milk-vetch	*Astragalus oocarpus*	1	6/1/1993	Biologist		USFS TESPeos4-1	NO	N/A	N/A	535263	3635086	3.21
Descanso milk-vetch	*Astragalus oocarpus*	1	4/23/1994	Biologist		USFS TESPeos4-1	NO	N/A	N/A	519700	3626699	4.20
Descanso milk-vetch	*Astragalus oocarpus*	1	8/8/1995	Biologist	Alpine	CNDDB	NO	N/A	N/A	519675	3626760	4.11
Descanso milk-vetch	*Astragalus oocarpus*	1	10/22/1998	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	538050	3641836	7.78
Descanso milk-vetch	*Astragalus oocarpus*	1	6/22/2001	Biologist		USFS TESPeos4-1	NO	N/A	N/A	529584	3638721	4.12
Descanso milk-vetch	*Astragalus oocarpus*	1	3/26/2002	Biologist	Tecate	CNDDB	NO	N/A	N/A	523712	3609379	4.19
Descanso milk-vetch	*Astragalus oocarpus*	1	3/26/2002	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	502875	3660788	9.89
Descanso milk-vetch	*Astragalus oocarpus*	1	4/2/2002	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	529561	3638748	4.15
Descanso milk-vetch	*Astragalus oocarpus*	1	4/2/2002	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	532426	3641334	6.46
Descanso milk-vetch	*Astragalus oocarpus*	1	6/24/2008	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518060	3640865	1.38
Descanso milk-vetch	*Astragalus oocarpus*	1	6/24/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	520498	3611832	4.83

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Descanso milk-vetch	*Astragalus oocarpus*	1	6/24/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	543975	3632567	6.71
Descanso milk-vetch	*Astragalus oocarpus*	1	6/24/2008	Biologist	Ramona	CNDDB	NO	N/A	N/A	513308	3656633	9.42
Descanso milk-vetch	*Astragalus oocarpus*	1	6/24/2008	Biologist	Santa Ysabel	CNDDB	NO	N/A	N/A	527177	3651515	9.80
Descanso milk-vetch	*Astragalus oocarpus*	1	6/26/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	535180	3635085	3.22
Descanso milk-vetch	*Astragalus oocarpus*	1	6/26/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	537910	3640178	6.80
Descanso milk-vetch	*Astragalus oocarpus*	1	6/26/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	538878	3640891	7.46
Descanso milk-vetch	*Astragalus oocarpus*	15	7/7/2008	ARCADIS	infruit flwr see specimen	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531557	3643295	7.23
Descanso milk-vetch	*Astragalus oocarpus*	2	7/7/2008	ARCADIS	in fruit and flwr	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531391	3643352	7.21
Orcutt's brodiaea	*Brodiaea orcuttii*	1	6/18/1936	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	515990	3609737	7.83
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/3/1941	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	531802	3627995	1.27
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/1/1979	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	535908	3643537	7.84
Orcutt's brodiaea	*Brodiaea orcuttii*	1	6/1/1980	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	508769	3655428	7.24
Orcutt's brodiaea	*Brodiaea orcuttii*	1	6/1/1994	Biologist	N/A	USFS TESPeos4	YES	MS-075	F-2	527783	3626319	0.02
Orcutt's brodiaea	*Brodiaea orcuttii*	1	6/2/1995	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	527018	3634432	1.00
Orcutt's brodiaea	*Brodiaea orcuttii*	1	11/14/1995	Biologist	La Jolla	CNDDB	NO	N/A	N/A	485000	3636669	8.21
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/5/1996	Biologist	Poway	CNDDB	NO	N/A	N/A	493761	3639315	2.68
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/5/1996	Biologist	La Mesa	CNDDB	NO	N/A	N/A	491278	3633903	6.24
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/5/1996	Biologist	Del Mar	CNDDB	NO	N/A	N/A	482132	3637779	9.65
Orcutt's brodiaea	*Brodiaea orcuttii*	1	10/4/1996	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	527031	3634471	1.06
Orcutt's brodiaea	*Brodiaea orcuttii*	1	10/4/1996	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	519297	3644519	3.77
Orcutt's brodiaea	*Brodiaea orcuttii*	1	10/26/1998	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	536321	3643097	8.17
Orcutt's brodiaea	*Brodiaea orcuttii*	27	5/30/2001	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	542147	3623341	3.56
Orcutt's brodiaea	*Brodiaea orcuttii*	1	6/8/2001	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	524561	3619078	1.56
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/2/2002	Biologist	San Vicente Reservoi	CNDDB	YES	MS-107	F-1	506847	3641152	0.17
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/2/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	530918	3628325	1.15
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/3/2002	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525393	3610045	3.18
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/3/2002	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	542175	3623345	3.62
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/4/2002	Biologist	La Mesa	CNDDB	NO	N/A	N/A	493395	3628423	8.81
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/8/2002	Biologist	Del Mar	CNDDB	NO	N/A	N/A	486788	3639015	6.66
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/9/2002	Biologist	Del Mar	CNDDB	NO	N/A	N/A	486357	3643829	6.70
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/9/2002	Biologist	Del Mar	CNDDB	NO	N/A	N/A	485951	3643151	6.90

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Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/9/2002	Biologist	Del Mar	CNDDB	NO	N/A	N/A	484818	3643183	7.60
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/22/2002	Biologist	La Mesa	CNDDB	NO	N/A	N/A	490206	3629187	9.09
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/24/2002	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	511343	3646737	4.42
Orcutt's brodiaea	*Brodiaea orcuttii*	1	1/31/2002	Biologist	La Mesa	CNDDB	NO	N/A	N/A	490302	3634676	6.24
Orcutt's brodiaea	*Brodiaea orcuttii*	1	2/21/2002	Biologist	Del Mar	CNDDB	NO	N/A	N/A	483817	3642357	8.20
Orcutt's brodiaea	*Brodiaea orcuttii*	1	6/8/2007	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	541883	3623994	3.89
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/8/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	516192	3611472	7.38
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/10/2008	Biologist	La Mesa	CNDDB	NO	N/A	N/A	490681	3636355	5.33
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/11/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	536381	3644379	8.93
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/18/2008	Biologist	La Mesa	CNDDB	NO	N/A	N/A	489162	3636613	5.97
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/22/2008	Biologist	La Jolla	CNDDB	NO	N/A	N/A	487015	3635971	7.31
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/22/2008	Biologist	La Jolla	CNDDB	NO	N/A	N/A	487965	3634171	7.50
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/22/2008	Biologist	La Jolla	CNDDB	NO	N/A	N/A	485198	3635792	8.34
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/23/2008	Biologist	Poway	CNDDB	NO	N/A	N/A	490492	3640022	4.27
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/23/2008	Biologist	Poway	CNDDB	NO	N/A	N/A	490066	3637987	5.04
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/23/2008	Biologist	La Mesa	CNDDB	NO	N/A	N/A	495423	3634099	5.08
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/23/2008	Biologist	La Mesa	CNDDB	NO	N/A	N/A	488618	3637150	6.08
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/24/2008	Biologist	Poway	CNDDB	NO	N/A	N/A	489530	3638962	5.06
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/30/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	486306	3640337	6.76
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/7/2008	Biologist	Ramona	CNDDB	NO	N/A	N/A	515623	3653021	8.13
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/7/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	483181	3637628	9.05
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	Poway	CNDDB	NO	N/A	N/A	497755	3641420	0.58
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	541653	3626640	4.75
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	487902	3639435	5.92
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	486784	3641612	6.37
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	547388	3634285	6.88
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	La Jolla	CNDDB	NO	N/A	N/A	487553	3632558	8.37
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	La Mesa	CNDDB	NO	N/A	N/A	499615	3627671	8.58
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/12/2008	Biologist	La Jolla	CNDDB	NO	N/A	N/A	487885	3631785	8.58
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/13/2008	Biologist	El Cajon	CNDDB	NO	N/A	N/A	503499	3628384	6.58
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/13/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	485603	3640069	7.22
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/13/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	485356	3645390	7.50
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/13/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	484872	3641395	7.56
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/13/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	485456	3637962	7.65
Orcutt's brodiaea	*Brodiaea orcuttii*	1	8/13/2008	Biologist	La Jolla	CNDDB	NO	N/A	N/A	487770	3630746	9.12
Orcutt's brodiaea	*Brodiaea orcuttii*	1000	6/11/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	538839	3632559	3.67

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Orcutt's brodiaea	*Brodiaea orcuttii*	100	6/11/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	538876	3632454	3.66
Orcutt's brodiaea	*Brodiaea orcuttii*	5000	6/11/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	538995	3632438	3.73
Orcutt's brodiaea	*Brodiaea orcuttii*	150	6/11/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	539080	3632365	3.76
Orcutt's brodiaea	*Brodiaea orcuttii*	500	6/11/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	538954	3632355	3.68
Orcutt's brodiaea	*Brodiaea orcuttii*	100	6/10/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	538859	3632837	3.75
Orcutt's brodiaea	*Brodiaea orcuttii*	100	6/10/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	538925	3632801	3.78
Orcutt's brodiaea	*Brodiaea orcuttii*	1	7/7/2008	ARCADIS	52	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531312	3640628	5.71
Orcutt's brodiaea	*Brodiaea orcuttii*	5	7/7/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531333	3640627	5.72
Dunn's mariposa lily	*Calochortus dunnii*	1	6/15/1906	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	537732	3633479	3.32
Dunn's mariposa lily	*Calochortus dunnii*	1	6/1/1979	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	535264	3643607	8.17
Dunn's mariposa lily	*Calochortus dunnii*	1	6/1/1979	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	537808	3635174	4.03
Dunn's mariposa lily	*Calochortus dunnii*	1	1/28/1980	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	539731	3634331	4.51
Dunn's mariposa lily	*Calochortus dunnii*	1	6/1/1982	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	537144	3643971	8.74
Dunn's mariposa lily	*Calochortus dunnii*	1	6/1/1982	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	542171	3638633	7.47
Dunn's mariposa lily	*Calochortus dunnii*	1	6/20/1988	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	535788	3644556	8.91
Dunn's mariposa lily	*Calochortus dunnii*	1	5/13/1993	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	540675	3634581	5.18

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Dunn's mariposa lily	*Calochortus dunnii*	1	5/13/1993	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	540627	3634504	5.18
Dunn's mariposa lily	*Calochortus dunnii*	1	5/26/2001	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	542129	3623161	3.57
Dunn's mariposa lily	*Calochortus dunnii*	1	5/26/2001	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	542264	3623083	3.57
Dunn's mariposa lily	*Calochortus dunnii*	1	6/6/2001	Biologist	N/A	USFS TESPeos4-1	YES	MS-067	BB-1	527279	3616834	0.62
Dunn's mariposa lily	*Calochortus dunnii*	5	6/6/2001	Biologist	N/A	USFS TESPeos4-1	YES	MS-067	BB-2	527209	3616556	0.65
Dunn's mariposa lily	*Calochortus dunnii*	10	6/6/2001	Biologist	N/A	USFS TESPeos4-1	YES	MS-067	BB-3	527154	3617279	0.63
Dunn's mariposa lily	*Calochortus dunnii*	5	6/6/2001	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	526992	3617455	0.69
Dunn's mariposa lily	*Calochortus dunnii*	1	6/6/2001	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	527127	3616621	0.70
Dunn's mariposa lily	*Calochortus dunnii*	1	3/7/2002	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	535796	3644574	8.95
Dunn's mariposa lily	*Calochortus dunnii*	2000	6/5/2003	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	524867	3636413	2.05
Dunn's mariposa lily	*Calochortus dunnii*	1	6/9/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	539669	3635178	4.93
Dunn's mariposa lily	*Calochortus dunnii*	5	5/30/2007	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	526397	3617113	1.10
Dunn's mariposa lily	*Calochortus dunnii*	1	9/9/2008	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	542152	3623150	3.62
Dunn's mariposa lily	*Calochortus dunnii*	1	9/11/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	540342	3634111	4.93
Dunn's mariposa lily	*Calochortus dunnii*	1	9/11/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	539642	3635192	4.95
Dunn's mariposa lily	*Calochortus dunnii*	1	9/11/2008	Biologist	Tecate	CNDDB	NO	N/A	N/A	528821	3604208	5.82
Dunn's mariposa lily	*Calochortus dunnii*	1	9/11/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	542383	3638567	7.61
Dunn's mariposa lily	*Calochortus dunnii*	1	9/11/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	536917	3644386	9.05
Dunn's mariposa lily	*Calochortus dunnii*	1	9/11/2008	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	514840	3606938	9.42
Dunn's mariposa lily	*Calochortus dunnii*	1	9/12/2008	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526746	3617232	0.90

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Dunn's mariposa lily	*Calochortus dunnii*	1	9/12/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	541653	3626640	4.75
Dunn's mariposa lily	*Calochortus dunnii*	1	9/12/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	513608	3611845	8.85
Dunn's mariposa lily	*Calochortus dunnii*	1	9/16/2008	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	524765	3636468	2.25
Dunn's mariposa lily	*Calochortus dunnii*	57	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	NO	N/A	N/A	527071	3616955	0.78
Dunn's mariposa lily	*Calochortus dunnii*	5	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526983	3616632	0.78
Dunn's mariposa lily	*Calochortus dunnii*	25	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-067	AA-1	527367	3616613	0.58
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	8/14/2009	Kris Alberts	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-098	G-1	513616	3639490	0.22
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	8/14/2009	Kris Alberts	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-098	G-2	513755	3639683	0.11

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Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	8/14/2009	Kris Alberts	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-098	G-3	513790	3639740	0.08
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	8/14/2009	Kris Alberts	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-097	G-4	513999	3639664	0.11
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	8/14/2009	Kris Alberts	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-097	G-5	515524	3639423	0.10
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	8/14/2009	Kris Alberts	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-097	G-6	515170	3639482	0.11

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Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	9/19/1991	Biologist	Escondido	CNDDB	NO	N/A	N/A	493112	3655147	7.42
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	9/19/1991	Biologist	Escondido	CNDDB	NO	N/A	N/A	490914	3656931	9.02
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	9/24/1991	Biologist	Poway	CNDDB	YES	MS-116	G-7	497222	3644672	0.45
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	9/24/1991	Biologist	Poway	CNDDB	NO	N/A	N/A	493658	3650056	4.46
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	9/24/1991	Biologist	Rancho Santa Fe	CNDDB	NO	N/A	N/A	484048	3652101	9.77
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	10/8/1991	Biologist	Escondido	CNDDB	NO	N/A	N/A	491429	3652132	6.31
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	10/8/1991	Biologist	Escondido	CNDDB	NO	N/A	N/A	492008	3654591	7.41
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	10/21/1991	Biologist	El Cajon	CNDDB	NO	N/A	N/A	501810	3628109	7.40
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	2/16/1995	Biologist	Escondido	CNDDB	NO	N/A	N/A	492687	3657087	8.62
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	10/11/1995	Biologist	El Cajon	CNDDB	NO	N/A	N/A	500262	3630889	6.92
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	10/26/1995	Biologist	La Mesa	CNDDB	NO	N/A	N/A	499550	3629895	7.63
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	1/23/2002	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	501170	3638221	2.52
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	11/26/2002	Biologist	La Mesa	CNDDB	NO	N/A	N/A	498970	3631944	6.39

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Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	5/6/2003	Biologist	Escondido	CNDDB	NO	N/A	N/A	494523	3659480	9.67
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	12/8/2003	Biologist	El Cajon	CNDDB	NO	N/A	N/A	500567	3636636	3.44
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	1/5/2004	Biologist	Escondido	CNDDB	NO	N/A	N/A	492063	3658014	9.31
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	1/6/2004	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	501442	3659287	8.91
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	1/6/2004	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	503155	3659964	9.38
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	1/7/2004	Biologist	Escondido	CNDDB	NO	N/A	N/A	495548	3658073	8.68
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	1/22/2004	Biologist	El Cajon	CNDDB	NO	N/A	N/A	508099	3634372	1.89
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	1	6/30/2004	Biologist	El Cajon	CNDDB	YES	MS-102	G-8	509771	3635784	0.59
Payson's jewel-flower	*Caulanthus simulans*	1	6/2/1971	Biologist	N/A	USFS TESPeos4-1	YES	MS-034	H-90	555283	3624085	0.02
Payson's jewel-flower	*Caulanthus simulans*	1	4/1/1982	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	515634	3631110	2.52
Payson's jewel-flower	*Caulanthus simulans*	1	4/1/1982	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	514318	3627604	4.87
Payson's jewel-flower	*Caulanthus simulans*	1	4/1/1983	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	539444	3639140	6.65
Payson's jewel-flower	*Caulanthus simulans*	1	8/11/1989	Biologist	Mount Laguna	CNDDB	YES	MS-034	H-1	555395	3624287	0.04
Payson's jewel-flower	*Caulanthus simulans*	1	8/11/1989	Biologist	Sweeney Pass	CNDDB	NO	N/A	N/A	570330	3624567	1.44
Payson's jewel-flower	*Caulanthus simulans*	1	10/22/1998	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	539268	3639743	6.95
Payson's jewel-flower	*Caulanthus simulans*	100	3/28/2008	ARCADIS	small drainage	ARCADIS, RarePlant_2008_poly	YES	MS-021	H-2	569446	3620800	0.11

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Payson's jewel-flower	*Caulanthus simulans*	300	3/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	YES	MS-021	H-3	569415	3620835	0.10
Payson's jewel-flower	*Caulanthus simulans*	2000	7/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	YES	MS-039	H-4	553558	3619320	0.14
Payson's jewel-flower	*Caulanthus simulans*	20	3/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-021	H-5	569461	3620841	0.13
Payson's jewel-flower	*Caulanthus simulans*	1000	3/28/2008	ARCADIS	evenly distributed across temp and perm pad areas	ARCADIS, RarePlant_2008_pt	YES	MS-021	H-6	569320	3620885	0.06
Payson's jewel-flower	*Caulanthus simulans*	1	3/28/2008	ARCADIS	open sandy	ARCADIS, RarePlant_2008_pt	YES	MS-020	H-7	569485	3620245	0.01
Payson's jewel-flower	*Caulanthus simulans*	50	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-023	H-8	567767	3624041	0.00
Payson's jewel-flower	*Caulanthus simulans*	100	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	H-9	567451	3624613	0.01
Payson's jewel-flower	*Caulanthus simulans*	25	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-024	H-10	567332	3624611	0.00
Payson's jewel-flower	*Caulanthus simulans*	10	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-11	564272	3626415	0.00
Payson's jewel-flower	*Caulanthus simulans*	5	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-12	564125	3626503	0.00
Payson's jewel-flower	*Caulanthus simulans*	15	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-13	563880	3626411	0.13
Payson's jewel-flower	*Caulanthus simulans*	25	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-14	563822	3626428	0.14
Payson's jewel-flower	*Caulanthus simulans*	150	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-15	563798	3626439	0.14

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Payson's jewel-flower	*Caulanthus simulans*	20	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-16	563713	3626434	0.17
Payson's jewel-flower	*Caulanthus simulans*	4	4/2/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-026	H-17	563568	3626417	0.22
Payson's jewel-flower	*Caulanthus simulans*	5	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-18	565259	3625883	0.00
Payson's jewel-flower	*Caulanthus simulans*	10	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-19	565031	3626015	0.00
Payson's jewel-flower	*Caulanthus simulans*	30	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-20	564934	3626044	0.00
Payson's jewel-flower	*Caulanthus simulans*	150	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	H-21	562514	3626456	0.54
Payson's jewel-flower	*Caulanthus simulans*	50	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	H-22	562532	3626449	0.53
Payson's jewel-flower	*Caulanthus simulans*	25	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-027	H-23	562575	3626437	0.53
Payson's jewel-flower	*Caulanthus simulans*	20	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	562624	3626411	0.53
Payson's jewel-flower	*Caulanthus simulans*	18	4/3/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	562640	3626417	0.52
Payson's jewel-flower	*Caulanthus simulans*	200	4/4/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	561223	3626414	0.93
Payson's jewel-flower	*Caulanthus simulans*	75	4/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-24	554299	3622593	0.09
Payson's jewel-flower	*Caulanthus simulans*	50	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-037	H-25	553968	3622393	0.04

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Payson's jewel-flower	*Caulanthus simulans*	10	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-037	H-26	553986	3622375	0.05
Payson's jewel-flower	*Caulanthus simulans*	50	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-037	H-27	554006	3622322	0.08
Payson's jewel-flower	*Caulanthus simulans*	100	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-037	H-28	554014	3622289	0.10
Payson's jewel-flower	*Caulanthus simulans*	100	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-037	H-29	554017	3622274	0.11
Payson's jewel-flower	*Caulanthus simulans*	25	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-30	554511	3622973	0.03
Payson's jewel-flower	*Caulanthus simulans*	5	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-31	554525	3622982	0.03
Payson's jewel-flower	*Caulanthus simulans*	50	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-32	554528	3622987	0.03
Payson's jewel-flower	*Caulanthus simulans*	15	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-33	554542	3622978	0.02
Payson's jewel-flower	*Caulanthus simulans*	100	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-34	554529	3622989	0.03
Payson's jewel-flower	*Caulanthus simulans*	25	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-35	554538	3623007	0.04
Payson's jewel-flower	*Caulanthus simulans*	100	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-36	554542	3623032	0.05
Payson's jewel-flower	*Caulanthus simulans*	100	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-37	554548	3623033	0.05
Payson's jewel-flower	*Caulanthus simulans*	25	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-38	554803	3623332	0.07

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Payson's jewel-flower	*Caulanthus simulans*	100	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-39	554792	3623338	0.08
Payson's jewel-flower	*Caulanthus simulans*	250	4/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-035	H-40	554773	3623327	0.08
Payson's jewel-flower	*Caulanthus simulans*	400	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-41	555270	3624423	0.00
Payson's jewel-flower	*Caulanthus simulans*	100	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-42	555314	3624574	0.00
Payson's jewel-flower	*Caulanthus simulans*	200	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-43	555328	3624585	0.00
Payson's jewel-flower	*Caulanthus simulans*	500	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-44	555336	3624587	0.00
Payson's jewel-flower	*Caulanthus simulans*	100	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-45	555346	3624609	0.00
Payson's jewel-flower	*Caulanthus simulans*	50	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-46	555329	3624618	0.00
Payson's jewel-flower	*Caulanthus simulans*	300	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-47	555267	3624983	0.01
Payson's jewel-flower	*Caulanthus simulans*	500	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-48	555308	3624973	0.02
Payson's jewel-flower	*Caulanthus simulans*	50	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-49	555332	3624962	0.01
Payson's jewel-flower	*Caulanthus simulans*	100	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-50	555405	3624950	0.00
Payson's jewel-flower	*Caulanthus simulans*	200	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-034	H-51	555442	3624916	0.02

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Payson's jewel-flower	*Caulanthus simulans*	25	4/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-032	H-52	556347	3626402	0.04
Payson's jewel-flower	*Caulanthus simulans*	50	4/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549533	3623471	0.96
Payson's jewel-flower	*Caulanthus simulans*	15	4/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549550	3623456	0.96
Payson's jewel-flower	*Caulanthus simulans*	10	6/9/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	537711	3633259	3.27
Payson's jewel-flower	*Caulanthus simulans*	50	4/3/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-53	566021	3625318	0.02
Payson's jewel-flower	*Caulanthus simulans*	10	4/3/2008	ARCADIS	Caulanthus simulans 10	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-54	565981	3625385	0.01
Payson's jewel-flower	*Caulanthus simulans*	5	4/3/2008	ARCADIS	Caulanthus simulans 5	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-55	565724	3625595	0.00
Payson's jewel-flower	*Caulanthus simulans*	50	4/3/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-56	565638	3625605	0.00
Payson's jewel-flower	*Caulanthus simulans*	20	4/3/2008	ARCADIS	Caulanthus simulans 20	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-57	565585	3625614	0.01
Payson's jewel-flower	*Caulanthus simulans*	5	4/3/2008	ARCADIS	Caulanthus simulans 5	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-58	565445	3625671	0.03
Payson's jewel-flower	*Caulanthus simulans*	20	4/3/2008	ARCADIS	Caulanthus simulans 20	ARCADIS, RarePlant_2008_pt	YES	MS-025	H-59	565326	3625839	0.00
Payson's jewel-flower	*Caulanthus simulans*	50	3/27/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-014	H-60	570549	3614588	0.05
Payson's jewel-flower	*Caulanthus simulans*	50	3/31/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-61	554269	3619405	0.59

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Payson's jewel-flower	*Caulanthus simulans*	40	3/31/2008	ARCADIS	Caulanthus simulans 40	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-62	553613	3619210	0.19
Payson's jewel-flower	*Caulanthus simulans*	50	3/31/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-63	553606	3619220	0.18
Payson's jewel-flower	*Caulanthus simulans*	20	3/31/2008	ARCADIS	Caulanthus simulans 20	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-64	553592	3619311	0.16
Payson's jewel-flower	*Caulanthus simulans*	200	3/31/2008	ARCADIS	Caulanthus simulans 200	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-65	553582	3619313	0.16
Payson's jewel-flower	*Caulanthus simulans*	2000	3/31/2008	ARCADIS	Caulanthus simulans 2000	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-66	553577	3619314	0.15
Payson's jewel-flower	*Caulanthus simulans*	1500	3/31/2008	ARCADIS	Caulanthus simulans 1500	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-67	553561	3619324	0.15
Payson's jewel-flower	*Caulanthus simulans*	1000	3/31/2008	ARCADIS	Caulanthus simulans 1000	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-68	553546	3619328	0.14
Payson's jewel-flower	*Caulanthus simulans*	30	3/31/2008	ARCADIS	Caulanthus simulans 30	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-69	553360	3619272	0.03
Payson's jewel-flower	*Caulanthus simulans*	5	3/31/2008	ARCADIS	Caulanthus simulans 5	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-70	553350	3619252	0.03
Payson's jewel-flower	*Caulanthus simulans*	10	3/31/2008	ARCADIS	Caulanthus simulans 10	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-71	553248	3619830	0.00
Payson's jewel-flower	*Caulanthus simulans*	40	3/31/2008	ARCADIS	Caulanthus simulans 40	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-72	553185	3619861	0.01
Payson's jewel-flower	*Caulanthus simulans*	30	3/31/2008	ARCADIS	Caulanthus simulans 30	ARCADIS, RarePlant_2008_pt	YES	MS-038	H-73	553262	3620001	0.00
Payson's jewel-flower	*Caulanthus simulans*	15	4/1/2008	ARCADIS	Caulanthus simulans 15	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-74	552669	3619189	0.04

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Payson's jewel-flower	*Caulanthus simulans*	25	4/1/2008	ARCADIS	Caulanthus simulans 25	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-75	552681	3619178	0.04
Payson's jewel-flower	*Caulanthus simulans*	50	4/1/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-76	552652	3619140	0.07
Payson's jewel-flower	*Caulanthus simulans*	30	4/1/2008	ARCADIS	Caulanthus simulans 30	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-77	552728	3619031	0.14
Payson's jewel-flower	*Caulanthus simulans*	100	4/1/2008	ARCADIS	Caulanthus simulans 100	ARCADIS, RarePlant_2008_pt	YES	MS-039	H-78	552725	3619025	0.14
Payson's jewel-flower	*Caulanthus simulans*	100	4/1/2008	ARCADIS	Caulanthus simulans 100	ARCADIS, RarePlant_2008_pt	YES	MS-042	H-79	552377	3618514	0.37
Payson's jewel-flower	*Caulanthus simulans*	100	4/1/2008	ARCADIS	Caulanthus simulans 100	ARCADIS, RarePlant_2008_pt	YES	MS-042	H-80	552370	3618525	0.36
Payson's jewel-flower	*Caulanthus simulans*	50	4/1/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-042	H-81	552309	3618582	0.31
Payson's jewel-flower	*Caulanthus simulans*	25	4/1/2008	ARCADIS	Caulanthus simulans 25	ARCADIS, RarePlant_2008_pt	YES	MS-042	H-82	552251	3618596	0.29
Payson's jewel-flower	*Caulanthus simulans*	50	4/1/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-042	H-83	552181	3618612	0.26
Payson's jewel-flower	*Caulanthus simulans*	200	4/1/2008	ARCADIS	Caulanthus simulans 200	ARCADIS, RarePlant_2008_pt	YES	MS-042	H-84	552174	3618609	0.26
Payson's jewel-flower	*Caulanthus simulans*	50	4/1/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-041	H-85	552752	3618592	0.40
Payson's jewel-flower	*Caulanthus simulans*	25	4/1/2008	ARCADIS	Caulanthus simulans 25	ARCADIS, RarePlant_2008_pt	YES	MS-041	H-86	552801	3618595	0.38
Payson's jewel-flower	*Caulanthus simulans*	50	4/1/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-041	H-87	552806	3618596	0.38

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Payson's jewel-flower	*Caulanthus simulans*	45	4/1/2008	ARCADIS	Caulanthus simulans 45	ARCADIS, RarePlant_2008_pt	YES	MS-041	H-88	552860	3618619	0.34
Payson's jewel-flower	*Caulanthus simulans*	50	4/1/2008	ARCADIS	Caulanthus simulans 50	ARCADIS, RarePlant_2008_pt	YES	MS-041	H-89	552918	3618635	0.32
Lakeside ceanothus	*Ceanothus cyaneus*	1	1/14/2010	Linette Lina	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-104	I-1	508312	3638668	0.00
Lakeside ceanothus	*Ceanothus cyaneus*	4	1/14/2010	Linette Lina	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-104	I-2	508332	3638668	0.00
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/11/1989	Biologist	Dulzura	CNDDB	NO	N/A	N/A	513757	3623246	7.30
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/5/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	511324	3641959	1.61
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/5/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	511301	3642577	1.97
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/5/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	510507	3642264	2.01
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/5/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	508325	3646138	2.90
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/6/1996	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	517846	3639902	0.78
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/6/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	508225	3647283	3.13

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Lakeside ceanothus	*Ceanothus cyaneus*	1	8/6/1996	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	512632	3645288	3.37
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/26/1996	Biologist	Alpine	CNDDB	YES	MS-090	I-3	517760	3634913	0.15
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/26/1996	Biologist	Alpine	CNDDB	NO	N/A	N/A	512935	3627047	5.51
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/27/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	500888	3648807	2.41
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/27/1996	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518292	3642970	2.63
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/27/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	506922	3649808	3.65
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/28/1996	Biologist	Descanso	CNDDB	NO	N/A	N/A	535831	3635543	3.64
Lakeside ceanothus	*Ceanothus cyaneus*	1	8/28/1996	Biologist	Del Mar	CNDDB	NO	N/A	N/A	484074	3637876	8.48
Lakeside ceanothus	*Ceanothus cyaneus*	1	9/12/1996	Biologist	Alpine	CNDDB	NO	N/A	N/A	516879	3633717	0.83
Lakeside ceanothus	*Ceanothus cyaneus*	1	9/12/1996	Biologist	Alpine	CNDDB	NO	N/A	N/A	514261	3633593	2.33
Lakeside ceanothus	*Ceanothus cyaneus*	1	6/29/2005	Biologist	El Cajon	CNDDB	NO	N/A	N/A	506587	3637228	1.37
Lakeside ceanothus	*Ceanothus cyaneus*	1	7/5/2005	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	510518	3640205	0.79
Lakeside ceanothus	*Ceanothus cyaneus*	1	7/5/2005	Biologist	Alpine	CNDDB	NO	N/A	N/A	515467	3632769	1.88
Lakeside ceanothus	*Ceanothus cyaneus*	1	7/5/2005	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	507860	3650932	4.56
Lakeside ceanothus	*Ceanothus cyaneus*	1	5/14/2009	RECON Biologists, 2009	ceancya-1plnts	RECON, Sensitive_sp	YES	MS-104	I-4	508121	3639018	0.00
Lakeside ceanothus	*Ceanothus cyaneus*	50	5/19/2009	RECON Biologists, 2009	ceacya-50plnts	RECON, Sensitive_sp	YES	MS-104	I-5	508570	3639218	0.25
Lakeside ceanothus	*Ceanothus cyaneus*	1	5/6/1976	Biologist	N/A	USFS TESPeos4	YES	MS-096	I-6	517084	3639651	0.39
Lakeside ceanothus	*Ceanothus cyaneus*	1	6/19/1932	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	513109	3634389	2.08
Lakeside ceanothus	*Ceanothus cyaneus*	1	6/19/1932	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	514672	3633117	2.18
Lakeside ceanothus	*Ceanothus cyaneus*	1	6/18/1936	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	517447	3634705	0.28

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Lakeside ceanothus	*Ceanothus cyaneus*	1	11/30/1964	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518987	3643037	2.71
Lakeside ceanothus	*Ceanothus cyaneus*	1	6/3/1980	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	516626	3633900	0.91
Lakeside ceanothus	*Ceanothus cyaneus*	1	4/26/1983	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	519282	3628330	3.23
Lakeside ceanothus	*Ceanothus cyaneus*	1	4/8/1985	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	511916	3641806	1.35
Lakeside ceanothus	*Ceanothus cyaneus*	1	5/16/1988	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	511919	3642762	1.84
Lakeside ceanothus	*Ceanothus cyaneus*	1	3/4/1991	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	516951	3646284.	3.96
Lakeside ceanothus	*Ceanothus cyaneus*	1	3/4/1991	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	514596	3641928	1.00
Lakeside ceanothus	*Ceanothus cyaneus*	1	3/4/1991	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	512040	3641344	0.97
Lakeside ceanothus	*Ceanothus cyaneus*	1	4/14/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518296	3642986	2.62
Lakeside ceanothus	*Ceanothus cyaneus*	1	4/14/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518300	3642932	2.60
Lakeside ceanothus	*Ceanothus cyaneus*	1	4/14/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	517871	3639888	0.75
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	4/10/2007	ARCADIS	ver. longispina	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	527005	3617351	0.73
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	2/27/1996	Biologist	Descanso	CNDDB	NO	N/A	N/A	539022	3625164	4.67
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	3/26/1996	Biologist	Barrett Lake	CNDDB	YES	MS-067	J-1	527675	3616604	0.39
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	8/12/1997	Biologist	Del Mar	CNDDB	NO	N/A	N/A	485289	3640795	7.34
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	4/4/2002	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	527094	3617329	0.67
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	4/4/2002	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	544432	3639750	9.05

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Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	4/5/2002	Biologist	La Jolla	CNDDB	NO	N/A	N/A	486216	3633259	8.69
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	1/23/2004	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	519170	3643709	3.28
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	5/5/2005	Biologist	Poway	CNDDB	NO	N/A	N/A	490334	3638296	4.80
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	5/6/2005	Biologist	La Mesa	CNDDB	NO	N/A	N/A	491845	3636975	4.54
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	1	5/6/2005	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	549552	3641675	9.55
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	12	6/6/2001	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	527101	3617313	0.65
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	300	5/5/2003	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	519416.	3643711	3.31
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Alpine	CNDDB	YES	MS-092	K-1	519094	3636570	0.12
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	San Vicente Reservoi	CNDDB	YES	MS-107	K-2	506847	3641152	0.17
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	544025	3615091	1.00
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525234	3619122	1.17
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	524523	3614057	1.97
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	516217	3643399	2.33
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Alpine	CNDDB	NO	N/A	N/A	518268	3629793	2.49
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Alpine	CNDDB	NO	N/A	N/A	514654	3630465	3.21
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Dulzura	CNDDB	NO	N/A	N/A	520158	3614370	4.54
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Descanso	CNDDB	NO	N/A	N/A	539022	3625164	4.67
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	502578	3655927	6.87
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Ramona	CNDDB	NO	N/A	N/A	515304	3652128	7.56
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Jamul Mountains	CNDDB	NO	N/A	N/A	509635	3621730	9.29
Delicate clarkia	*Clarkia delicata*	1	8/29/1997	Biologist	Jamul Mountains	CNDDB	NO	N/A	N/A	511606	3616571	9.77
Delicate clarkia	*Clarkia delicata*	350	5/18/2001	Biologist		USFS TESPeos4-1	YES	MS-057	K-10	537495	3613590	0.14
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	523994	3632379	0.30
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	Morena Reservoir	CNDDB	YES	MS-057	K-3	537480	3613590	0.33
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	Descanso	CNDDB	NO	N/A	N/A	535831	3635543	3.64
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	512309	3647288	4.63
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	510613	3648358	4.75

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Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	Escondido	CNDDB	NO	N/A	N/A	499248	3653211	5.28
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	Dulzura	CNDDB	NO	N/A	N/A	513757	3623246	7.30
Delicate clarkia	*Clarkia delicata*	1	2/19/2002	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	520499	3603361	8.30
Delicate clarkia	*Clarkia delicata*	1	9/15/2004	Biologist	Barrett Lake	CNDDB	YES	MS-065	K-4	528004	3615604	0.00
Delicate clarkia	*Clarkia delicata*	1	9/16/2004	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	510198	3650461	5.29
Delicate clarkia	*Clarkia delicata*	1	9/16/2004	Biologist	Dulzura	CNDDB	NO	N/A	N/A	517054	3616337	6.45
Delicate clarkia	*Clarkia delicata*	1	9/16/2004	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	502307	3658031	8.15
Delicate clarkia	*Clarkia delicata*	1	9/16/2004	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	502592	3658524	8.47
Delicate clarkia	*Clarkia delicata*	2000	4/26/2005	Biologist		USFS TESPeos4-1	NO	N/A	N/A	524341	3637134	2.41
Delicate clarkia	*Clarkia delicata*	50	5/31/2006	Biologist		USFS TESPeos4-1	NO	N/A	N/A	530948	3647790	9.58
Delicate clarkia	*Clarkia delicata*	100	5/31/2006	Biologist		USFS TESPeos4-1	NO	N/A	N/A	531407	3647273	9.45
Delicate clarkia	*Clarkia delicata*	1	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-5	517800	3638216	0.00
Delicate clarkia	*Clarkia delicata*	1	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-6	517774	3638210	0.00
Delicate clarkia	*Clarkia delicata*	1	4/14/2009	RECON Biologists, 2009	cladel 1 plt	RECON, Sensitive_sp	YES	MS-094	K-7	518519	3637991	0.00
Delicate clarkia	*Clarkia delicata*	50	4/14/2009	RECON Biologists, 2009	cladel 50	RECON, Sensitive_sp	YES	MS-094	K-8	517570	3638290	0.00
Delicate clarkia	*Clarkia delicata*	75	4/14/2009	RECON Biologists, 2009	cladel 75	RECON, Sensitive_sp	YES	MS-095	K-9	517329	3638398	0.00
Delicate clarkia	*Clarkia delicata*	25	4/14/2009	RECON Biologists, 2009	cladel 25	RECON, Sensitive_sp	YES	MS-095	K-10	517352	3638398	0.00
Delicate clarkia	*Clarkia delicata*	25	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-11	517686	3638247	0.00
Delicate clarkia	*Clarkia delicata*	350	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-12	518236	3638098	0.00
Delicate clarkia	*Clarkia delicata*	2	4/14/2009	RECON Biologists, 2009	clde2	RECON, Sensitive_sp	YES	MS-094	K-13	518356	3638059	0.00
Delicate clarkia	*Clarkia delicata*	200	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-14	518395	3638045	0.00
Delicate clarkia	*Clarkia delicata*	3	4/14/2009	RECON Biologists, 2009	clde3	RECON, Sensitive_sp	YES	MS-094	K-15	517694	3638270	0.00
Delicate clarkia	*Clarkia delicata*	300	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-16	518321	3638077	0.00
Delicate clarkia	*Clarkia delicata*	110	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-17	517789	3638251	0.00
Delicate clarkia	*Clarkia delicata*	500	4/14/2009	RECON Biologists, 2009	N/A	RECON, Sensitive_sp	YES	MS-094	K-18	517903	3638223	0.00
Delicate clarkia	*Clarkia delicata*	150	4/14/2009	RECON Biologists, 2009	cladel 150	RECON, Sensitive_sp	YES	MS-095	K-19	516995	3638382	0.12

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Delicate clarkia	*Clarkia delicata*	30	4/28/2009	RECON Biologists, 2009	cladel-30plants	RECON, Sensitive_sp	YES	MS-103	K-20	510321	3638730	0.00
Delicate clarkia	*Clarkia delicata*	200	4/28/2009	RECON Biologists, 2009	cladel-200 plant	RECON, Sensitive_sp	YES	MS-103	K-21	510319	3638762	0.00
Delicate clarkia	*Clarkia delicata*	20	4/28/2009	RECON Biologists, 2009	cladel-20	RECON, Sensitive_sp	YES	MS-103	K-22	510341	3638756	0.00
Delicate clarkia	*Clarkia delicata*	20	4/28/2009	RECON Biologists, 2009	cladel-20	RECON, Sensitive_sp	YES	MS-103	K-23	510359	3638777	0.00
Delicate clarkia	*Clarkia delicata*	150	4/28/2009	RECON Biologists, 2009	cladel 150	RECON, Sensitive_sp	YES	MS-100	K-24	510580	3638819	0.00
Delicate clarkia	*Clarkia delicata*	35	4/28/2009	RECON Biologists, 2009	cladel 35	RECON, Sensitive_sp	YES	MS-100	K-25	510589	3638813	0.00
Delicate clarkia	*Clarkia delicata*	150	4/28/2009	RECON Biologists, 2009	cladel-150 connect l	RECON, Sensitive_sp	YES	MS-103	K-26	510330	3638740	0.00
Delicate clarkia	*Clarkia delicata*	30	4/28/2009	RECON Biologists, 2009	cladel-30 plants	RECON, Sensitive_sp	YES	MS-100	K-27	510648	3638769	0.03
Delicate clarkia	*Clarkia delicata*	50	4/28/2009	RECON Biologists, 2009	cladel-50	RECON, Sensitive_sp	YES	MS-100	K-28	510605	3638725	0.05
Delicate clarkia	*Clarkia delicata*	200	5/14/2009	RECON Biologists, 2009	cladel-200plnts	RECON, Sensitive_sp	YES	MS-104	K-29	508050	3639116	0.00
Delicate clarkia	*Clarkia delicata*	100	5/14/2009	RECON Biologists, 2009	cladel--100plnts	RECON, Sensitive_sp	YES	MS-104	K-30	508060	3639099	0.00
Delicate clarkia	*Clarkia delicata*	100	5/14/2009	RECON Biologists, 2009	cladel-100plnts	RECON, Sensitive_sp	YES	MS-104	K-31	508050	3639110	0.00
Delicate clarkia	*Clarkia delicata*	200	5/14/2009	RECON Biologists, 2009	cladel-200plnts	RECON, Sensitive_sp	YES	MS-104	K-32	508058	3639087	0.00
Delicate clarkia	*Clarkia delicata*	300	5/14/2009	RECON Biologists, 2009	cladel-300plnts-road	RECON, Sensitive_sp	YES	MS-104	K-33	508032	3639115	0.01
Delicate clarkia	*Clarkia delicata*	85	5/5/2008	ARCADIS	from point	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	547109	3621347	0.73
Delicate clarkia	*Clarkia delicata*	5	4/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	510245	3649168	4.81
Delicate clarkia	*Clarkia delicata*	50	4/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	510269	3649412	4.91
Delicate clarkia	*Clarkia delicata*	20	4/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	510357	3649811	5.11

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Delicate clarkia	*Clarkia delicata*	3	4/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	510373	3649895	5.15
Delicate clarkia	*Clarkia delicata*	25	4/17/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	510413	3650086	5.24
Delicate clarkia	*Clarkia delicata*	50	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-075	K-34	526735	3626644	0.02
Delicate clarkia	*Clarkia delicata*	45	5/5/2008	ARCADIS	poly pt	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547103	3621357	0.73
Delicate clarkia	*Clarkia delicata*	100	5/5/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547105	3621362	0.73
Delicate clarkia	*Clarkia delicata*	25	5/5/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547092	3621273	0.77
Delicate clarkia	*Clarkia delicata*	35	5/5/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547128	3620901	0.95
Delicate clarkia	*Clarkia delicata*	15	5/5/2008	ARCADIS	not confirmed-white anthers	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547074	3621480	0.69
Delicate clarkia	*Clarkia delicata*	75	5/5/2008	ARCADIS	has red anthers	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	547060	3621416	0.72
Delicate clarkia	*Clarkia delicata*	10	5/6/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	546967	3620821	1.04
Delicate clarkia	*Clarkia delicata*	50	5/7/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531748	3642410	6.80
Delicate clarkia	*Clarkia delicata*	15	5/7/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531363	3642716	6.85
Delicate clarkia	*Clarkia delicata*	36	5/7/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531350	3642723	6.85

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Delicate clarkia	*Clarkia delicata*	2000	5/7/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531899	3643106	7.22
Delicate clarkia	*Clarkia delicata*	50	5/8/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549224	3621720	0.69
Delicate clarkia	*Clarkia delicata*	15	5/8/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549236	3621741	0.69
Delicate clarkia	*Clarkia delicata*	150	5/8/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549238	3621530	0.74
Delicate clarkia	*Clarkia delicata*	20	5/8/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549283	3621377	0.82
Delicate clarkia	*Clarkia delicata*	120	5/8/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	549307	3621358	0.84
Delicate clarkia	*Clarkia delicata*	15	5/13/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532757	3647102	9.68
Delicate clarkia	*Clarkia delicata*	20	5/13/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532958	3647151	9.76
Delicate clarkia	*Clarkia delicata*	20	5/13/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532907	3647197	9.78
Delicate clarkia	*Clarkia delicata*	25	7/7/2008	ARCADIS	in fruit	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531766	3643137	7.20
Delicate clarkia	*Clarkia delicata*	50	7/7/2008	ARCADIS	in fruit	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531675	3643278	7.25
Delicate clarkia	*Clarkia delicata*	20	7/9/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-110	K-35	504097	3644343	0.09
Delicate clarkia	*Clarkia delicata*	10	7/9/2008	ARCADIS	key from fruit	ARCADIS, RarePlant_2008_pt	YES	MS-110	K-36	504118	3644351	0.10

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Delicate clarkia	*Clarkia delicata*	10	7/9/2008	ARCADIS	key from fruit	ARCADIS, RarePlant_2008_pt	YES	MS-110	K-37	504124	3644346	0.10
Delicate clarkia	*Clarkia delicata*	5	7/9/2008	ARCADIS	key from fruit	ARCADIS, RarePlant_2008_pt	YES	MS-110	K-38	504132	3644337	0.10
Delicate clarkia	*Clarkia delicata*	10	7/9/2008	ARCADIS	key from fruit	ARCADIS, RarePlant_2008_pt	YES	MS-109	K-39	504444	3643550	0.02
Delicate clarkia	*Clarkia delicata*	50	5/3/2007	N/A	50 plants	2007 Bio Data, RarePlant_2007_pts	NO	N/A	N/A	510149	3648726	4.61
Delicate clarkia	*Clarkia delicata*	40	5/3/2007	N/A	40 plants	2007 Bio Data, RarePlant_2007_pts	NO	N/A	N/A	510246	3649168	4.81
Delicate clarkia	*Clarkia delicata*	60	5/3/2007	N/A	60 plants	2007 Bio Data, RarePlant_2007_pts	NO	N/A	N/A	510247	3649215	4.83
Delicate clarkia	*Clarkia delicata*	100	5/3/2007	N/A	100 plants	2007 Bio Data, RarePlant_2007_pts	NO	N/A	N/A	510257	3649255	4.85
Delicate clarkia	*Clarkia delicata*	50	5/3/2007	N/A	50	2007 Bio Data, RarePlant_2007_pts	NO	N/A	N/A	510279	3649422	4.92
Delicate clarkia	*Clarkia delicata*	15	5/3/2007	N/A	15 plants	2007 Bio Data, RarePlant_2007_pts	NO	N/A	N/A	510448	3650159	5.28
Townsend's big-eared bat	*Corynorhinus townsendii*	1	5/12/1993	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	548300	3639252	8.68
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/20/2000	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	550218	3637486	7.10
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/20/2000	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	549719	3641662	9.50
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/24/2000	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	521683	3606548	6.35
Townsend's big-eared bat	*Corynorhinus townsendii*	1	3/7/2007	Biologist	Sweeney Pass	CNDDB	NO	N/A	N/A	572068	3635866	7.32
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/4/2008	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	528464	3609869	2.33
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/4/2008	Biologist	Tecate	CNDDB	NO	N/A	N/A	527217	3609250	2.93

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Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/4/2008	Biologist	Tecate	CNDDB	NO	N/A	N/A	526248	3609100	3.30
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/4/2008	Biologist	Tecate	CNDDB	NO	N/A	N/A	525728	3609093	3.49
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/4/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	542425	3634335	6.15
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/4/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	544461	3638844	8.71
Townsend's big-eared bat	*Corynorhinus townsendii*	1	11/5/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	517496	3616665	6.17
Townsend's big-eared bat	*Corynorhinus townsendii*	1	11/5/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	516634	3615705	6.68
Townsend's big-eared bat	*Corynorhinus townsendii*	1	11/5/2008	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	539809	3641497	8.06
Townsend's big-eared bat	*Corynorhinus townsendii*	1	11/10/2008	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	522208	3603577	7.55
Townsend's big-eared bat	*Corynorhinus townsendii*	1	11/17/2008	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	552158	3637205	6.34
Townsend's big-eared bat	*Corynorhinus townsendii*	1	11/17/2008	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	550679	3636389	6.37
Townsend's big-eared bat	*Corynorhinus townsendii*	1	12/19/2008	Biologist	Cameron Corners	CNDDB	YES	MS-036	L-1	548224	3621774	0.20
Townsend's big-eared bat	*Corynorhinus townsendii*	1	12/26/2008	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	528873	3610612	1.84
Townsend's big-eared bat	*Corynorhinus townsendii*	20	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	548278	3639251	8.69
Townsend's big-eared bat	*Corynorhinus townsendii*	2	1/1/1992	boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	546921	3638239	8.75
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/1996	Miner K;Stokes D;Kisner A	SexM	USFS, cnf_tes_pts	NO	N/A	N/A	548552	3637627	7.79
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/1996	Stokes D.; Remington S.	SexM	USFS, cnf_tes_pts	NO	N/A	N/A	547025	3638263	8.72
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/2002	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	548392	3621462	0.41
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/2002	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	553304	3637590	6.29
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/2002	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	550684	3636411	6.38
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/2002	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	544502	3638848	8.73

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Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/2003	USGS Bat Survey	see USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	542408	3634353	6.14
Townsend's big-eared bat	*Corynorhinus townsendii*	20	10/1/1990	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	548278	3639251	8.69
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/24/1991	D. Pierson/C. Boyd	Site ID = 290 Detect	USFS, wild_obs_pt	NO	N/A	N/A	546964	3638050	8.65
Townsend's big-eared bat	*Corynorhinus townsendii*	2	12/19/1992	boyd(Descanso Atlas)	Site ID = 287 Detect	USFS, wild_obs_pt	NO	N/A	N/A	546921	3638239	8.75
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	532494	3647704	9.96
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/9/1996	Miner K;Stokes D;Kisner A	Site ID = 642 Rock c	USFS, wild_obs_pt	NO	N/A	N/A	548552	3637627	7.79
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/13/1996	Stokes D.; Remington S.	Site ID = 643 Mines	USFS, wild_obs_pt	NO	N/A	N/A	547025	3638263	8.72
Townsend's big-eared bat	*Corynorhinus townsendii*	1	6/19/2002	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	548392	3621462	0.41
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/18/2002	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	544502	3638848	8.73
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/19/2002	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	550684	3636411	6.38
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/22/2002	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	553304	3637590	6.29
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/3/2003	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	542408	3634353	6.14
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/22/2002	Biologist	Foraging/Roosting bats, Agua Dulce Canyon	Stokes, D. C.	NO	N/A	N/A	552058	3637827	6.72
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/22/2002	Biologist	Foraging/Roosting bats, Boulder Springs Pumphouse	Stokes, D. C.	NO	N/A	N/A	552058	3637827	6.72
Townsend's big-eared bat	*Corynorhinus townsendii*	1	6/19/2002	Biologist	Foraging bats, Boulder Oaks Campground	Stokes, D. C.	YES	MS-036	L-2	548273	3621744	0.22
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/15/2002	Biologist	Foraging bats, Boulder Oaks Campground	Stokes, D. C.	YES	MS-036	L-3	548273	3621744	0.22
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/3/2003	Biologist	Roosting bats, Gutay Cabin	Stokes, D. C.	NO	N/A	N/A	542470	3634328	6.17
Townsend's big-eared bat	*Corynorhinus townsendii*	1	1/22/2003	Biologist	Foraging bats, Laguna Ranch	Stokes, D. C.	NO	N/A	N/A	550639	3636404	6.40

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Townsend's big-eared bat	*Corynorhinus townsendii*	1	4/10/2003	Biologist	Foraging bats, Laguna Ranch	Stokes, D. C.	NO	N/A	N/A	550639	3636404	6.40
Townsend's big-eared bat	*Corynorhinus townsendii*	1	5/21/2003	Biologist	Foraging bats, Laguna Ranch	Stokes, D. C.	NO	N/A	N/A	550639	3636404	6.40
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/20/2003	Biologist	Foraging bats, Laguna Ranch	Stokes, D. C.	NO	N/A	N/A	550639	3636404	6.40
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/24/2003	Biologist	Foraging bats, Laguna Ranch	Stokes, D. C.	NO	N/A	N/A	550639	3636404	6.40
Townsend's big-eared bat	*Corynorhinus townsendii*	1	7/18/2002	Biologist	Roosting bats, Lucky Chuck Mine	Stokes, D. C.	NO	N/A	N/A	544534	3638853	8.75
Townsend's big-eared bat	*Corynorhinus townsendii*	1	6/20/2002	Biologist	Roosting bats, Old Highway 80 Bridge	Stokes, D. C.	NO	N/A	N/A	547077	3627971	3.41
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/15/2002	Biologist	Foraging bats, Water of the Woods	Stokes, D. C.	NO	N/A	N/A	549896	3637533	7.24
Townsend's big-eared bat	*Corynorhinus townsendii*	1	8/15/2002	Biologist	Roosting bats, Boiling Springs Pumphouse	Stokes, D. C.	NO	N/A	N/A	549896	3637533	7.24
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-031	L-4	556886	3627996	0.00
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-034	L-5	555009	3624169	0.00
Townsend's big-eared bat	*Corynorhinus townsendii*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-052	L-6	544059	3613416	0.00
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Sombrero Peak	CNDDB	YES	MS-023	M-1	567988	3624457	0.00
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	568153	3615322	0.78
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Jacumba	CNDDB	NO	N/A	N/A	575626	3609146	0.80
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	567659	3615679	1.10
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	566821	3619953	1.37
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Potrero	CNDDB	NO	N/A	N/A	536275	3607572	3.16
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Potrero	CNDDB	NO	N/A	N/A	544311	3606524	3.85
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	561576	3617980	4.09
Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Tecate	CNDDB	NO	N/A	N/A	523712	3609379	4.19

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Tecate tarplant	*Deinandra floribunda*	1	8/11/1989	Biologist	Tierra Del Sol	CNDDB	NO	N/A	N/A	563741	3609247	4.72
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Live Oak Springs	CNDDB	YES	MS-023	M-2	568052	3623445	0.03
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	567824	3621870	0.36
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Jacumba	CNDDB	NO	N/A	N/A	570891	3612718	0.56
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	534623	3611229	1.14
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Jacumba	CNDDB	NO	N/A	N/A	571327	3608291	2.11
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Tecate	CNDDB	NO	N/A	N/A	532914	3609698	2.37
Tecate tarplant	*Deinandra floribunda*	1	12/22/1993	Biologist	Tecate	CNDDB	NO	N/A	N/A	532918	3607219	3.84
Tecate tarplant	*Deinandra floribunda*	1	4/17/2009	RECON Biologists, 2009	potential tecate tar	RECON, Sensitive_sp	YES	MS-012	M-3	571258	3613670	0.02
Tecate tarplant	*Deinandra floribunda*	3	6/11/2009	RECON Biologists, 2009	deiflo?3	RECON, Sensitive_sp	YES	MS-055	M-4	539931	3612865	0.00
Tecate tarplant	*Deinandra floribunda*	30	6/11/2009	RECON Biologists, 2009	deiflo?30	RECON, Sensitive_sp	YES	MS-055	M-5	539934	3612886	0.00
Tecate tarplant	*Deinandra floribunda*	25	6/11/2009	RECON Biologists, 2009	deiflo?25	RECON, Sensitive_sp	YES	MS-055	M-6	539919	3612874	0.00
Tecate tarplant	*Deinandra floribunda*	15	6/11/2009	RECON Biologists, 2009	deiflo?15	RECON, Sensitive_sp	YES	MS-054	M-7	540149	3613032	0.01
Tecate tarplant	*Deinandra floribunda*	15	6/11/2009	RECON Biologists, 2009	deiflo?15	RECON, Sensitive_sp	YES	MS-055	M-8	539916	3612906	0.01
Tecate tarplant	*Deinandra floribunda*	1	6/11/2009	RECON Biologists, 2009	deiflo?1	RECON, Sensitive_sp	YES	MS-055	M-9	539902	3612908	0.02
Tecate tarplant	*Deinandra floribunda*	1	6/12/2009	RECON Biologists, 2009	DEIFLO	RECON, Sensitive_sp	YES	MS-057	M-10	537687	3612946	0.00
Tecate tarplant	*Deinandra floribunda*	300	6/12/2009	RECON Biologists, 2009	DEIFLO300	RECON, Sensitive_sp	YES	MS-057	M-11	537673	3612883	0.04
Tecate tarplant	*Deinandra floribunda*	3	6/12/2009	RECON Biologists, 2009	DEIFLO3	RECON, Sensitive_sp	YES	MS-057	M-12	537596	3612816	0.09
Tecate tarplant	*Deinandra floribunda*	4	6/12/2009	RECON Biologists, 2009	DEIFLO4	RECON, Sensitive_sp	YES	MS-057	M-13	537589	3612815	0.09
Tecate tarplant	*Deinandra floribunda*	2	6/12/2009	RECON Biologists, 2009	DEIFLO2	RECON, Sensitive_sp	YES	MS-057	M-14	537602	3612782	0.11

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Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo dead stalks	RECON, Sensitive_sp	YES	MS-055	M-15	539538	3613013	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo dead stalks	RECON, Sensitive_sp	YES	MS-055	M-16	539541	3613029	0.00
Tecate tarplant	*Deinandra floribunda*	4	6/18/2009	RECON Biologists, 2009	Deiflo 4	RECON, Sensitive_sp	YES	MS-055	M-17	539387	3613029	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-18	539392	3613026	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-19	539401	3613024	0.00
Tecate tarplant	*Deinandra floribunda*	2	6/18/2009	RECON Biologists, 2009	Deiflo 2	RECON, Sensitive_sp	YES	MS-055	M-20	539405	3613023	0.00
Tecate tarplant	*Deinandra floribunda*	4	6/18/2009	RECON Biologists, 2009	Deiflo 4	RECON, Sensitive_sp	YES	MS-055	M-21	539421	3613026	0.00
Tecate tarplant	*Deinandra floribunda*	3	6/18/2009	RECON Biologists, 2009	Deiflo 3	RECON, Sensitive_sp	YES	MS-055	M-22	539424	3613025	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-055	M-23	539430	3613023	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-055	M-24	539451	3613013	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-055	M-25	539198	3613015	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-055	M-26	539209	3613008	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-27	539210	3613006	0.00
Tecate tarplant	*Deinandra floribunda*	15	6/18/2009	RECON Biologists, 2009	Deiflo 15	RECON, Sensitive_sp	YES	MS-055	M-28	538340	3613017	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-055	M-29	538342	3613011	0.00
Tecate tarplant	*Deinandra floribunda*	200	6/18/2009	RECON Biologists, 2009	Deiflo 200+	RECON, Sensitive_sp	YES	MS-055	M-30	538344	3613006	0.00
Tecate tarplant	*Deinandra floribunda*	100	6/18/2009	RECON Biologists, 2009	Deiflo 100s	RECON, Sensitive_sp	YES	MS-055	M-31	538350	3613006	0.00
Tecate tarplant	*Deinandra floribunda*	100	6/18/2009	RECON Biologists, 2009	Deiflo 100s	RECON, Sensitive_sp	YES	MS-055	M-32	538357	3612995	0.00
Tecate tarplant	*Deinandra floribunda*	100	6/18/2009	RECON Biologists, 2009	Deiflo 100s	RECON, Sensitive_sp	YES	MS-055	M-33	538357	3612962	0.00
Tecate tarplant	*Deinandra floribunda*	4	6/18/2009	RECON Biologists, 2009	Deiflo 4	RECON, Sensitive_sp	YES	MS-057	M-34	538070	3613009	0.00

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Tecate tarplant	*Deinandra floribunda*	50	6/18/2009	RECON Biologists, 2009	Deiflo 50	RECON, Sensitive_sp	YES	MS-057	M-35	538071	3612985	0.00
Tecate tarplant	*Deinandra floribunda*	10	6/18/2009	RECON Biologists, 2009	Deiflo 10	RECON, Sensitive_sp	YES	MS-057	M-36	538073	3612976	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-057	M-37	537697	3612962	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-057	M-38	537696	3612969	0.00
Tecate tarplant	*Deinandra floribunda*	2	6/18/2009	RECON Biologists, 2009	Diflo 2	RECON, Sensitive_sp	YES	MS-055	M-39	539383	3613032	0.00
Tecate tarplant	*Deinandra floribunda*	6	6/18/2009	RECON Biologists, 2009	Deiflo 6	RECON, Sensitive_sp	YES	MS-057	M-40	538082	3612955	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo stalks	RECON, Sensitive_sp	YES	MS-057	M-41	537691	3612951	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo dead stalks	RECON, Sensitive_sp	YES	MS-055	M-42	539541	3612967	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-43	538342	3613027	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-44	539072	3613036	0.01
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-45	538345	3613036	0.01
Tecate tarplant	*Deinandra floribunda*	1	6/18/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-055	M-46	538343	3613041	0.01
Tecate tarplant	*Deinandra floribunda*	5	6/18/2009	RECON Biologists, 2009	deiflo-5plnts	RECON, Sensitive_sp	YES	MS-057	M-47	537545	3612806	0.09
Tecate tarplant	*Deinandra floribunda*	9	6/18/2009	RECON Biologists, 2009	deiflo-9plnts	RECON, Sensitive_sp	YES	MS-057	M-48	537554	3612799	0.10
Tecate tarplant	*Deinandra floribunda*	100	6/18/2009	RECON Biologists, 2009	deiflo-100plnts arou	RECON, Sensitive_sp	YES	MS-057	M-49	537631	3612765	0.12
Tecate tarplant	*Deinandra floribunda*	150	6/25/2009	RECON Biologists, 2009	deiflo-150pl	RECON, Sensitive_sp	YES	MS-059	M-50	534781	3613401	0.00
Tecate tarplant	*Deinandra floribunda*	25	6/25/2009	RECON Biologists, 2009	deiflo-25pl	RECON, Sensitive_sp	YES	MS-059	M-51	534826	3613478	0.01
Tecate tarplant	*Deinandra floribunda*	50	6/25/2009	RECON Biologists, 2009	Deiflo 50	RECON, Sensitive_sp	YES	MS-058	M-52	535013	3613529	0.02
Tecate tarplant	*Deinandra floribunda*	1	6/25/2009	RECON Biologists, 2009	Deiflo 1	RECON, Sensitive_sp	YES	MS-058	M-53	534991	3613515	0.03
Tecate tarplant	*Deinandra floribunda*	8	6/25/2009	RECON Biologists, 2009	Deiflo 8	RECON, Sensitive_sp	YES	MS-058	M-54	534986	3613514	0.03

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Tecate tarplant	*Deinandra floribunda*	150	6/25/2009	RECON Biologists, 2009	deiflo-150pl	RECON, Sensitive_sp	YES	MS-058	M-55	536495	3613146	0.04
Tecate tarplant	*Deinandra floribunda*	20	6/25/2009	RECON Biologists, 2009	deiflo-20pl	RECON, Sensitive_sp	YES	MS-058	M-56	536452	3613152	0.04
Tecate tarplant	*Deinandra floribunda*	2	6/26/2009	RECON Biologists, 2009	deiflo2	RECON, Sensitive_sp	YES	MS-059	M-57	534337	3613458	0.00
Tecate tarplant	*Deinandra floribunda*	3	6/26/2009	RECON Biologists, 2009	deiflo3	RECON, Sensitive_sp	YES	MS-059	M-58	534313	3613463	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/26/2009	RECON Biologists, 2009	deiflo1	RECON, Sensitive_sp	YES	MS-059	M-59	533887	3613596	0.00
Tecate tarplant	*Deinandra floribunda*	300	6/26/2009	RECON Biologists, 2009	deiflo300	RECON, Sensitive_sp	YES	MS-059	M-60	533776	3613512	0.00
Tecate tarplant	*Deinandra floribunda*	50	6/26/2009	RECON Biologists, 2009	deiflo50	RECON, Sensitive_sp	YES	MS-059	M-61	534310	3613472	0.00
Tecate tarplant	*Deinandra floribunda*	75	6/26/2009	RECON Biologists, 2009	DEIFLO75	RECON, Sensitive_sp	YES	MS-059	M-62	534640	3613424	0.00
Tecate tarplant	*Deinandra floribunda*	6	6/26/2009	RECON Biologists, 2009	deiflo6	RECON, Sensitive_sp	YES	MS-059	M-63	533753	3613678	0.00
Tecate tarplant	*Deinandra floribunda*	30	6/26/2009	RECON Biologists, 2009	deiflo30	RECON, Sensitive_sp	YES	MS-059	M-64	534332	3613425	0.00
Tecate tarplant	*Deinandra floribunda*	1	6/26/2009	RECON Biologists, 2009	deiflo1	RECON, Sensitive_sp	YES	MS-059	M-65	534619	3613576	0.05
Tecate tarplant	*Deinandra floribunda*	5	8/18/2009	RECON Biologists, 2009	deiflo-5pl	RECON, Sensitive_sp	YES	MS-012	M-66	571285	3613600	0.00
Tecate tarplant	*Deinandra floribunda*	2	8/18/2009	RECON Biologists, 2009	deiflo2	RECON, Sensitive_sp	YES	MS-012	M-67	571307	3613589	0.00
Tecate tarplant	*Deinandra floribunda*	4	8/18/2009	RECON Biologists, 2009	deiflo4	RECON, Sensitive_sp	YES	MS-012	M-68	571323	3613576	0.00
Tecate tarplant	*Deinandra floribunda*	7	8/18/2009	RECON Biologists, 2009	deiflo7	RECON, Sensitive_sp	YES	MS-012	M-69	571342	3613572	0.00
Tecate tarplant	*Deinandra floribunda*	100	8/18/2009	RECON Biologists, 2009	deiflo100	RECON, Sensitive_sp	YES	MS-012	M-70	571317	3613586	0.00
Tecate tarplant	*Deinandra floribunda*	15	8/18/2009	RECON Biologists, 2009	deiflo-15pl	RECON, Sensitive_sp	YES	MS-012	M-71	571282	3613614	0.00
Tecate tarplant	*Deinandra floribunda*	200	8/18/2009	RECON Biologists, 2009	deiflo200	RECON, Sensitive_sp	YES	MS-012	M-72	571263	3613579	0.00
Tecate tarplant	*Deinandra floribunda*	50	8/18/2009	RECON Biologists, 2009	deiflo-50pl	RECON, Sensitive_sp	YES	MS-012	M-73	571274	3613639	0.01
Tecate tarplant	*Deinandra floribunda*	30	8/18/2009	RECON Biologists, 2009	deiflo-30pl	RECON, Sensitive_sp	YES	MS-012	M-74	571331	3613612	0.01

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Tecate tarplant	*Deinandra floribunda*	150	8/18/2009	RECON Biologists, 2009	deiflo-150pl	RECON, Sensitive_sp	YES	MS-012	M-75	571232	3613771	0.06
Tecate tarplant	*Deinandra floribunda*	350	5/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	YES	MS-054	M-76	540511	3613559	0.06
Tecate tarplant	*Deinandra floribunda*	200	5/14/2008	ARCADIS	no flower	ARCADIS, RarePlant_2008_poly	YES	MS-059	M-77	533999	3612913	0.34
Tecate tarplant	*Deinandra floribunda*	250	6/18/2008	ARCADIS	shawn recheck	ARCADIS, RarePlant_2008_poly	YES	MS-023	M-78	568025	3623227	0.00
Tecate tarplant	*Deinandra floribunda*	20	5/14/2008	ARCADIS	not in flower	ARCADIS, RarePlant_2008_pt	YES	MS-058	M-79	535006	3613524	0.02
Tecate tarplant	*Deinandra floribunda*	20	5/14/2008	ARCADIS	no flowers	ARCADIS, RarePlant_2008_pt	YES	MS-059	M-80	534081	3613009	0.27
Tecate tarplant	*Deinandra floribunda*	30	5/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-059	M-81	533632	3612909	0.35
Tecate tarplant	*Deinandra floribunda*	10	5/14/2008	ARCADIS	no flower	ARCADIS, RarePlant_2008_pt	YES	MS-059	M-82	533658	3612905	0.35
Tecate tarplant	*Deinandra floribunda*	10	5/14/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-061	M-83	532904	3613133	0.24
Tecate tarplant	*Deinandra floribunda*	500	5/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-84	540271	3613434	0.04
Tecate tarplant	*Deinandra floribunda*	200	5/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-85	540253	3613457	0.06
Tecate tarplant	*Deinandra floribunda*	5	5/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-86	540275	3613476	0.06
Tecate tarplant	*Deinandra floribunda*	50	5/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-87	540791	3613442	0.00
Tecate tarplant	*Deinandra floribunda*	50	5/28/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-88	540517	3613391	0.01

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Tecate tarplant	*Deinandra floribunda*	20	5/28/2008	ARCADIS	no flower	ARCADIS, RarePlant_2008_pt	YES	MS-052	M-89	544537	3613471	0.00
Tecate tarplant	*Deinandra floribunda*	350	6/18/2008	ARCADIS	not in flower; needs confirmation	ARCADIS, RarePlant_2008_pt	YES	MS-024	M-90	567962	3624493	0.01
Tecate tarplant	*Deinandra floribunda*	35	7/15/2008	Jones & Stokes	N/A	Jones & Stokes, RarePlant_2008_pt	YES	MS-059	M-91	533616	3612933	0.34
Tecate tarplant	*Deinandra floribunda*	25	7/16/2008	Jones & Stokes	N/A	Jones & Stokes, RarePlant_2008_pt	YES	MS-057	M-92	538071	3613006	0.00
Tecate tarplant	*Deinandra floribunda*	3	7/16/2008	Jones & Stokes	N/A	Jones & Stokes, RarePlant_2008_pt	YES	MS-055	M-93	538707	3613071	0.03
Tecate tarplant	*Deinandra floribunda*	35	7/16/2008	Jones & Stokes	N/A	Jones & Stokes, RarePlant_2008_pt	YES	MS-053	M-94	541789	3613764	0.18
Tecate tarplant	*Deinandra floribunda*	25	7/15/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-059	M-95	534620	3613579	0.05
Tecate tarplant	*Deinandra floribunda*	200	7/15/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-059	M-96	533790	3613098	0.23
Tecate tarplant	*Deinandra floribunda*	50	7/15/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-061	M-97	532955	3613084	0.27
Tecate tarplant	*Deinandra floribunda*	100	7/15/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-061	M-98	532898	3613135	0.24
Tecate tarplant	*Deinandra floribunda*	25	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-057	M-99	537700	3612968	0.00
Tecate tarplant	*Deinandra floribunda*	20	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-100	538346	3613035	0.01
Tecate tarplant	*Deinandra floribunda*	3	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-101	539062	3612982	0.00

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Tecate tarplant	*Deinandra floribunda*	10	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-102	539374	3613048	0.01
Tecate tarplant	*Deinandra floribunda*	10	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-103	539377	3613048	0.01
Tecate tarplant	*Deinandra floribunda*	30	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-104	539630	3613016	0.00
Tecate tarplant	*Deinandra floribunda*	25	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-105	540275	3613351	0.01
Tecate tarplant	*Deinandra floribunda*	3	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-106	540292	3613427	0.03
Tecate tarplant	*Deinandra floribunda*	20	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-107	540537	3613473	0.00
Tecate tarplant	*Deinandra floribunda*	1000	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-108	539534	3613265	0.14
Tecate tarplant	*Deinandra floribunda*	20	7/16/2008	ARCADIS	polypt	ARCADIS, RarePlant_2008_pt	YES	MS-055	M-109	539653	3613408	0.23
Tecate tarplant	*Deinandra floribunda*	100	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	540985	3614286	0.51
Tecate tarplant	*Deinandra floribunda*	30	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-110	541720	3613644	0.11
Tecate tarplant	*Deinandra floribunda*	1	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-053	M-111	542330	3613143	0.17
Tecate tarplant	*Deinandra floribunda*	2	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-053	M-112	542387	3613021	0.24
Tecate tarplant	*Deinandra floribunda*	50	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-053	M-113	542456	3612814	0.36

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Tecate tarplant	*Deinandra floribunda*	5	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-114	541725	3613163	0.00
Tecate tarplant	*Deinandra floribunda*	30	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-115	541720	3613194	0.00
Tecate tarplant	*Deinandra floribunda*	30	7/16/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-054	M-116	541632	3613329	0.05
San Diego ring-necked snake	*Diadophis punctatus similis*	1	4/1/2004	Biologist	Del Mar	CNDDB	NO	N/A	N/A	485263	3637877	7.78
San Diego ring-necked snake	*Diadophis punctatus similis*	1	3/1/2005	Biologist	Del Mar	CNDDB	NO	N/A	N/A	487967	3649748	6.93
San Diego ring-necked snake	*Diadophis punctatus similis*	1	8/4/2008	Biologist	San Vicente Reservoi	CNDDB	YES	MS-103	N-1	509094	3639416	0.42
Vanishing buckwheat	*Eriogonum enanidum*	1	2/13/2004	Biologist	Alpine	CNDDB	YES	MS-087	O-1	521773	3633475	0.23
Vanishing buckwheat	*Eriogonum enanidum*	1	2/13/2004	Biologist	Descanso	CNDDB	NO	N/A	N/A	543975	3632567	6.71
Mission Canyon bluecup	*Githopsis diffusa ssp. filicaulis*	1	10/30/1995	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	515190	3642864	1.86
Mission Canyon bluecup	*Githopsis diffusa ssp. filicaulis*	1	10/17/1997	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	511500	3642289	1.76
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1985	f.kruegart(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	550077	3638250	7.54
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1987	gabbart(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	549707	3637458	7.27
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	542974	3616616	1.93
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	547088	3629446	4.31
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1991	a.knank(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	530521	3616868	1.09
Bald eagle	*Haliaeetus leucocephalus*	2	1/1/1991	hormans(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	533227	3616358	1.61
Bald eagle	*Haliaeetus leucocephalus*	2	1/1/1991	b.cranshaw(Descanso Atlas)	adults	USFS, cnf_tes_pts	NO	N/A	N/A	541538	3629192	5.07
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1992	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	544510	3617974	2.68
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1992	volgarino(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	539800	3626215	4.66

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Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1994	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	530931	3616117	1.33
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1994	C.Boyd/R.Botta (Descanso Atlas)	juvenile	USFS, cnf_tes_pts	NO	N/A	N/A	544361	3619746	2.68
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1995	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	539621	3625963	4.65
Bald eagle	*Haliaeetus leucocephalus*	1	2/1/1985	f.kruegart(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550077	3638250	7.54
Bald eagle	*Haliaeetus leucocephalus*	1	11/1/1987	gabbart(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	549707	3637458	7.27
Bald eagle	*Haliaeetus leucocephalus*	1	2/5/1990	(Descanso Atlas)	Note indicates age u	USFS, wild_obs_pt	NO	N/A	N/A	542974	3616616	1.93
Bald eagle	*Haliaeetus leucocephalus*	1	12/14/1990	(Descanso Atlas)	Site ID = 370 Detect	USFS, wild_obs_pt	NO	N/A	N/A	547088	3629446	4.31
Bald eagle	*Haliaeetus leucocephalus*	1	1/14/1991	a.knank(Descanso Atlas)	Note indicates adult	USFS, wild_obs_pt	NO	N/A	N/A	530521	3616868	1.09
Bald eagle	*Haliaeetus leucocephalus*	2	1/31/1991	b.cranshaw(Descanso Atlas)	Site ID = 595 adults	USFS, wild_obs_pt	NO	N/A	N/A	541538	3629192	5.07
Bald eagle	*Haliaeetus leucocephalus*	2	2/10/1991	hormans(Descanso Atlas)	Site ID = 483 Detect	USFS, wild_obs_pt	NO	N/A	N/A	533227	3616358	1.61
Bald eagle	*Haliaeetus leucocephalus*	1	1/31/1992	volgarino(Descanso Atlas)	Site ID = 609 adult	USFS, wild_obs_pt	NO	N/A	N/A	539800	3626215	4.66
Bald eagle	*Haliaeetus leucocephalus*	1	2/7/1992	(Descanso Atlas)	Note indicates age u	USFS, wild_obs_pt	NO	N/A	N/A	544510	3617974	2.68
Bald eagle	*Haliaeetus leucocephalus*	2	1/1/1994	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	543784	3616716	1.98
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1994	C.Boyd/R.Botta (Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	544361	3619746	2.68
Bald eagle	*Haliaeetus leucocephalus*	1	3/10/1994	(Descanso Atlas)	Note indicates age u	USFS, wild_obs_pt	NO	N/A	N/A	530931	3616117	1.33
Bald eagle	*Haliaeetus leucocephalus*	1	2/2/1995	(Descanso Atlas)	Site ID = 610 Detect	USFS, wild_obs_pt	NO	N/A	N/A	539621	3625963	4.65
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	538403	3625911	4.07
Bald eagle	*Haliaeetus leucocephalus*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	539577	3626672	4.40
Ramona horkelia	*Horkelia truncata*	1	5/21/1936	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	517724	3642711	2.18
Ramona horkelia	*Horkelia truncata*	1	5/1/1938	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	525663	3636085	1.89
Ramona horkelia	*Horkelia truncata*	1	5/8/1938	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	525449	3626910	0.50

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Ramona horkelia	*Horkelia truncata*	1	5/8/1938	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	526069	3621000	1.12
Ramona horkelia	*Horkelia truncata*	1	5/5/1986	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	531301	3646521	8.97
Ramona horkelia	*Horkelia truncata*	1	5/5/1986	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	531460	3646504	9.01
Ramona horkelia	*Horkelia truncata*	1	5/5/1986	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	531952	3646430	9.04
Ramona horkelia	*Horkelia truncata*	1	5/5/1986	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	531011	3646372	8.82
Ramona horkelia	*Horkelia truncata*	1	5/5/1986	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	533781	3644045	8.26
Ramona horkelia	*Horkelia truncata*	1	8/7/1987	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	532373	3633606	1.79
Ramona horkelia	*Horkelia truncata*	1	8/11/1989	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	525452	3626423	0.65
Ramona horkelia	*Horkelia truncata*	1	4/14/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518329	3642835	2.55
Ramona horkelia	*Horkelia truncata*	1	4/14/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518349	3642764	2.52
Ramona horkelia	*Horkelia truncata*	1	3/11/1994	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	516601	3641864	1.45
Ramona horkelia	*Horkelia truncata*	1	3/11/1994	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	517128	3642197	1.75
Ramona horkelia	*Horkelia truncata*	1	6/8/2001	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	524585	3619000	1.55
Ramona horkelia	*Horkelia truncata*	530	6/13/2001	Biologist	N/A	USFS TESPeos4	YES	MS-072	Q-7	527259	3622421	0.00
Ramona horkelia	*Horkelia truncata*	1	6/13/2001	Biologist	N/A	USFS TESPeos4	YES	MS-072	Q-8	527474	3621884	0.22
Ramona horkelia	*Horkelia truncata*	50	7/27/2001	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	526670	3620838	0.74
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Barrett Lake	CNDDB	YES	MS-072	Q-1	527360	3622457	0.13
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526676	3620836	0.75
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	516652	3642001	1.58
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	532365	3633584	1.81
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518345	3642821	2.57
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	513598	3644548	2.84
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518832	3643923	3.31
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Dulzura	CNDDB	NO	N/A	N/A	513757	3623246	7.30
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	533799	3644063	8.34
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Tule Springs	CNDDB	NO	N/A	N/A	531520	3646515	9.05
Ramona horkelia	*Horkelia truncata*	1	4/10/2002	Biologist	Ramona	CNDDB	NO	N/A	N/A	513308	3656633	9.42
Ramona horkelia	*Horkelia truncata*	1	4/15/2002	Biologist	Alpine	CNDDB	NO	N/A	N/A	512534	3635004	1.64
Ramona horkelia	*Horkelia truncata*	1	4/17/2002	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	503060	3651953	4.41
Ramona horkelia	*Horkelia truncata*	1	11/7/2005	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	526161	3634809	1.18
Ramona horkelia	*Horkelia truncata*	1	11/7/2005	Biologist	Alpine	CNDDB	NO	N/A	N/A	515515	3632947	1.79
Ramona horkelia	*Horkelia truncata*	1	11/7/2005	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	505881	3647920	2.32
Ramona horkelia	*Horkelia truncata*	1	11/7/2005	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	519224	3642957	2.86
Ramona horkelia	*Horkelia truncata*	1	5/5/2007	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	524558	3636403	2.41
Ramona horkelia	*Horkelia truncata*	1000	5/9/2008	ARCADIS	from point	ARCADIS, RarePlant_2008_poly	NO	N/A		533203	3644946	8.62
Ramona horkelia	*Horkelia truncata*	11	4/23/2008	ARCADIS	just off rd	ARCADIS, RarePlant_2008_pt	YES	MS-072	Q-2	527942	3622806	0.25

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Ramona horkelia	*Horkelia truncata*	8	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-072	Q-3	527933	3622795	0.24
Ramona horkelia	*Horkelia truncata*	1	4/23/2008	ARCADIS	on edge of rd	ARCADIS, RarePlant_2008_pt	YES	MS-072	Q-4	527885	3622722	0.19
Ramona horkelia	*Horkelia truncata*	7	4/23/2008	ARCADIS	rd edge	ARCADIS, RarePlant_2008_pt	YES	MS-072	Q-5	528052	3622788	0.30
Ramona horkelia	*Horkelia truncata*	15	4/23/2008	ARCADIS	off trail from carveacre to fs rd.	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	528454	3623023	0.59
Ramona horkelia	*Horkelia truncata*	3	6/19/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-072	Q-6	527900	3622754	0.21
Ramona horkelia	*Horkelia truncata*	1	7/7/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532956	3645510	8.85
Ramona horkelia	*Horkelia truncata*	11	7/8/2008	ARCADIS	boulder field	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532586	3644246	8.05
Ramona horkelia	*Horkelia truncata*	10	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532837	3644490	8.26
Ramona horkelia	*Horkelia truncata*	5	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532620	3644485	8.19
Ramona horkelia	*Horkelia truncata*	80	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532624	3644464	8.18
Ramona horkelia	*Horkelia truncata*	2	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532582	3644250	8.05
Ramona horkelia	*Horkelia truncata*	15	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532581	3644262	8.06
Ramona horkelia	*Horkelia truncata*	50	5/9/2008	Jones & Stokes	N/A	Jones & Stokes, RarePlant_2008_pt	NO	N/A	N/A	532473	3644647	8.24

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Ramona horkelia	*Horkelia truncata*	4	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532794	3645172	8.62
Ramona horkelia	*Horkelia truncata*	5	5/9/2008	ARCADIS	ARCADIS field work with Jones & Stokes	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	532940	3645183	8.67
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	8/10/1989	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	540817	3644448	9.97
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	6/16/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	552577	3630646	2.94
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	12/6/1995	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	540817	3644448	9.97
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	10/28/2005	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	552577	3630646	2.94
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1981	e.abbot(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	552487	3638820	7.19
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1982	ronillard(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	554932	3636555	5.38
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1982	b.gabbart(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553444	3638270	6.66
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1982	reilly(Descanso Atlas)	observed during butt	USFS, cnf_tes_pts	NO	N/A	N/A	551021	3640818	8.68
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1989	d.dappa(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	552968	3638486	6.89
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	542172	3632991	5.70
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	2	1/1/1993	hirshberg(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	550147	3641122	9.08

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San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1995	w.heath(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	554281	3635408	4.81
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1995	suitor(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553200	3636874	5.90
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	550962	3637798	7.02
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Site identified in B	USFS, cnf_tes_pts	NO	N/A	N/A	550656	3638093	7.27
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/2003	D. Wood, D. Stokes	SDNHM photo voucher	USFS, cnf_tes_pts	NO	N/A	N/A	552174	3635691	5.51
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	4/23/1981	e.abbot(Descanso Atlas)	Site ID = 307 Detect	USFS, wild_obs_pt	NO	N/A	N/A	552487	3638820	7.19
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1982	shue(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	551562	3639263	7.66
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	5/23/1982	ronillard(Descanso Atlas)	Site ID = 350 Detect	USFS, wild_obs_pt	NO	N/A	N/A	554932	3636555	5.38
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	7/5/1982	reilly(Descanso Atlas)	Site ID = 277 observ	USFS, wild_obs_pt	NO	N/A	N/A	551021	3640818	8.68
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	8/1/1982	b.gabbart(Descanso Atlas)	Site ID = 309 Detect	USFS, wild_obs_pt	NO	N/A	N/A	553444	3638270	6.66
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	6/1/1983	d.desonia(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	553368	3638189	6.63
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	5/1/1989	d.dappa(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	552968	3638486	6.89
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	7/1/1990	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	542172	3632991	5.70

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San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	2	5/1/1993	hirshberg(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550147	3641122	9.08
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	6/10/1995	w.heath(Descanso Atlas)	Site ID = 352 Detect	USFS, wild_obs_pt	NO	N/A	N/A	554281	3635408	4.81
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	7/9/1995	suitor(Descanso Atlas)	Site ID = 342 Detect	USFS, wild_obs_pt	NO	N/A	N/A	553200	3636874	5.90
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550930	3637690	6.97
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550962	3637798	7.02
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	551004	3637890	7.05
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550081	3637599	7.20
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550197	3637690	7.21
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550467	3637897	7.23
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550840	3638141	7.24
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550774	3638136	7.26
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550232	3637811	7.26
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550656	3638093	7.27

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San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550254	3638604	7.67
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550159	3638686	7.75
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	1	5/9/2003	D. Wood, D. Stokes	Locational accuracy	USFS, wild_obs_pt	NO	N/A	N/A	552174	3635691	5.51
Western red bat	*Lasiurus blossevillii*	1	4/19/2007	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	550272	3638253	7.48
Western red bat	*Lasiurus blossevillii*	1	9/4/2008	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	540533	3615046	0.98
Western red bat	*Lasiurus blossevillii*	1	11/5/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	516634	3615705	6.68
Western red bat	*Lasiurus blossevillii*	1	11/10/2008	Biologist	Dulzura	CNDDB	NO	N/A	N/A	515313	3614243	7.54
Western red bat	*Lasiurus blossevillii*	1	11/13/2008	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	522208	3603577	7.55
Western red bat	*Lasiurus blossevillii*	1	11/18/2008	Biologist	Del Mar	CNDDB	NO	N/A	N/A	483513	3643250	8.41
Western red bat	*Lasiurus blossevillii*	1	11/19/2008	Biologist	Descanso	CNDDB	NO	N/A	N/A	542492	3632904	5.87
Western red bat	*Lasiurus blossevillii*	1	12/23/2008	Biologist	La Mesa	CNDDB	NO	N/A	N/A	493949	3631440	6.91
Western red bat	*Lasiurus blossevillii*	1	12/26/2008	Biologist	Alpine	CNDDB	NO	N/A	N/A	518885	3625896	4.73
Western red bat	*Lasiurus blossevillii*	1	12/29/2008	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	505856	3650975	4.04
Western red bat	*Lasiurus blossevillii*	1	1/1/1996	Miner K.; Stokes D.	SexM	USFS, cnf_tes_pts	NO	N/A	N/A	550116	3637496	7.14
Western red bat	*Lasiurus blossevillii*	1	1/1/2002	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	540509	3615065	0.99
Western red bat	*Lasiurus blossevillii*	1	1/1/2002	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	552595	3637925	6.64
Western red bat	*Lasiurus blossevillii*	1	1/1/2003	USGS Bat Survey	See USGS Bat Invento	USFS, cnf_tes_pts	NO	N/A	N/A	542430	3632908	5.84
Western red bat	*Lasiurus blossevillii*	1	7/31/1996	Miner K.; Stokes D.	Site ID = 634 Water	USFS, wild_obs_pt	NO	N/A	N/A	550116	3637496	7.14
Western red bat	*Lasiurus blossevillii*	1	8/22/2002	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	552595	3637925	6.64

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Western red bat	*Lasiurus blossevillii*	1	9/19/2002	USGS Bat Survey	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	540509	3615065	0.99
Western red bat	*Lasiurus blossevillii*	1	10/8/2003	USGS Bat Survey	Note indicates adult	USFS, wild_obs_pt	NO	N/A	N/A	542430	3632908	5.84
Western red bat	*Lasiurus blossevillii*	1	8/22/2002	Biologist	Foraging/Roosting bats, Agua Dulce Canyon	Stokes, D. C.	NO	N/A	N/A	552058	3637827	6.72
Western red bat	*Lasiurus blossevillii*	1	9/19/2002	Biologist	Foraging bats, Hauser Canyon	Stokes, D. C.	NO	N/A	N/A	540545	3615067	0.99
Western red bat	*Lasiurus blossevillii*	1	8/19/2003	Biologist	Foraging bats, Upper Pine Creek	Stokes, D. C.	NO	N/A	N/A	542449	3632872	5.84
Western red bat	*Lasiurus blossevillii*	1	10/8/2003	Biologist	Foraging bats, Upper Pine Creek	Stokes, D. C.	NO	N/A	N/A	542449	3632872	5.84
Western red bat	*Lasiurus blossevillii*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-038	Z-1	553300	3620693	0.00
Western red bat	*Lasiurus blossevillii*	1	9/2/2009	D. Stokes	N/A	D. Stokes, 2009	YES	MS-052	Z-2	544059	3613416	0.00
Western red bat	*Lasiurus blossevillii*	1	8/1/2001	Drew Stokes	N/A	SDSU Foundation bird survey, mcas miramar 2001	NO	N/A	N/A	496526	3633646	5.27
Heart-leaved pitcher sage	*Lepechinia cardiophylla*	1	8/11/1989	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	505575	3649263	2.98
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-096	R-1	515632	3639538	0.01

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Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	4/5/2009	Chris Elkins	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-045	R-2	550572	3617819	0.01
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-008	R-3	574312	3610261	0.58
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-023	R-4	567863	3623629	0.01
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-096	R-5	515636	3639556	0.00

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Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	12/11/2000	Biologist	Escondido	CNDDB	NO	N/A	N/A	498744	3656687	7.46
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	4/1/2004	Biologist	Poway	CNDDB	NO	N/A	N/A	495866	3641469	0.84
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	5/19/2004	Biologist	Alpine	CNDDB	NO	N/A	N/A	513625	3635055	2.17
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	5/19/2004	Biologist	Ramona	CNDDB	NO	N/A	N/A	512397	3655914	8.71
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	5/20/2004	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	530601	3615132	0.94
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	5/20/2004	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	565035	3614793	2.65
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	5/20/2004	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	502565	3649914	3.16
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	545305	3637027	8.51
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	1/1/2003	D. Stokes	SDNHM specimen, DAW2	USFS, cnf_tes_pts	NO	N/A	N/A	516860	3621698	6.46
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	6/1/1990	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	545305	3637027	8.51
Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	4/7/2003	D. Stokes	Locational accuracy	USFS, wild_obs_pt	NO	N/A	N/A	516860	3621698	6.46

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Coastal rosy boa	*Lichanura trivirgata roseofusca*	1	5/21/2009	Chris Bugbee	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group	YES	MS-042	R-6	551662	3618756	0.05
Laguna linanthus	*Linanthus orcuttii*	1	5/22/1979	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	550302	3642767	9.93
Laguna linanthus	*Linanthus orcuttii*	1	5/22/1979	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	554269	3638865	6.83
Laguna linanthus	*Linanthus orcuttii*	1	5/22/1987	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	552186	3639422	7.42
Laguna linanthus	*Linanthus orcuttii*	1	8/11/1989	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	540989	3639179	7.29
Laguna linanthus	*Linanthus orcuttii*	1	5/22/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	551930	3639494	7.68
Laguna linanthus	*Linanthus orcuttii*	1	5/31/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553417	3638415	6.73
Laguna linanthus	*Linanthus orcuttii*	1	5/31/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553511	3638364	6.69
Laguna linanthus	*Linanthus orcuttii*	1	5/31/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553338	3638329	6.69
Laguna linanthus	*Linanthus orcuttii*	1	5/31/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553421	3638304	6.67
Laguna linanthus	*Linanthus orcuttii*	1	7/2/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553419	3639045	7.10
Laguna linanthus	*Linanthus orcuttii*	1	7/2/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553262	3638913	7.06
Laguna linanthus	*Linanthus orcuttii*	1	7/2/1990	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	553169	3638823	7.01
Laguna linanthus	*Linanthus orcuttii*	1	5/13/1992	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	550801	3640726	8.67
Laguna linanthus	*Linanthus orcuttii*	1	5/13/1992	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	550868	3640625	8.57
Laguna linanthus	*Linanthus orcuttii*	1	5/7/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	550126	3642568	9.89
Laguna linanthus	*Linanthus orcuttii*	1	5/7/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	550026	3642533	9.89
Laguna linanthus	*Linanthus orcuttii*	1	5/7/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	550227	3642391	9.76
Laguna linanthus	*Linanthus orcuttii*	1	5/7/1993	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	549916	3642134	9.69
Laguna linanthus	*Linanthus orcuttii*	1	5/15/1998	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	554324	3638679	6.75
Laguna linanthus	*Linanthus orcuttii*	1	5/15/1998	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	553292	3638698	6.94
Laguna linanthus	*Linanthus orcuttii*	1	5/15/1998	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	551944	3639482	7.69
Laguna linanthus	*Linanthus orcuttii*	1	5/15/1998	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	550839	3640653	8.63
Laguna linanthus	*Linanthus orcuttii*	1	10/26/1998	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	538117	3642537	8.20
Laguna linanthus	*Linanthus orcuttii*	1	8/16/2002	Biologist	Descanso	CNDDB	NO	N/A	N/A	539022	3625164	4.67
California leaf-nosed bat	*Macrotus californicus*	1	3/7/2007	Biologist	Sweeney Pass	CNDDB	NO	N/A	N/A	572068	3635866	7.32
California leaf-nosed bat	*Macrotus californicus*	1	9/4/2008	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	528794	3610707	1.79
California leaf-nosed bat	*Macrotus californicus*	1	9/23/2008	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	522208	3603577	7.55

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California leaf-nosed bat	*Macrotus californicus*	1	8/15/2002	Biologist	Cottonwood Creek south of Barrett Reservoir	Stokes, D. C.	NO	N/A	N/A	549896	3637533	7.24
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	3/16/2009	Eric Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-082	S-1	528582	3630514	0.04
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	8/11/1989	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525880	3620172	1.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	8/11/1989	Biologist	Tecate	CNDDB	NO	N/A	N/A	532914	3609698	2.37
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	8/11/1989	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	505939	3652308	4.85
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	8/11/1989	Biologist	Tecate	CNDDB	NO	N/A	N/A	529197	3604713	5.50
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	8/11/1989	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	514465	3606190	9.87
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	1/4/1995	Biologist	Alpine	CNDDB	NO	N/A	N/A	512976	3623860	7.17
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/15/2002	Biologist	Alpine	CNDDB	YES	MS-087	S-2	521773	3633475	0.23
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/15/2002	Biologist	Alpine	CNDDB	NO	N/A	N/A	517829	3624167	5.57
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Barrett Lake	CNDDB	YES	MS-072	S-3	527537	3621828	0.23

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Viejas Mountain	CNDDB	YES	MS-085	S-4	525187	3633608	0.48
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Barrett Lake	CNDDB	YES	MS-067	S-5	527197	3616600	0.68
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	525444	3625913	0.74
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526559	3620678	0.82
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526296	3616707	1.04
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	524183	3635211	1.45
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	504490	3647047	1.46
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525290	3617395	1.48
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	516652	3642001	1.58
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	532672	3634547	2.43
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518345	3642821	2.57
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	513598	3644548	2.84
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518832	3643923	3.31

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/16/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	531728	3636890	3.81
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/17/2002	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	503060	3651953	4.41
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/18/2002	Biologist	Dulzura	CNDDB	NO	N/A	N/A	521841	3618577	3.30
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	7/28/2005	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	525401	3635374	1.56
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	2/1/2006	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	519224	3642957	2.86
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	80	7/6/2009	RECON Biologists, 2009	monhyplan80	RECON, Sensitive_sp	YES	MS-066	S-6	527212	3616439	0.61
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	7/6/2009	RECON Biologists, 2009	monhyplan25	RECON, Sensitive_sp	YES	MS-066	S-7	527194	3616455	0.62
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	7/6/2009	RECON Biologists, 2009	FMR0706 Mohyla	RECON, Sensitive_sp	YES	MS-066	S-8	527181	3616450	0.62
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	7/6/2009	RECON Biologists, 2009	FMR0706 Mohyla	RECON, Sensitive_sp	YES	MS-066	S-9	527127	3616425	0.62
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	7/6/2009	RECON Biologists, 2009	monhyolan5	RECON, Sensitive_sp	NO	N/A	N/A	527156	3616512	0.66
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	40	7/6/2009	RECON Biologists, 2009	monhyplan40	RECON, Sensitive_sp	NO	N/A	N/A	527153	3616516	0.67
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	7/6/2009	RECON Biologists, 2009	monhyplan1	RECON, Sensitive_sp	NO	N/A	N/A	527070	3616601	0.74
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	2	7/6/2009	RECON Biologists, 2009	FMR0706 Mohyla	RECON, Sensitive_sp	NO	N/A	N/A	527068	3616602	0.74

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	15	7/6/2009	RECON Biologists, 2009	monhyplan15	RECON, Sensitive_sp	NO	N/A	N/A	526957	3616598	0.76
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	450	7/6/2009	RECON Biologists, 2009	monhyplan450	RECON, Sensitive_sp	NO	N/A	N/A	526938	3616590	0.76
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	4	7/6/2009	RECON Biologists, 2009	monhyplan4	RECON, Sensitive_sp	NO	N/A	N/A	526954	3616636	0.79
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	60	7/6/2009	RECON Biologists, 2009	monhyplan60	RECON, Sensitive_sp	NO	N/A	N/A	526952	3616654	0.80
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	20	7/6/2009	RECON Biologists, 2009	FMR0706 Mohyla	RECON, Sensitive_sp	NO	N/A	N/A	526954	3616656	0.80
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	30	7/16/2009	RECON Biologists, 2009	monhyp-30pl	RECON, Sensitive_sp	YES	MS-081	S-10	530273	3630460	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	200	7/16/2009	RECON Biologists, 2009	monhhyp-200pl	RECON, Sensitive_sp	YES	MS-081	S-11	530172	3630448	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	30	7/16/2009	RECON Biologists, 2009	monhyp-30	RECON, Sensitive_sp	YES	MS-081	S-12	530274	3630473	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	10	7/16/2009	RECON Biologists, 2009	monhyp-10pl	RECON, Sensitive_sp	YES	MS-081	S-13	530260	3630442	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	20	7/16/2009	RECON Biologists, 2009	monhyp-20pl	RECON, Sensitive_sp	YES	MS-081	S-14	530262	3630442	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	7	7/16/2009	RECON Biologists, 2009	monhyp-07pl	RECON, Sensitive_sp	YES	MS-081	S-15	530266	3630442	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	200	7/16/2009	RECON Biologists, 2009	monhyp-200pl	RECON, Sensitive_sp	YES	MS-081	S-16	530172	3630439	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	2	7/16/2009	RECON Biologists, 2009	monhyp-2pl	RECON, Sensitive_sp	YES	MS-081	S-17	530271	3630442	0.01

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	10	7/16/2009	RECON Biologists, 2009	monhyp-10	RECON, Sensitive_sp	YES	MS-081	S-18	530292	3630488	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	53	7/16/2009	RECON Biologists, 2009	monhyop-53pl	RECON, Sensitive_sp	YES	MS-081	S-19	530267	3630438	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	20	7/16/2009	RECON Biologists, 2009	monhyp-20	RECON, Sensitive_sp	YES	MS-081	S-20	530286	3630487	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	7/16/2009	RECON Biologists, 2009	monhyp-50	RECON, Sensitive_sp	YES	MS-081	S-21	530245	3630474	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	7/24/2009	RECON Biologists, 2009	monhyp-5pl	RECON, Sensitive_sp	YES	MS-081	S-22	530304	3630468	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	20	7/24/2009	RECON Biologists, 2009	monhyp-20pl	RECON, Sensitive_sp	YES	MS-081	S-23	530305	3630467	0.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	7/30/2008	Jones & Stokes	N/A	Jones & Stokes, Rare_Plant_Lightner_pt_081908	YES	MS-081	S-24	530269	3630437	0.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	200	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	YES	MS-072	S-25	527959	3622812	0.26
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	4/29/2008	ARCADIS	from point	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	531131	3637173	4.00
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/10/2007	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	526982	3617483	0.72
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	200	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-26	528046	3622851	0.32
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	4/23/2008	ARCADIS	just off existing access rd	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-27	527940	3622824	0.25
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	10	4/23/2008	ARCADIS	probably conect polygon	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-28	527935	3622830	0.25

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-29	527893	3622712	0.19
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-30	527898	3622710	0.19
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/23/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-31	528087	3622793	0.32
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/29/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531097	3636300	3.46
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/29/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531077	3636817	3.78
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	8	4/29/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531070	3636834	3.79
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	30	4/29/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531090	3636957	3.87
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	6	4/29/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531077	3636988	3.89
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	4/29/2008	ARCADIS	50' radius from point	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531072	3637060	3.92
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	4/29/2008	ARCADIS	extend point to poly	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531081	3637100	3.94
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	1	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531733	3636875	3.81
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	15	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531732	3636872	3.80
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531722	3636877	3.81

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531723	3636878	3.81
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531725	3636879	3.81
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	10	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531732	3636906	3.82
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531740	3636914	3.83
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531739	3636913	3.83
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	109	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531719	3637063	3.92
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	15	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531712	3637094	3.94
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531707	3637132	3.96
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531694	3637163	3.98
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531688	3637200	4.01
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	100	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531667	3637254	4.04
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531638	3637308	4.07
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	30	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531619	3637353	4.10

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	45	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531617	3637363	4.11
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531621	3637384	4.12
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	20	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531589	3637447	4.16
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531373	3637650	4.29
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	100	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531302	3637699	4.30
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531217	3637618	4.22
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	15	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531197	3637600	4.21
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	4/30/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531172	3637620	4.20
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	150	6/19/2008	ARCADIS	in rd. and on edges	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-32	528055	3622799	0.31
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	15	6/19/2008	ARCADIS	in bud	ARCADIS, RarePlant_2008_pt	YES	MS-072	S-33	527881	3622704	0.18
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	20	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	527091	3616537	0.69
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	10	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	527068	3616548	0.71
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	5	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526960	3616543	0.73

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Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	10	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526960	3616542	0.73
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526938	3616595	0.77
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526958	3616602	0.77
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	50	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	YES	MS-067	S-34	527317	3616798	0.63
Felt-leaved monardella	*Monardella hypoleuca ssp. lanata*	25	6/27/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	531585	3637778	4.37
Chaparral beargrass	*Nolina cismontana*	1	9/9/1984	Biologist		USFS TESPeos4-1	NO	N/A	N/A	524843	3635815	1.63
Chaparral beargrass	*Nolina cismontana*	1	5/1/1991	Biologist		USFS TESPeos4-1	YES	MS-084	T-2	525862	3633674	0.48
Chaparral beargrass	*Nolina cismontana*	1	56/1/1991	Biologist		USFS TESPeos4-1	NO	N/A	N/A	526071	3634952	1.10
Chaparral beargrass	*Nolina cismontana*	90	6/15/2001	Biologist		USFS TESPeos4-1	YES	MS-085	T-3	525138	3633700	0.84
Chaparral beargrass	*Nolina cismontana*	1	3/9/2004	Biologist	Viejas Mountain	CNDDB	YES	MS-085	T-1	525167	3633647	0.50
Chaparral beargrass	*Nolina cismontana*	1	3/9/2004	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	526161	3634809	1.18
Chaparral beargrass	*Nolina cismontana*	1	7/5/2005	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	524381	3634021	0.73
Gander's ragwort	*Packera ganderi*	1	5/29/1978	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	513046	3623885	7.31
Gander's ragwort	*Packera ganderi*	1	5/7/1980	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	537447	3644866	9.27
Gander's ragwort	*Packera ganderi*	1	4/16/1986	Biologist	N/A	USFS TESPeos4	YES	MS-067	U-9	527386	3616525	0.45
Gander's ragwort	*Packera ganderi*	1	4/16/1986	Biologist	N/A	USFS TESPeos4	YES	MS-066	U-10	527177	3616323	0.45
Gander's ragwort	*Packera ganderi*	1	5/23/1988	Biologist	N/A	USFS TESPeos4	YES	MS-070	U-8	527473	3619782	0.33
Gander's ragwort	*Packera ganderi*	1000	6/13/2001	Biologist	N/A	USFS TESPeos4	YES	MS-072	U-11	527543	3621812	0.20
Gander's ragwort	*Packera ganderi*	1	1/1/2004	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518225	3624419	5.09
Gander's ragwort	*Packera ganderi*	1	5/1/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	525902	3619241	0.73
Gander's ragwort	*Packera ganderi*	1	5/1/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	526493	3620580	0.80
Gander's ragwort	*Packera ganderi*	1	5/17/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	525893	3620868	1.22
Gander's ragwort	*Packera ganderi*	1	5/23/2005	Biologist	N/A	USFS TESPeos4	YES	MS-070	U-7	526893	3620013	0.31
Gander's ragwort	*Packera ganderi*	1	5/31/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518768	3643737	3.07

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Gander's ragwort	*Packera ganderi*	1	6/1/2005	Biologist	N/A	USFS TESPeos4	YES	MS-067	U-12	527402	3616633	0.54
Gander's ragwort	*Packera ganderi*	1	6/1/2005	Biologist	N/A	USFS TESPeos4	YES	MS-067	U-13	527062	3616667	0.60
Gander's ragwort	*Packera ganderi*	1	6/1/2005	Biologist	N/A	USFS TESPeos4	YES	MS-066	U-14	527254	3616487	0.60
Gander's ragwort	*Packera ganderi*	1	6/1/2005	Biologist	N/A	USFS TESPeos4	YES	MS-067	U-15	527086	3617335	0.63
Gander's ragwort	*Packera ganderi*	1	6/1/2005	Biologist	N/A	USFS TESPeos4	YES	MS-071	U-16	527079	3621189	0.57
Gander's ragwort	*Packera ganderi*	1	6/1/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	526778	3620935	0.68
Gander's ragwort	*Packera ganderi*	1	6/7/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	526397	3617113	1.10
Gander's ragwort	*Packera ganderi*	1	9/12/2005	Biologist	N/A	USFS TESPeos4	NO	N/A	N/A	518349	3642764	2.52
Gander's ragwort	*Packera ganderi*	1	8/13/2009	Biologist	Tecate	CNDDB	NO	N/A	N/A	529879	3606176	4.59
Gander's ragwort	*Packera ganderi*	1	8/18/2009	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526633	3620740	0.77
Gander's ragwort	*Packera ganderi*	1	8/18/2009	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518346	3642780	2.55
Gander's ragwort	*Packera ganderi*	1	8/18/2009	Biologist	Alpine	CNDDB	NO	N/A	N/A	517127	3624669	5.73
Gander's ragwort	*Packera ganderi*	1	8/19/2009	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525972	3619207	0.72
Gander's ragwort	*Packera ganderi*	1	8/19/2009	Biologist	Tecate	CNDDB	NO	N/A	N/A	534990	3609666	1.99
Gander's ragwort	*Packera ganderi*	1	8/19/2009	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	505795	3648683	2.70
Gander's ragwort	*Packera ganderi*	1	8/19/2009	Biologist	Alpine	CNDDB	NO	N/A	N/A	517694	3624205	5.65
Gander's ragwort	*Packera ganderi*	1	8/19/2009	Biologist	Alpine	CNDDB	NO	N/A	N/A	513166	3623780	7.16
Gander's ragwort	*Packera ganderi*	1	9/9/2009	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526971	3616696	0.82
Gander's ragwort	*Packera ganderi*	1350	7/6/2009	RECON Biologists, 2009	senpac	RECON, Sensitive_sp	YES	MS-066	U-1	527167	3616425	0.61
Gander's ragwort	*Packera ganderi*	100	7/6/2009	RECON Biologists, 2009	senpac	RECON, Sensitive_sp	YES	MS-066	U-2	527130	3616451	0.63
Gander's ragwort	*Packera ganderi*	250	7/6/2009	RECON Biologists, 2009	senpac	RECON, Sensitive_sp	YES	MS-066	U-3	527174	3616479	0.64
Gander's ragwort	*Packera ganderi*	10	7/6/2009	RECON Biologists, 2009	senpac	RECON, Sensitive_sp	YES	MS-066	U-4	527135	3616485	0.65
Gander's ragwort	*Packera ganderi*	5	7/6/2009	RECON Biologists, 2009	senpac5	RECON, Sensitive_sp	YES	MS-067	U-5	527215	3616528	0.65
Gander's ragwort	*Packera ganderi*	400	7/6/2009	RECON Biologists, 2009	sengan400	RECON, Sensitive_sp	NO	N/A	N/A	527160	3616508	0.66
Gander's ragwort	*Packera ganderi*	135	7/6/2009	RECON Biologists, 2009	senpac135	RECON, Sensitive_sp	YES	MS-067	U-6	527204	3616540	0.66
Gander's ragwort	*Packera ganderi*	450	7/6/2009	RECON Biologists, 2009	sengan450	RECON, Sensitive_sp	NO	N/A	N/A	527062	3616599	0.74
Gander's ragwort	*Packera ganderi*	15	7/6/2009	RECON Biologists, 2009	senpac15	RECON, Sensitive_sp	NO	N/A	N/A	526970	3616608	0.77
Gander's ragwort	*Packera ganderi*	2	7/6/2009	RECON Biologists, 2009	senpac2	RECON, Sensitive_sp	NO	N/A	N/A	526973	3616613	0.77
Gander's ragwort	*Packera ganderi*	5	7/6/2009	RECON Biologists, 2009	senpac5	RECON, Sensitive_sp	NO	N/A	N/A	526974	3616617	0.77

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Gander's ragwort	*Packera ganderi*	350	7/6/2009	RECON Biologists, 2009	senpac350	RECON, Sensitive_sp	NO	N/A	N/A	526949	3616614	0.78
Gander's ragwort	*Packera ganderi*	50	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	527031	3616546	0.72
Gander's ragwort	*Packera ganderi*	1	4/10/2007	ARCADIS	N/A	ARCADIS, RarePlant_2008_poly	NO	N/A	N/A	527002	3617407	0.72
Gander's ragwort	*Packera ganderi*	10	4/10/2008	ARCADIS	oak under story	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526988	3617358	0.73
Gander's ragwort	*Packera ganderi*	5	4/10/2008	ARCADIS	under story-oaks	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526989	3617368	0.73
Gander's ragwort	*Packera ganderi*	10	4/10/2008	ARCADIS	under oak by road	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526999	3617407	0.72
Gander's ragwort	*Packera ganderi*	25	4/10/2008	ARCADIS	under oak	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	527003	3617409	0.72
Gander's ragwort	*Packera ganderi*	10	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	527091	3616532	0.69
Gander's ragwort	*Packera ganderi*	50	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526971	3616547	0.73
Gander's ragwort	*Packera ganderi*	10	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526943	3616561	0.75
Gander's ragwort	*Packera ganderi*	20	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526937	3616562	0.75
Gander's ragwort	*Packera ganderi*	50	6/24/2008	ARCADIS	N/A	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	526936	3616591	0.77
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Jacumba	CNDDB	NO	N/A	N/A	570891	3612718	0.56
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Jacumba	CNDDB	NO	N/A	N/A	576306	3609386	0.69

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	568048	3614383	0.82
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	569985	3610860	1.56
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	507810	3648430	3.34
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Dulzura	CNDDB	NO	N/A	N/A	521102	3623200	3.74
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	554449	3637369	5.94
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	505788	3655234	6.59
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Dulzura	CNDDB	NO	N/A	N/A	514627	3619832	7.78
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/10/1989	Biologist	Rancho Santa Fe	CNDDB	NO	N/A	N/A	488060	3656164	9.57
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/14/1992	Biologist	Dulzura	CNDDB	NO	N/A	N/A	517861	3621138	5.89
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/15/1992	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	547131	3638514	8.79
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/15/1992	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	548016	3641583	9.98
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	2/27/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	556074	3629068	0.73
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	2/27/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	554381	3626827	0.98

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	2/27/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	552067	3626770	2.13
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	2/27/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	546805	3636707	8.13
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Morena Reservoir	CNDDB	YES	MS-053	V-72	543211	3613737	0.16
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	541310	3614806	0.83
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	534541	3628310	1.35
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Descanso	CNDDB	NO	N/A	N/A	536802	3628959	2.23
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	543538	3621046	2.81
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	551944	3630381	3.16
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	547392	3637149	8.06
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Descanso	CNDDB	NO	N/A	N/A	545249	3636676	8.37
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/1992	Biologist	Descanso	CNDDB	NO	N/A	N/A	545182	3637366	8.55
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/5/1992	Biologist	Descanso	CNDDB	NO	N/A	N/A	543322	3633151	6.41
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/9/1992	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	524025	3635061	1.34

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/9/1992	Biologist	Descanso	CNDDB	NO	N/A	N/A	535831	3635543	3.64
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/10/1992	Biologist	Cameron Corners	CNDDB	YES	MS-043	V-73	549985	3620366	0.29
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/10/1992	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	550228	3621394	0.89
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/10/1992	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	551005	3621893	1.24
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/11/1992	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	531520	3619246	1.98
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/11/1992	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	544803	3638001	8.57
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/30/1992	Biologist	Cameron Corners	CNDDB	NO	N/A	N/A	556391	3614014	3.69
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/13/1992	Biologist	Alpine	CNDDB	NO	N/A	N/A	512597	3625671	6.33
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	12/30/1992	Biologist	Jamul Mountains	CNDDB	NO	N/A	N/A	509623	3621622	9.36
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/6/1993	Biologist	Escondido	CNDDB	NO	N/A	N/A	490930	3654479	7.69
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/6/1993	Biologist	Escondido	CNDDB	NO	N/A	N/A	489757	3657170	9.49
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/1994	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	526551	3634065	0.73
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/1994	Biologist	Descanso	CNDDB	NO	N/A	N/A	546636	3632357	6.14

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/1994	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	546945	3637562	8.44
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/2/1994	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	540365	3614970	0.93
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/2/1994	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	541387	3620321	4.21
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/29/1994	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	503897	3640682	1.26
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	2/16/1995	Biologist	Escondido	CNDDB	NO	N/A	N/A	498154	3658444	8.60
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/23/1995	Biologist	Tecate	CNDDB	NO	N/A	N/A	525249	3603932	6.45
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/26/1995	Biologist	La Mesa	CNDDB	NO	N/A	N/A	499280	3631539	6.62
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/13/1995	Biologist	Tierra Del Sol	CNDDB	NO	N/A	N/A	560236	3609032	6.57
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/13/1995	Biologist	Poway	CNDDB	NO	N/A	N/A	489196	3650764	6.67
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/13/1995	Biologist	Rancho Santa Fe	CNDDB	NO	N/A	N/A	485760	3651850	8.79
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/14/1995	Biologist	La Jolla	CNDDB	NO	N/A	N/A	486652	3633214	8.50
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/5/1996	Biologist	La Mesa	CNDDB	NO	N/A	N/A	490010	3628786	9.37
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/4/1996	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	503138	3642428	0.98

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	12/16/1996	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	514527	3637750	0.89
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	12/20/1996	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	523177	3628523	2.33
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/30/1997	Biologist	Poway	CNDDB	NO	N/A	N/A	496860	3649898	3.54
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/5/1998	Biologist	Alpine	CNDDB	YES	MS-093	V-74	516313	3636353	1.35
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/23/1998	Biologist	Poway	CNDDB	NO	N/A	N/A	498227	3648148	2.35
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/27/1998	Biologist	Alpine	CNDDB	NO	N/A	N/A	522560	3624024	2.85
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	9/15/1998	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	519848	3649885	6.86
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/7/1998	Biologist	Cuyamaca Peak	CNDDB	NO	N/A	N/A	535474	3643670	8.35
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/8/1998	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	507744	3644022	1.84
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/21/1998	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	533025	3631544	0.79
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/16/1999	Biologist	Poway	CNDDB	NO	N/A	N/A	492977	3647062	3.41
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/30/1999	Biologist	Poway	CNDDB	NO	N/A	N/A	490088	3643901	4.43
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/2/1999	Biologist	Poway	CNDDB	NO	N/A	N/A	498523	3639911	1.52

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/10/1999	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	531103	3633664	1.83
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/2/2002	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	502769	3638519	2.56
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/17/2002	Biologist	El Cajon	CNDDB	NO	N/A	N/A	508248	3634099	1.97
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/20/2003	Biologist	La Mesa	CNDDB	NO	N/A	N/A	490473	3636138	5.52
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/28/2003	Biologist	Del Mar	CNDDB	NO	N/A	N/A	483344	3639522	8.66
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/8/2003	Biologist	Escondido	CNDDB	NO	N/A	N/A	495513	3653969	6.20
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/9/2003	Biologist	Escondido	CNDDB	NO	N/A	N/A	499682	3655208	6.45
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/8/2003	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	524133	3633727	0.53
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/15/2003	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	536281	3619462	3.75
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/24/2003	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	528954	3625083	1.03
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/18/2003	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	509584	3657969	8.93
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/1/2004	Biologist	Poway	CNDDB	NO	N/A	N/A	490249	3638402	4.81
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/1/2004	Biologist	La Mesa	CNDDB	NO	N/A	N/A	489052	3633346	7.37

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/11/2004	Biologist	La Jolla	CNDDB	NO	N/A	N/A	485551	3633300	9.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/31/2007	Biologist	El Cajon	CNDDB	NO	N/A	N/A	510638	3629414	4.53
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/31/2007	Biologist	Alpine	CNDDB	NO	N/A	N/A	512237	3627350	5.65
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/31/2007	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	517531	3602826	9.79
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/22/2009	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	507678	3655993	7.36
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1981	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	523944	3635038	1.32
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1981	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	535438	3635409	3.47
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1982	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	546618	3632492	6.22
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	volgarino(Descanso Atlas)	N/A	USFS, cnf_tes_pts	YES	MS-043	V-75	549922	3620342	0.30
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	volgarino(Descanso Atlas)	N/A	USFS, cnf_tes_pts	YES	MS-043	V-76	550002	3620513	0.37
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	boyd(Descanso Atlas)	open softsand	USFS, cnf_tes_pts	NO	N/A	N/A	556023	3629122	0.78
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	volgarino(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	541351	3614794	0.82
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	k.fink(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	554418	3626844	0.97

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	j.wells(Descanso Atlas)	juvenile	USFS, cnf_tes_pts	NO	N/A	N/A	531527	3619246	1.98
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	volgarino/woychak(Desc.Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	536802	3629194	2.18
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	walls(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	552002	3626848	2.19
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	volgarino/woychak(Desc.Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	536780	3628926	2.22
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	boyd/wells(Descanso Atlas)	juvenile in open are	USFS, cnf_tes_pts	NO	N/A	N/A	543524	3621035	2.82
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	545317	3636750	8.43
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	545122	3637466	8.55
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	boyd(Descanso Atlas)	adult on road	USFS, cnf_tes_pts	NO	N/A	N/A	544908	3637919	8.59
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1990	boyd(Descanso Atlas)	juvenile	USFS, cnf_tes_pts	NO	N/A	N/A	544813	3638123	8.62
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	YES	MS-035	V-77	555075	3623662	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	k.winter(Descanso Atlas)	juvenile	USFS, cnf_tes_pts	YES	MS-053	V-78	543137	3613744	0.16
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	550177	3621364	0.87
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	tony m.(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	550920	3621886	1.23

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	boyd(Descanso Atlas)	1" long	USFS, cnf_tes_pts	NO	N/A	N/A	534553	3628331	1.34
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	boyd(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	551942	3630414	3.17
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	k.winter(Descanso Atlas)	juvenile	USFS, cnf_tes_pts	NO	N/A	N/A	535506	3635573	3.58
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	woychak(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	547411	3637126	8.04
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	woychak(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	546773	3636690	8.14
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1991	woychak(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	546936	3636918	8.17
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	2	1/1/1991	woychak(Descanso Atlas)	juveniles	USFS, cnf_tes_pts	NO	N/A	N/A	547179	3638463	8.74
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1992	volgarino(Descanso Atlas)	lvb adult	USFS, cnf_tes_pts	NO	N/A	N/A	526541	3634068	0.73
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1992	c.boyd(Descanso Atlas)	young juvenile	USFS, cnf_tes_pts	NO	N/A	N/A	540472	3614935	0.91
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	5	1/1/1992	c.boyd(Descanso Atlas)	3 juvenile 2 adults	USFS, cnf_tes_pts	NO	N/A	N/A	539154	3615371	1.41
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	3	1/1/1992	volgarino(Descanso Atlas)	adults	USFS, cnf_tes_pts	NO	N/A	N/A	539339	3615542	1.44
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1992	boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	541387	3620362	4.21
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1992	unitt/boyd(Descanso Atlas)	adult	USFS, cnf_tes_pts	NO	N/A	N/A	546691	3632347	6.13

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	538737	3623626	5.24
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	2	1/1/1993	c.boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	542955	3634498	6.49
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/2003	B. Hollingsworth, D. Wood	SDNHM specimen, SD F	USFS, cnf_tes_pts	YES	MS-053	V-79	542005	3613550	0.05
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/2003	K. Winter	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	536349	3619467	3.76
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/2006	G. Bustillos	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	545346	3636666	8.42
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/2007	K. Winter, M. Jennings	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	524105	3636796	2.42
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/2007	K. Winter, M. Jennings	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	524294	3636781	2.43
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1981	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	543254	3633151	6.37
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	9/1/1981	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	535438	3635409	3.47
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/1/1981	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	523944	3635038	1.32
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/1/1982	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	546618	3632492	6.22
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/1/1990	volgarino(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	YES	MS-043	V-80	549922	3620342	0.30
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/1/1990	volgarino(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	YES	MS-043	V-81	550002	3620513	0.37

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/1990	boyd/wells(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	543524	3621035	2.82
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/1990	boyd(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	545317	3636750	8.43
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/1990	boyd(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	545122	3637466	8.55
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/13/1990	boyd(Descanso Atlas)	Site ID = 420 adult	USFS, wild_obs_pt	NO	N/A	N/A	544908	3637919	8.59
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/13/1990	boyd(Descanso Atlas)	Site ID = 418 juveni	USFS, wild_obs_pt	NO	N/A	N/A	544813	3638123	8.62
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/29/1990	walls(Descanso Atlas)	Site ID = 378 adult	USFS, wild_obs_pt	NO	N/A	N/A	552002	3626848	2.19
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1990	k.fink(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	554418	3626844	0.97
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1990	volgarino/woychak(Desc.Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	536802	3629194	2.18
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1990	volgarino/woychak(Desc.Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	536780	3628926	2.22
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/3/1990	boyd(Descanso Atlas)	Site ID = 390 open s	USFS, wild_obs_pt	NO	N/A	N/A	556023	3629122	0.78
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	9/25/1990	j.wells(Descanso Atlas)	Site ID = 480 juveni	USFS, wild_obs_pt	NO	N/A	N/A	531527	3619246	1.98
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/1/1990	volgarino(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	541351	3614794	0.82
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/16/1991	boyd(Descanso Atlas)	Site ID = 316 Detect	USFS, wild_obs_pt	NO	N/A	N/A	550177	3621364	0.87

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/30/1991	(Descanso Atlas)	Actual number of ind	USFS, wild_obs_pt	YES	MS-035	V-82	555075	3623662	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1991	k.winter(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	YES	MS-053	V-83	543137	3613744	0.16
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1991	boyd(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	551942	3630414	3.17
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1991	woychak(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	546773	3636690	8.14
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/1/1991	woychak(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	546936	3636918	8.17
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	8/1/1991	tony m.(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	550920	3621886	1.23
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	9/1/1991	woychak(Descanso Atlas)	Site ID = 334 Detect	USFS, wild_obs_pt	NO	N/A	N/A	547411	3637126	8.04
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/1/1991	k.winter(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	535506	3635573	3.58
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/4/1991	boyd(Descanso Atlas)	Site ID = 443 1" lon	USFS, wild_obs_pt	NO	N/A	N/A	534553	3628331	1.34
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	2	11/13/1991	woychak(Descanso Atlas)	Site ID = 286 juveni	USFS, wild_obs_pt	NO	N/A	N/A	547179	3638463	8.74
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	3	2/22/1992	volgarino(Descanso Atlas)	Site ID = 538 adults	USFS, wild_obs_pt	NO	N/A	N/A	539339	3615542	1.44
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/16/1992	boyd(Descanso Atlas)	Site ID = 500 Detect	USFS, wild_obs_pt	NO	N/A	N/A	541387	3620362	4.21
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/10/1992	volgarino(Descanso Atlas)	Site ID = 432 lvb ad	USFS, wild_obs_pt	NO	N/A	N/A	526541	3634068	0.73

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/19/1992	unitt/boyd(Descanso Atlas)	Site ID = 578 adult	USFS, wild_obs_pt	NO	N/A	N/A	546691	3632347	6.13
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	7/28/1992	c.boyd(Descanso Atlas)	Site ID = 526 young	USFS, wild_obs_pt	NO	N/A	N/A	540472	3614935	0.91
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	5	7/28/1992	c.boyd(Descanso Atlas)	Site ID = 540 3 juve	USFS, wild_obs_pt	NO	N/A	N/A	539154	3615371	1.41
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1993	boyd(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	545906	3634409	7.47
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	2	3/1/1993	c.boyd(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	542955	3634498	6.49
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/9/1993	(Descanso Atlas)	Site ID = 494 Detect	USFS, wild_obs_pt	NO	N/A	N/A	538737	3623626	5.24
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	YES	MS-038	V-84	553806	3620341	0.25
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	YES	MS-036	V-85	548254	3621611	0.30
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	526659	3615070	0.51
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	557848	3624225	1.38
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	boyd(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	534719	3628176	1.48
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	531218	3623704	2.19
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	535558	3633316	2.35

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	547274	3626605	2.55
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	535621	3635395	3.50
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	556403	3613883	3.76
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	546984	3629321	4.24
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	515401	3648446	5.30
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	554594	3637057	5.73
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	530209	3648161	9.39
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	1/1/1996	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	530033	3648472	9.44
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/10/2003	B. Hollingsworth, D. Wood	Locational accuracy	USFS, wild_obs_pt	YES	MS-053	V-86	542005	3613550	0.05
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2003	K. Winter	Note indicates adult	USFS, wild_obs_pt	NO	N/A	N/A	536349	3619467	3.76
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/9/2006	G. Bustillos	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	545346	3636666	8.42
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/16/2007	K. Winter, M. Jennings	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	524105	3636796	2.42
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/16/2007	K. Winter, M. Jennings	Actual number of ind	USFS, wild_obs_pt	NO	N/A	N/A	524294	3636781	2.43

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/12/2009	Chris Bugbee	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group	YES	MS-042	V-87	551951	3618832	0.08
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	3	6/11/2009	Chris Bugbee	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group	YES	MS-042	V-88	551505	3618715	0.05
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/14/2009	Chris Bugbee	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group	YES	MS-042	V-89	551556	3618927	0.02
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/8/2006	N/A	N/A	2007 Bio Data, PointWild	NO	N/A	N/A	513528	3651088	6.90

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/2009	Rebecca Alvidrez	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-082	V-1	528550	3630391	0.08
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/2009	Rebecca Alvidrez	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-082	V-2	528551	3630411	0.08
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-039	V-3	553542	3619729	0.18
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/17/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-078	V-4	529312	3629142	0.04

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/24/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-112	V-5	500323	3643893	0.33
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/24/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-078	V-6	529312	3628992	0.07
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/24/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-113	V-7	499478	3642551	0.10
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-008	V-8	574337	3610650	0.34

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/2/2009	Erik Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-039	V-9	553625	3619380	0.19
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/4/2009	Erik Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-10	551844	3618902	0.02
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/18/2009	Erik Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-035	V-11	554206	3622801	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	2	4/5/2009	Chris Elkins	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-081	V-12	529733	3630242	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/5/2009	Chris Elkins	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-030	V-13	557882	3628011	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	3/30/2009	Eric Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-033	V-14	555470	3625406	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/2/2009	Eric Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-108	V-15	505134	3642437	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/7/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-081	V-16	529566	3629686	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/7/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-078	V-17	529316	3629143	0.04
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/7/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	NO	N/A	N/A	528716	3630404	0.01
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/7/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-081	V-18	529481	3630045	0.01
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-053	V-19	542199	3612678	0.22

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/14/2009	Debbie De la Torre	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-20	551200	3618334	0.10
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/26/2009	Chris Elkins	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-104	V-21	507764	3639488	0.04
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/28/2009	Rebecca Alvidrez	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-107	V-22	506031	3641482	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/16/2009	Erik Strods	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-079	V-23	533173	3630276	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/1/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-24	551849	3618881	0.03
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/1/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-035	V-25	555053	3623726	0.02
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	5/1/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-080	V-26	531577	3630729	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-008	V-27	574562	3610685	0.28

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/7/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-053	V-28	542193	3612678	0.22
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-019	V-29	569597	3619225	0.08
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-020	V-30	569501	3620154	0.02
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-026	V-31	563631	3626777	0.01

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-026	V-32	564688	3626213	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-026	V-33	564304	3626303	0.02
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-025	V-34	566119	3625354	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-026	V-35	563522	3626806	0.03

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-109	V-36	504601	3643158	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-021	V-37	568627	3621672	0.03
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-027	V-38	562768	3627335	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-027	V-39	562609	3627456	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-017	V-40	569427	3617443	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-110	V-41	504079	3644281	0.06
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-022	V-42	568279	3622411	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-028	V-43	562059	3627765	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-022	V-44	568135	3623065	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-019	V-45	569421	3618448	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-025	V-46	565266	3626052	0.08
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	NO	N/A	N/A	527033	3616952	0.80

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-019	V-47	569529	3619337	0.03
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-021	V-48	569352	3620694	0.03
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-021	V-49	568846	3620992	0.01
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-026	V-50	564413	3626339	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-022	V-51	568303	3622462	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-108	V-52	505096	3642547	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-024	V-53	567157	3624748	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-108	V-54	505194	3642566	0.05

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-109	V-55	503993	3644063	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-023	V-56	568060	3623292	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-028	V-57	561885	3627999	0.03
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	2	4/28/2009	Rebecca Alvidrez	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-108	V-58	505135	3642358	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	4/28/2009	Rebecca Alvidrez	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-108	V-59	505152	3642341	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-093	V-60	517327	3637339	0.56
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-055	V-61	540046	3613028	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-047	V-62	549766	3615352	0.05

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-046	V-63	550558	3615989	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	NO	N/A	N/A	555990	3623750	0.49
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	NO	N/A	N/A	557657	3627544	0.27
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	NO	N/A	N/A	557660	3627542	0.27

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	6/1/2009	Chambers Group Biologist	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	NO	N/A	N/A	529407	3625678	1.25
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-64	551020	3618461	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-65	551032	3618476	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-66	551047	3618496	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-67	551073	3618513	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-68	551102	3618527	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-69	551123	3618551	0.00
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	10/6/2009	Laurie Gorman	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-042	V-70	551126	3618579	0.00

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San Diego horned lizard	*Phrynosoma coronatum blainvillii*	1	11/13/2009	Linette Lina	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-039	V-71	552876	3618973	0.16
Moreno currant	*Ribes canthariforme*	1	8/11/1989	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	542496	3616370	1.80
Moreno currant	*Ribes canthariforme*	1	10/6/1992	Biologist	Alpine	CNDDB	NO	N/A	N/A	517637	3625348	5.23
Moreno currant	*Ribes canthariforme*	1	10/6/1992	Biologist	Alpine	CNDDB	NO	N/A	N/A	517612	3624209	5.70
Moreno currant	*Ribes canthariforme*	1	10/6/1992	Biologist	Dulzura	CNDDB	NO	N/A	N/A	517363	3623180	6.03
Moreno currant	*Ribes canthariforme*	1	10/23/1995	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525715	3620901	1.35
Moreno currant	*Ribes canthariforme*	1	9/6/1998	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	517023	3642187	1.79
Moreno currant	*Ribes canthariforme*	1	9/6/1998	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	514353	3643023	1.88
Moreno currant	*Ribes canthariforme*	1	9/6/1998	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	518255	3642877	2.57
Moreno currant	*Ribes canthariforme*	1	9/6/1998	Biologist	Descanso	CNDDB	NO	N/A	N/A	536001	3633488	2.59
Moreno currant	*Ribes canthariforme*	1	9/6/1998	Biologist	Dulzura	CNDDB	NO	N/A	N/A	522131	3618296	3.14
Moreno currant	*Ribes canthariforme*	1	9/6/1998	Biologist	Morena Reservoir	CNDDB	NO	N/A	N/A	538533	3618431	3.29
Moreno currant	*Ribes canthariforme*	1	3/7/2002	Biologist	Barrett Lake	CNDDB	YES	MS-072	W-1	527168	3622343	0.27
Moreno currant	*Ribes canthariforme*	1	3/7/2002	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	525452	3626423	0.65
Moreno currant	*Ribes canthariforme*	1	8/16/2002	Biologist	Descanso	CNDDB	NO	N/A	N/A	539022	3625164	4.67
Moreno currant	*Ribes canthariforme*	1	3/14/2007	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	525835	3622377	0.99

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Moreno currant	*Ribes canthariforme*	1	3/14/2007	Biologist	Dulzura	CNDDB	NO	N/A	N/A	516582	3621654	6.63
Moreno currant	*Ribes canthariforme*	1	6/30/2009	RECON Biologists, 2009	ribcan?	RECON, Sensitive_sp	YES	MS-064	W-2	528711	3614021	0.00
Moreno currant	*Ribes canthariforme*	1	4/14/1927	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	542232	3616564	1.84
Moreno currant	*Ribes canthariforme*	1	3/12/1936	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	542355	3616389	1.75
Moreno currant	*Ribes canthariforme*	1	6/10/1937	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	515114	3643128	1.88
Moreno currant	*Ribes canthariforme*	1	9/16/1937	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	536225	3633761	2.78
Moreno currant	*Ribes canthariforme*	1	1/30/1941	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	542755	3616122	1.60
Moreno currant	*Ribes canthariforme*	1	5/24/1964	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	517008	3643311	2.36
Moreno currant	*Ribes canthariforme*	1	2/1/1980	Biologist	N/A	USFS TESPeos4-1	YES	MS-058	W-5	535557	3613608	0.00
Moreno currant	*Ribes canthariforme*	1	2/1/1980	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	513709	3644907	3.04
Moreno currant	*Ribes canthariforme*	1	2/1/1980	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	521274	3623614	3.42
Moreno currant	*Ribes canthariforme*	1	2/17/1980	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	525733	3621126	1.32
Moreno currant	*Ribes canthariforme*	1	2/17/1980	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	525943	3620798	1.13
Moreno currant	*Ribes canthariforme*	1	9/12/1989	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	522226	3618242	3.05
Moreno currant	*Ribes canthariforme*	1	9/21/1991	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	538458	3624487	4.50
Moreno currant	*Ribes canthariforme*	1	4/14/1993	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	518273	3642872	2.55
Moreno currant	*Ribes canthariforme*	1	3/11/1994	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	517128	3642197	1.75
Moreno currant	*Ribes canthariforme*	1	11/20/1996	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	538522	3618415	3.25
Moreno currant	*Ribes canthariforme*	20	6/13/2001	Biologist	N/A	USFS TESPeos4-1	YES	MS-072	W-3	527150	3622314	0.23
Moreno currant	*Ribes canthariforme*	20	6/13/2001	Biologist	N/A	USFS TESPeos4-1	YES	MS-072	W-4	527213	3622460	0.19

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Moreno currant	*Ribes canthariforme*	1	9/12/2005	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	519232	3642926	2.84
Moreno currant	*Ribes canthariforme*	12	4/20/2007	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	539281	3624932	4.81
Moreno currant	*Ribes canthariforme*	2	4/20/2007	Biologist	N/A	USFS TESPeos4-1	NO	N/A	N/A	538888	3625644	4.39
San Miguel savory	*Satureja chandleri*	1	2/24/1992	Biologist	Alpine	CNDDB	NO	N/A	N/A	513394	3623770	7.10
San Miguel savory	*Satureja chandleri*	1	12/17/2002	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	509383	3645531	3.22
San Miguel savory	*Satureja chandleri*	1	12/19/2002	Biologist	Otay Mountain	CNDDB	NO	N/A	N/A	515091	3606407	9.48
Hammitt's clay-cress	*Sibaropsis hammittii*	1	2/23/2004	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	527109	3634895	1.33
Hammitt's clay-cress	*Sibaropsis hammittii*	1	2/23/2004	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	523341	3635395	1.49
Hammitt's clay-cress	*Sibaropsis hammittii*	1	2/23/2004	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	530062	3635961	3.00
Hammitt's clay-cress	*Sibaropsis hammittii*	1	10/13/2005	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	524272	3634058	0.74
Southern jewelflower	*Streptanthus campestris*	1	4/7/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-115	X-1	496974	3642835	0.32
Southern jewelflower	*Streptanthus campestris*	1	3/24/2009	Rob Fletcher	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-104	X-2	508348	3638634	0.00

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Southern jewelflower	*Streptanthus campestris*	1	3/18/1996	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	568269	3614163	0.71
Southern jewelflower	*Streptanthus campestris*	1	3/18/1996	Biologist	Mount Laguna	CNDDB	NO	N/A	N/A	554739	3631760	2.60
Southern jewelflower	*Streptanthus campestris*	1	5/2/1996	Biologist	Live Oak Springs	CNDDB	NO	N/A	N/A	559420	3617679	3.91
Southern jewelflower	*Streptanthus campestris*	1	5/2/1996	Biologist	Descanso	CNDDB	NO	N/A	N/A	543975	3632567	6.71
Southern jewelflower	*Streptanthus campestris*	1	5/15/1996	Biologist	Morena Reservoir	CNDDB	YES	MS-050	X-3	546720	3613710	0.01
Southern jewelflower	*Streptanthus campestris*	1	4/30/2004	Biologist	Campo	CNDDB	NO	N/A	N/A	549722	3607910	3.31
Southern jewelflower	*Streptanthus campestris*	1	3/27/2008	ARCADIS	strep cam	ARCADIS, RarePlant_2008_pt	NO	N/A	N/A	565650	3616733	1.68
Southern jewelflower	*Streptanthus campestris*	1	6/24/2008	ARCADIS	NOT IN FLOWER	ARCADIS, RarePlant_2008_pt	YES	MS-014	X-4	570347	3614509	0.00
Southern jewelflower	*Streptanthus campestris*	2	6/24/2008	ARCADIS	NOT IN FLOWER	ARCADIS, RarePlant_2008_pt	YES	MS-014	X-5	570490	3614594	0.01
Southern jewelflower	*Streptanthus campestris*	7	6/24/2008	ARCADIS	NOT IN FLOWER	ARCADIS, RarePlant_2008_pt	YES	MS-014	X-6	570485	3614606	0.01
Southern jewelflower	*Streptanthus campestris*	7	6/24/2008	ARCADIS	NOT IN FLOWER	ARCADIS, RarePlant_2008_pt	YES	MS-014	X-7	570494	3614610	0.01
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1974	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552850	3635910	5.43
California spotted owl	*Strix occidentalis occidentalis*	1	6/14/1987	ROBERTS-ROBERTS	1.6 MILE @ 5 DEGREES	CNDDB, SPO_OBS	NO	N/A	N/A	541150	3641750	8.63
California spotted owl	*Strix occidentalis occidentalis*	1	6/14/1987	ROBERTS-ROBERTS	1.7 MILE @ 113 DEGRE	CNDDB, SPO_OBS	NO	N/A	N/A	539490	3644620	9.72
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	537640	3623360	4.98
California spotted owl	*Strix occidentalis occidentalis*	2	6/1/1990	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	548310	3637770	7.96
California spotted owl	*Strix occidentalis occidentalis*	1	6/6/1990	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552780	3633650	4.23
California spotted owl	*Strix occidentalis occidentalis*	2	6/6/1990	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552840	3635970	5.47

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California spotted owl	*Strix occidentalis occidentalis*	2	6/25/1990	FINK+	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	548230	3637690	7.95
California spotted owl	*Strix occidentalis occidentalis*	2	6/26/1990	FINK+	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552590	3632990	3.97
California spotted owl	*Strix occidentalis occidentalis*	2	6/26/1990	STEVENSON-FINK+	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	554290	3634990	4.57
California spotted owl	*Strix occidentalis occidentalis*	2	7/1/1990	CLE NF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	554510	3635090	4.58
California spotted owl	*Strix occidentalis occidentalis*	2	7/2/1990	FINK+	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	554290	3634990	4.57
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	CLE NF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552780	3633650	4.23
California spotted owl	*Strix occidentalis occidentalis*	1	5/1/1991	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	548390	3637490	7.79
California spotted owl	*Strix occidentalis occidentalis*	1	8/1/1991	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	548680	3638760	8.30
California spotted owl	*Strix occidentalis occidentalis*	2	3/31/1992	CLNF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552900	3635950	5.44
California spotted owl	*Strix occidentalis occidentalis*	1	4/15/1993	STEPHENSON	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	539440	3642730	8.64
California spotted owl	*Strix occidentalis occidentalis*	2	6/25/1993	BOYD-STEPHENSON	338 had location as	CNDDB, SPO_OBS	NO	N/A	N/A	552690	3636030	5.54
California spotted owl	*Strix occidentalis occidentalis*	2	4/5/1994	KIRKPATRICK	legal given only as	CNDDB, SPO_OBS	NO	N/A	N/A	539400	3642600	8.55
California spotted owl	*Strix occidentalis occidentalis*	2	4/8/1994	BOYD-HUNT	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552880	3633060	3.90
California spotted owl	*Strix occidentalis occidentalis*	1	4/8/1994	BOYD-HUNT	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552900	3635900	5.41
California spotted owl	*Strix occidentalis occidentalis*	2	4/22/1994	BOYD-BESTOR	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552880	3633060	3.90
California spotted owl	*Strix occidentalis occidentalis*	2	6/1/1994	CLE NF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	553360	3633560	3.99
California spotted owl	*Strix occidentalis occidentalis*	2	6/15/1994	BOYD-BESTOR-NELSON	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552880	3633060	3.90
California spotted owl	*Strix occidentalis occidentalis*	1	7/19/1994	BOYD-VERSOZA-SARAH	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552900	3635900	5.41
California spotted owl	*Strix occidentalis occidentalis*	1	10/20/1994	BOYD-BESTOR-BORZIK	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	545145	3636230	8.19
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1995	CLE NF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	554110	3627560	1.27

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California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1995	CLE NF	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	553190	3626850	1.55
California spotted owl	*Strix occidentalis occidentalis*	2	4/4/1995	BOYD-HASLINGER	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	554700	3627250	0.91
California spotted owl	*Strix occidentalis occidentalis*	1	6/2/1995	BOYD-HASLINGER	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	554700	3627250	0.91
California spotted owl	*Strix occidentalis occidentalis*	1	8/1/1995	BOYD-HASLINGER	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	553120	3626800	1.57
California spotted owl	*Strix occidentalis occidentalis*	1	8/23/1995	BOYD-HOOGERLAND	legal given only as	CNDDB, SPO_OBS	NO	N/A	N/A	538300	3645320	9.86
California spotted owl	*Strix occidentalis occidentalis*	2	5/10/2004	DAVIS	N/A	CNDDB, SPO_OBS	NO	N/A	N/A	552230	3636520	5.94
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1974	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	552772	3636100	5.56
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1979	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	549597	3633228	5.39
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1981	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553622	3636455	5.56
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1981	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553136	3636931	5.95
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1982	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553598	3636644	5.68
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1987	ROBERTS-ROBERTS	Territorial Male;Ele	USFS, cnf_tes_pts	NO	N/A	N/A	541069	3641946	8.71
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1989	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553153	3637526	6.29
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1989	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	549453	3639126	8.21
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	STEPHENSON	Pair;Elev = 5840 ft;	USFS, cnf_tes_pts	NO	N/A	N/A	554379	3635106	4.61
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	554440	3635289	4.71
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	VIA BOYD	Territorial Male;Ele	USFS, cnf_tes_pts	NO	N/A	N/A	537559	3623556	4.85
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	538566	3623613	5.18
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	548231	3637945	8.07

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California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1991	BOYD	Pair;Elev = 5700 ft;	USFS, cnf_tes_pts	NO	N/A	N/A	552699	3633846	4.36
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1991	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	548326	3637679	7.91
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	BOYD	Pair;Elev = 4600 ft;	USFS, cnf_tes_pts	NO	N/A	N/A	548259	3637856	8.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	548585	3638951	8.43
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1992	STEPHENSON	Pair;Elev = 5700 ft;	USFS, cnf_tes_pts	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1993	STEPHENSON	Territorial Male - E	USFS, cnf_tes_pts	NO	N/A	N/A	539356	3642983	8.76
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1994	boyd(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	545047	3636515	8.21
California spotted owl	*Strix occidentalis occidentalis*	3	1/1/1995	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	554673	3627262	0.93
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1996	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	553109	3627034	1.66
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1996	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	554597	3638720	6.74
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1974	Unknown	CUYAMACA SP; Elevati	USFS, wild_ftr_pt	NO	N/A	N/A	539409	3644816	9.81
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1975	K. Winter	AGUA DULCE CR; Eleva	USFS, wild_ftr_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1987	Unknown	P JUAQUAPIN CR; Elev	USFS, wild_ftr_pt	NO	N/A	N/A	541069	3641946	8.71
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1989	K. Winter	Morris Ranch; Elevat	USFS, wild_ftr_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	K. Winter	LA POSTA CR; Elevati	USFS, wild_ftr_pt	NO	N/A	N/A	554379	3635106	4.61
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	K. Winter	ESPINOSA CR; Elevati	USFS, wild_ftr_pt	NO	N/A	N/A	537559	3623556	4.85
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	K. Winter	NOBLE CYN; Elevation	USFS, wild_ftr_pt	NO	N/A	N/A	548259	3637856	8.02
California spotted owl	*Strix occidentalis occidentalis*	1	4/15/1993	Unknown	CUYAMACA SP; Elevati	USFS, wild_ftr_pt	NO	N/A	N/A	539356	3642983	8.76
California spotted owl	*Strix occidentalis occidentalis*	1	7/15/1993	K. Winter	Antone Canyon; Eleva	USFS, wild_ftr_pt	NO	N/A	N/A	554673	3627262	0.93
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1974	Descanso Atlas	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	552772	3636100	5.56

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1974	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	539409	3644816	9.81
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1975	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	4	1/1/1978	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	539409	3644816	9.81
California spotted owl	*Strix occidentalis occidentalis*	3	1/1/1985	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1987	Roberts & Roberts	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	541069	3641946	8.71
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1987	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	539409	3644816	9.81
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1989	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	3	1/1/1989	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	3	1/1/1990	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	Stephenson	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	554379	3635106	4.61
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	Descanso Atlas	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	554440	3635289	4.71
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1990	Boyd	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	537559	3623556	4.85
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	548259	3637856	8.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1990	Descanso Atlas	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	548231	3637945	8.07
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	Boyd	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	552699	3633846	4.36
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	1/1/1991	Descanso Atlas	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	548326	3637679	7.91
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	Boyd	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	548259	3637856	8.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1991	Descanso Atlas	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	548585	3638951	8.43

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1992	Stephenson	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	4/15/1993	Stephenson	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	539356	3642983	8.76
California spotted owl	*Strix occidentalis occidentalis*	2	5/19/1993	Boyd, McKelvey	Based on record in S	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	4	6/25/1993	Boyd, Stpehenson, DB	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	7/15/1993	C. Boyd	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	1	7/16/1993	Boyd, Bestor	From a record in Str	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1994	Descanso Atlas	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	553277	3633754	4.12
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1994	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	4/5/1994	K. Kirkpatrick	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	539356	3642983	8.76
California spotted owl	*Strix occidentalis occidentalis*	2	4/8/1994	C. Boyd, R. Hunt	From a record in Str	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	1	4/8/1994	C. Boyd, R. Hunt	Based on record in S	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	4/22/1994	C. Boyd, D. Bestor	From a record in Str	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	4	6/15/1994	Boyd, Bestor, Nelson	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	1	7/19/1994	Boyd, Versoza, Sarah	Based on record in S	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	10/20/1994	Boyd, Bestor, Borzik	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	548259	3637856	8.02
California spotted owl	*Strix occidentalis occidentalis*	1	10/20/1994	Boyd	Migrated from Forest	USFS, wild_obs_pt	NO	N/A	N/A	545047	3636515	8.21
California spotted owl	*Strix occidentalis occidentalis*	3	1/1/1995	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/1995	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	4/4/1995	C. Boyd, S. Haslinger	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	554673	3627262	0.93
California spotted owl	*Strix occidentalis occidentalis*	3	5/25/1995	C. Boyd	in historic nest	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
California spotted owl	*Strix occidentalis occidentalis*	2	6/2/1995	C. Boyd, S. Haslinger	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	554673	3627262	0.93
California spotted owl	*Strix occidentalis occidentalis*	3	6/3/1995	C. Boyd	1 Juv was dead	USFS, wild_obs_pt	NO	N/A	N/A	554673	3627262	0.93
California spotted owl	*Strix occidentalis occidentalis*	2	6/9/1995	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	8/1/1995	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552815	3627016	1.80
California spotted owl	*Strix occidentalis occidentalis*	2	5/30/1996	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	2	6/21/1996	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	7/18/1996	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552798	3633245	4.02
California spotted owl	*Strix occidentalis occidentalis*	2	7/22/1996	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	4/24/1997	C. Boyd	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/2004	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	1/1/2005	Unknown	Observation created	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	2	5/5/2005	K. Winter	near Escondido Rd ju	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	5/16/2005	K. Winter	near Escondido Rd ju	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
California spotted owl	*Strix occidentalis occidentalis*	1	6/10/2005	K. Winter	N/A	USFS, wild_obs_pt	NO	N/A	N/A	552819	3636146	5.57
Parry's tetracoccus	*Tetracoccus dioicus*	1	5/3/1988	Biologist	N/A	USFS TESPeos4-1	No	N/A	N/A	518225	3624419	5.09
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/11/1989	Biologist	Jacumba	CNDDB	NO	N/A	N/A	576306	3609386	0.69
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/11/1989	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	512632	3645288	3.37
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/11/1989	Biologist	Alpine	CNDDB	NO	N/A	N/A	512935	3627047	5.51
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	Alpine	CNDDB	NO	N/A	N/A	513227	3626214	5.83
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	Alpine	CNDDB	NO	N/A	N/A	517146	3623745	6.05

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	515569	3650132	6.35
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	El Cajon Mtn.	CNDDB	NO	N/A	N/A	515182	3650783	6.72
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	Alpine	CNDDB	NO	N/A	N/A	513165	3623891	7.10
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	Dulzura	CNDDB	NO	N/A	N/A	512380	3621953	8.39
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	Ramona	CNDDB	NO	N/A	N/A	517372	3654015	8.92
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/3/1998	Biologist	Ramona	CNDDB	NO	N/A	N/A	519277	3653925	9.13
Parry's tetracoccus	*Tetracoccus dioicus*	1	8/11/1998	Biologist	Dulzura	CNDDB	NO	N/A	N/A	522235	3620803	3.21
Parry's tetracoccus	*Tetracoccus dioicus*	1	5/14/2004	Biologist	Tecate	CNDDB	NO	N/A	N/A	532918	3607219	3.84
Two-striped garter snake	*Thamnophis hammondii*	1	3/21/2009	John and Melanie Dicus	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-058	Y-1	534986	3613438	0.00
Two-striped garter snake	*Thamnophis hammondii*	1	3/21/2009	John and Melanie Dicus	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-058	Y-2	535077	3613420	0.00

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
Two-striped garter snake	*Thamnophis hammondii*	1	3/21/2009	John and Melanie Dicus	Observed during Chambers Group 2009 Surveys for CAGN, QCB, and USFS Sensitive Animals as well as biological monitoring as part of SDG&E's Sunrise Powerlink Project	Chambers Group, Sens_Species_Observed	YES	MS-058	Y-3	535114	3613413	0.00
Two-striped garter snake	*Thamnophis hammondii*	1	5/15/1995	Biologist	Barrett Lake	CNDDB	NO	N/A	N/A	526103	3615473	0.80
Two-striped garter snake	*Thamnophis hammondii*	1	12/28/2001	Biologist	Campo	CNDDB	NO	N/A	N/A	548248	3607795	2.98
Two-striped garter snake	*Thamnophis hammondii*	1	12/12/2002	Biologist	San Pasqual	CNDDB	NO	N/A	N/A	508644	3657894	8.67
Two-striped garter snake	*Thamnophis hammondii*	1	4/1/2004	Biologist	San Vicente Reservoi	CNDDB	NO	N/A	N/A	501349	3638595	2.33
Two-striped garter snake	*Thamnophis hammondii*	1	4/1/2004	Biologist	Poway	CNDDB	NO	N/A	N/A	490408	3638394	4.73
Two-striped garter snake	*Thamnophis hammondii*	1	4/1/2004	Biologist	La Jolla	CNDDB	NO	N/A	N/A	484868	3634613	8.89
Two-striped garter snake	*Thamnophis hammondii*	1	11/3/2004	Biologist	Monument Peak	CNDDB	NO	N/A	N/A	550272	3638253	7.48
Two-striped garter snake	*Thamnophis hammondii*	1	9/15/2009	Biologist	Viejas Mountain	CNDDB	NO	N/A	N/A	525904	3625312	0.80
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	534345	3626995	2.06
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	533193	3624546	3.47
Two-striped garter snake	*Thamnophis hammondii*	2	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	541749	3632378	5.34
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	541833	3632610	5.43
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	542474	3632968	5.87
Two-striped garter snake	*Thamnophis hammondii*	2	1/1/1993	(Descanso Atlas)	N/A	USFS, cnf_tes_pts	NO	N/A	N/A	542659	3633118	6.01
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1999	E Ervin,B Yang	observed road kill o	USFS, cnf_tes_pts	NO	N/A	N/A	548827	3618121	0.39

Common Name	Scientific Name	Numbers of Observations	Date of Observations	Observer	Area Description	Source of Data	Mapbook Boundary	Mapbook Page	Occurrence Identification	UTM Easting	UTM Northing	Distance From Project ROW (Miles)
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1999	E Ervin	on sandy bank along	USFS, cnf_tes_pts	NO	N/A	N/A	547548	3620497	1.06
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/1999	E Ervin,A Ervin	alongside creek	USFS, cnf_tes_pts	NO	N/A	N/A	547430	3620416	1.14
Two-striped garter snake	*Thamnophis hammondii*	1	1/1/2003	B. Hollingsworth, D. Wood	SDNHM specimen, SD F	USFS, cnf_tes_pts	NO	N/A	N/A	540563	3615030	0.97
Two-striped garter snake	*Thamnophis hammondii*	2	6/1/1993	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	541749	3632378	5.34
Two-striped garter snake	*Thamnophis hammondii*	1	6/1/1993	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	541833	3632610	5.43
Two-striped garter snake	*Thamnophis hammondii*	1	6/1/1993	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	542474	3632968	5.87
Two-striped garter snake	*Thamnophis hammondii*	2	6/1/1993	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	542659	3633118	6.01
Two-striped garter snake	*Thamnophis hammondii*	1	6/16/1993	(Descanso Atlas)	Site ID = 458 Detect	USFS, wild_obs_pt	NO	N/A	N/A	533193	3624546	3.47
Two-striped garter snake	*Thamnophis hammondii*	1	9/1/1993	(Descanso Atlas)	Actual date not know	USFS, wild_obs_pt	NO	N/A	N/A	534345	3626995	2.06
Two-striped garter snake	*Thamnophis hammondii*	1	6/15/1999	E Ervin,B Yang	Note indicates adult	USFS, wild_obs_pt	NO	N/A	N/A	548827	3618121	0.39
Two-striped garter snake	*Thamnophis hammondii*	1	7/2/1999	E Ervin,A Ervin	Note indicates juven	USFS, wild_obs_pt	NO	N/A	N/A	547430	3620416	1.14
Two-striped garter snake	*Thamnophis hammondii*	1	7/29/1999	E Ervin	Note indicates adult	USFS, wild_obs_pt	NO	N/A	N/A	547548	3620497	1.06
Two-striped garter snake	*Thamnophis hammondii*	1	5/9/2003	B. Hollingsworth, D. Wood	Locational accuracy	USFS, wild_obs_pt	NO	N/A	N/A	540563	3615030	0.97

*N/A: Not Available.

APPENDIX E – CUMULATIVE PROJECT LIST

List of Cumulative Projects for Sunrise Powerlink Project Related to CNF Lands

Project Name	Project Description	Project Type	Project Location
Within CNF Lands - Within 5 miles of Project Route			
Oliver	Subdivide 148 acres into 47 lots.	Residential	East of Pine Valley, Pine Valley, San Diego County, California.
Kemerko	Subdivide 94.06 acres into four single-family residential lots.	Residential	Mountain View Road, Descanso (APN 399-030-29).
Kenyon	Subdivide 15.88 acres into three parcels.	Residential	8579 Pine Creek, Pine Valley.
Top of the Pines	Subdivide 17.4 acres into four residential lots.	Residential	Corte Madera Road, Pine Valley.
Japatul Valley Road Subdivision	Construct a low-density subdivision with four-to eight-acre lots.	Residential	Northeast of the I-8 and Japatul Valley Road (SR79) intersection, Descanso.
Pine Creek Ranch	Subdivide 109 acres into 19 single family residential lots and one 6.4-acre lot leased by Pine Valley Municipal Water District.	Residential	East side of Old Highway 80, just north of Pine Valley Road, Pine Valley San Diego County, California.
Pine Valley Estates	Subdivide a total of 38 acres into 20 single-family residential lots on 9.1 acres.	Residential	Pine Valley Boulevard, Pine Valley (APN 410-120-19) San Diego County, California.
Harbison Canyon	Subdivide two acres into three lots.	Residential	8657 Harbison Canyon Road at Galloway Place, near Alpine Heights.
Volli	Subdivide 40 acres into four single-family residential lots.	Residential	Old Highway 80 and La Posta Road, near Boulder Oaks.
Temporary Wind Measurement Testing	Proposal to authorize temporary wind measurement towers on the north side of Interstate 8. Testing will be three years or less in duration. Testing sites will be located to avoid sensitive resources.	Special Use Management	STATE - California. COUNTY - San Diego. LEGAL - Township 15 South, Range 2 East, Sections 1 and 36; Township 15 South, Range 3 East, Section 31; Township 15 South, Range 3 East, Section 6. In the vicinity of Viejas Creek and Sweetwater.
Conejos Road Special Use Permit	The Descanso Ranger District proposes to authorize a special use permit to the Viejas band of Kumeyaay Indians for the use of Conejos Road to access the Capitan Grande Indian Reservation.	Special Use Management; Road Management	Between Viejas Indian Reservation and Capitan Grande Indian Reservation, San Diego County.
Old Highway 80 and Pine Creek Road Intersection Improvements	Old Highway 80 shoulder reconstruction and Striping of bike lanes in the Guatay area.	Transportation	Old Highway 80 from State Highway 79 to Pine Creek. Road

Project Name	Project Description	Project Type	Project Location
Reconstruct Caltrans Maintenance Building Project	Reconstruction of an existing Caltrans maintenance building-Part of the Ten-Year State Highway Operations and Protection Plan.	Transportation	along Interstate-8 in Boulevard near Ribbonwood/I-8/State Route SR-94.
Sweetwater and Viejas Creek Fuels Treatment Project	The Descanso RD proposes fuel treatments in the vicinity of Viejas Creek and Sweetwater to reduce vegetation levels.	Vegetation Management (other than forest products) – Fuels Management	STATE - California. COUNTY - San Diego. LEGAL - Township 15 South, Range 2 East, Sections 1 and 36; Township 15 South, Range 3 East, Section 31; Township 15 South, Range 3 East, Section 6. In the vicinity of Viejas Creek and Sweetwater.
Japatul Watershed Improvement Project	Stabilize and control channel erosion.	Watershed management	UNIT - Descanso Ranger District. STATE - California. COUNTY - San Diego. LEGAL - T 15 S, R 4 E, Sec. 36. Descanso Ranger District.
Within CNF Lands - Within 10 miles of Project Route			
Mt. Laguna Water Well	Drill new water well on Mt. Laguna to provide supplemental water to the existing Forest Service managed Laguna Water System.	Facility management	Near Los Rosalis Canyon on Laguna Mountain.
Laguna and Laguna Meadow Allotments Range Analysis	Analyze the effects of livestock grazing on the Laguna and Laguna Meadow allotments and to develop new allotment management plans that are consistent with the current Cleveland National Forest Land Management Plan.	Research	Laguna Mountain
The Slope	Subdivide 32.1 acres into four single-family residential lots.	Residential	Southeast of Pine Creek Road-Old Highway 80 intersection, Pine Valley.
Pine Valley Creek Soil Sample Collection Project	Proposes to extend existing authorization for soil sample collection along Pine Valley Creek for research into bacteria in the Tijuana River watershed.	Watershed Management – Research	STATE - California. COUNTY - San Diego Range 5 East, Southwest 1/4 of Section 18. Township 15 South, Range 4 East, Northeast 1/4 of Section 13 and 24. Along Pine Valley Creek on the Descanso Ranger District.

Project Name	Project Description	Project Type	Project Location
Within CNF Lands - Over 10 miles from Project Route			
Descanso Ranger District Mine Safety Closure Project	Undertake mine closures for public safety at sites in the vicinity of Noble Canyon.	Land Management	T 10 S, R 3 E, Sec. 14. Indian Flats Road (9S05).
Decommissioning Unauthorized Routes in the La Posta, Long Valley, and Bear Valley areas	Install barriers, gates, and fencing to protect locations in the La Posta, Long Valley, and Bear Valley areas from impacts resulting from unauthorized motor vehicle use.	Land Management	In the vicinity of the La Posta, Long Valley, and Bear Valley areas on the Descanso Ranger District, San Diego County.
Within CNF Lands - Throughout Descanso District			
Gold-spotted Oak Borer Fungus and Stress Study	To determine effects of fungi and GSOB on oak mortality, the Descanso RD proposes to allow long-term plots that can be revisited for sampling and symptom/mortality development. Project has been modified to exclude cutting down and removal of trees.	Research	Various locations across the Descanso Ranger District, San Diego County.
San Diego Gas & Electric Master Special Use Permit	CNF proposes to issue a master permit for the operation and maintenance of existing electric distribution and transmission lines, appropriate access roads, and other appurtenant facilities.	Utilities	Multiple locations within the Trabuco, Palomar and Descanso Ranger Districts, Cleveland National Forest, California.
Thing Valley Spillway Improvements	Proposal to authorize and improve an existing previously authorized spillway on national forest lands that serves a small, earthen dam on private land. Soil erosion concerns make improvements necessary.	Watershed Management – Special Use Management	STATE - California. COUNTY - San Diego. Descanso Ranger District.
Outside of CNF - Within 1 mile of CNF Lands Boundary and Project Route			
Chocolate Mountain	Subdivide 245 acres into 96 single-family residential estate lots.	Residential	Chocolate Summit Drive, Alpine.
Viejas Hills Estates	Subdivide 180 acres into 25 single-family residential lots and 70 acres remainder parcel.	Residential	West Victoria Drive and along north side of Otto Avenue, Alpine.
Outside of CNF – Within 2 miles of CNF Lands Boundary and Project Route			
La Posta Mountain Warfare Training Facility	N/A	Military	50 miles east of San Diego, near the city of Campo.

Project Name	Project Description	Project Type	Project Location
Outside of CNF - Within 5 miles of CNF Lands Boundary and Project Route			
Golden Acorn Casino and Travel Center	Expansion of the existing Golden Acorn Casino and Travel Center with 17,800 square feet of additional gaming and non-gaming casino area, construction of a 3-story 150-room hotel, 900-space parking structure, RV Park, up to two wind turbines, and improvements to the water and wastewater systems.	Commercial Development	1800 Golden Acorn Way, Campo, CA 91906, off of Old Highway 80 at the Interstate 8/Crestwood Road exit, San Diego County.
Outside of CNF - Over 10 miles from CNF Lands Boundary and Project Route			
Dixieland Substation	Building a new single circuit 230kV Power line. The approximate length of the new 230 kV line will be 8.5 miles.	Public Utilities - Energy	Between Imperial Valley Substation and the IV Dixieland Substation, Imperial Valley Ca.
ENPEX Power Plant	Construct a 750 megawatt combined-cycle natural gas fired power plant.	Public Utilities - Energy	MCAS Miramar property near the SDG&E Sycamore Canyon Substation.
Stirling Energy Systems and SDG&E Solar Power Project	Contract between SES and SDG&E to purchase and provide 300 and 900 MW of solar power from 12,000 solar dishes on approximately 3 square miles.	Public Facilities and Utilities	Imperial Valley. Southeast of the Plaster City sheetrock facility and north of I-8; approximately two miles west of the proposed route (included because of size/regional importance) Imperial County California.
West-Wide Energy Corridor Project	The Energy Policy Act of 2005 (the Act), Public Law 109-58 (H.R. 6), enacted August 8, 2005, directs the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior (the Agencies) to designate under their respective authorities corridors on federal land in 11 Western States for oil, gas and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors).	Public Facilities and Utilities	Various location within the CNF. Orange and San Diego Counties.

Project Name		Project Description	Project Type	Project Location
La Rumorosa Wind Project	La Rumorosa Wind Area	Possible new wind generation project. A 1,250 MW wind project in Mexico, as many as 125 wind turbines to be installed, transmission lines into the U.S., and a new Jacumba/ ECO substation.	Public Utilities - Energy	Mexico, located northeast of the town of Jacumba
	SDG&E East County (ECO) Substation Project	Construction of a 500/230/138 kilovolt (kV) substation in Eastern San Diego County; Construction of the Southwest Power link (SWPL) loop-in; Construction of a 138 kV 13.3 mile transmission line between the proposed Jacumba/ECO Substation and the rebuilt Boulevard Substation; Rebuild of the existing Boulevard Substation; Rebuild of the White Star Communication Facility.	Public Utilities - Energy	In the town of Jacumba located approximately 0.5 mile north of the United States–Mexico border and 0.5 mile west of the Imperial County border.
	CAISO Project #215	420 MW wind power plant to connect with the Jacumba/ECO Substation; proposed online in 2011, but currently scheduled for end of 2014.	California Independent System Operator Energy-Generation	La Rumorosa/Baja CA; exact location unknown.
	CAISO Project #183	300 MW wind power plant to connect with the Jacumba/ECO Substation; proposed online in 2009, but currently scheduled for July 2010.	California Independent System Operator Energy-Generation	La Rumorosa/Baja CA; exact location unknown.
	CAISO Project #159a	400 MW wind power plant to connect with the Jacumba/ECO Substation; proposed online in June 2010, but currently scheduled for end of May 2013.	California Independent System Operator Energy-Generation	La Rumorosa/Baja CA; exact location unknown.
	CAISO Project #32	201 MW wind power plant to connect with the Boulevard Substation; scheduled for November 2012.	California Independent System Operator Energy-Generation	Near Boulevard (south of Sunrise Powerlink approved route), San Diego County; exact location unknown.
	CAISO Project #106a	160 MW wind power plant to connect with the Jacumba/East County (ECO) Substation; scheduled online at the end of June 2012.	California Independent System Operator Energy-Generation	Near Boulevard (south of Sunrise Powerlink approved route), San Diego County; exact location unknown.

Project Name		Project Description	Project Type	Project Location
Crestwood Wind Project	Crestwood Wind Project	Development of up to 791 MW of wind generation. Possible transmission connection via the Boulevard-Crestwood 69 kV transmission line or existing SWPL. This would include the 17,000-acre Pacific Wind Iberdrola (Tule Wind) Project in McCain Valley.	Public Utilities - Energy	Crestwood/Boulevard/ McCain Valley area; San Diego County.
	Tule Wind Energy Project	Proposal to develop the Tule Wind Farm, a 200 MW wind energy generating facility. The project includes turbines, access roads, electrical collector and transmission lines, a substation, meteorological towers, storage yards, and operations/ maintenance facilities, all to be constructed in one phase.	Public Facilities and Utilities	McCain Valley in eastern San Diego County, approximately 60 miles east of San Diego, near Boulevard, California.
	Iberdrola	Install additional MET towers on the Tule Wind Energy Project.	Public Utilities - Energy	McCain Valley, Eastern San Diego County.
National Quarries (El Centro Resource Area)		Wind testing and monitoring.	Public Utilities - Energy	Eastern San Diego County. T14S/R5E and T13S/R4E.
Rancho Encantada		Rancho Encantada is a new community that is planned for limited residential development in the future. A total of 935 homes are proposed for the 2,658 acre community.	Residential	East of Scripps Ranch, north of Marine Corps Air Station Miramar, west of the Goodan Ranch / Sycamore Canyon County Open Space Preserve, and south of the City of Poway, San Diego County, California.

CHAMBERS GROUP

APPENDIX F – MITIGATION MEASURES FOR BIOLOGICAL RESOURCES

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-1a: Provide restoration/compensation for impacted sensitive vegetation communities.** Surface-disturbing components of the project shall be located in previously disturbed areas or where habitat quality is poor to the extent possible, and disturbance of vegetation and soils shall be minimized. Temporary construction mats may be used to minimize vegetation and soil disturbance only where deemed appropriate by the qualified biologist (see Mitigation Measure B-1c). The construction mats shall not be left on the ground for more than three weeks. Use of construction mats shall be considered a temporary impact to vegetation and shall be mitigated in accordance with this mitigation measure. If avoidance of sensitive vegetation communities is not feasible due, for example, to physical or safety constraints, the Applicant shall restore temporarily impacted areas to pre-construction conditions following construction (or emergency repairs) and shall permanently block off all public access to them, and/or shall purchase/dedicate suitable habitat for preservation to off-set permanently impacted areas. Restoration of some vegetation communities in temporarily impacted areas may not be possible if those areas are subject to vegetation management to maintain proper clearance between transmission lines and vegetation. In those instances, the mitigation shall consist of offsite acquisition and preservation of the vegetation community instead. Any area that can be preserved as intact or restored habitat, or if it contains any species (plant or animal) that require project-related compensatory mitigation will qualify as offsite mitigation lands. Restoration involves recontouring the land, replacing the topsoil (if it was collected), planting seed and/or container stock, and maintaining (*i.e.,* weeding, replacement planting, supplemental watering, etc.) and monitoring the restored area for a period five years (or less if the restoration meets all success criteria). Restoration in ABDSP shall be maintained and monitored for a minimum of five years. The success of the restoration is usually based on how the habitat compares with similar, nearby, undisturbed habitat. Any restoration efforts would be subject to a Habitat Restoration Plan approved by the CPUC, BLM, Wildlife Agencies, State Parks (for restoration in ABDSP), and USDA Forest Service (for alternatives with restoration on National Forest lands). Mitigation ratios and mitigation acreages for construction within authorized limits are provided in Table D.2-7 for the Proposed Project (see Impacts to Vegetation Communities and Required Mitigation tables in alternatives sections for the alternatives). The mitigation ratios also apply to impacts from emergency repairs. In cases where the impacts to sensitive vegetation communities occur on lands already in use as mitigation for other projects, the mitigation ratios shall be doubled, as is standard practice in San Diego County.
	— **(B-1a)** All limits of construction shall be delineated with orange construction fencing. SDG&E shall coordinate with the authorized officer for the applicable federal, State, or local land owner/ administrator at least 60 days before construction in order to determine if gates shall be installed on access roads, especially trails that would be dually used as access roads, to prevent unauthorized vehicular access to the ROW. Gate installation shall be required at the discretion of the land management agency. On trails proposed for dual use as access roads, gates shall be wide enough to allow horses, bicycles, and pedestrians to pass through. SDG&E shall document its coordination efforts with the administering agency of the road/trail and provide this documentation to the CPUC, BLM, and all affected jurisdictions 30 days prior to construction. Signs prohibiting unauthorized use of the access roads shall be posted on the installed gates. To control unauthorized use of project access roads by off-road vehicle enthusiasts, SDG&E shall provide funding to land management entities responsible for areas set aside for habitat conservation to provide for off-road vehicle enforcement patrols. The responsible land management entities will formulate what funding is reasonable to control unauthorized use of project access roads.
	— **(B-1a)** Any impacts associated with unauthorized activity (*e.g.,* exceeding approved construction footprints) shall be mitigated at a 5:1 ratio (5.5:1 in FTHL MA). Restoration of the unauthorized impacts shall be credited at a 1:1 ratio (*i.e.,* mitigated by in-place habitat restoration); the remaining 4:1 (or 4.5:1 in FTHL MA) shall be acquired off site.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

— **(B-1a)** Areas to be restored shall include all areas temporarily impacted by construction, such as tower construction sites, laydown/staging areas, temporary access and spur roads, and existing tower locations where towers are removed. Where onsite restoration is planned, the Applicant shall identify a qualified Habitat Restoration Specialist to be approved by the CPUC, BLM, State Parks (for restoration in ABDSP), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies. The Habitat Restoration Specialist shall prepare and implement a Habitat Restoration Plan, for restoring temporarily impacted sensitive vegetation communities, to be approved by the CPUC, Wildlife Agencies, BLM, State Parks (for ABDSP restoration), and USDA Forest Service (for National Forest land restoration). The Applicant shall work with the CPUC, BLM, Wildlife Agencies, and State Parks until a plan is approved by all. This Habitat Restoration Plan must be approved in writing by the above-listed agencies prior to the initiation of any vegetation disturbing activities. Hydroseeding, drill seeding, or an otherwise proven restoration technique shall be utilized on all disturbed surfaces using a locally endemic native seed mix approved by the CPUC, Wildlife Agencies, BLM, State Parks (for ABDSP restoration), and USDA Forest Service (for National Forest land restoration).

The Habitat Restoration Plan shall incorporate Desert Bioregion Revegetation/Restoration Guidance measures for restoration of temporary impacts to desert scrub and dune habitats. These measures generally include alleviating soil compaction, returning the surface to its original contour, pitting or imprinting the surface to allow small areas where seeds and rain water can be captured, planting seedlings that have acquired the necessary root mass to survive without watering, planting seedlings in the spring with herbivory cages, broadcasting locally collected seed immediately prior to the rainy season, and covering the seeds with mulch.

The Habitat Restoration Plan shall also incorporate the measures identified in the May 25, 2006 Memorandum of Understanding among Edison Electric Institute, USDA Forest Service, BLM, USFWS, National Park Service, and the Environmental Protection Agency (Edison Electric Institute, et al., 2006) where applicable. The MOU discusses vegetation management along ROWs for electrical transmission and distribution facilities on federal lands. The major provisions of the MOU include reducing soil erosion and water quality impacts; promoting local ecotypes in revegetation projects; planting native species and protecting rare species; and reducing the introduction of non-native, invasive or noxious plant species to the ROWs. The MOU can be viewed online at http://www.eei.org/industry_issues/environment/land/vegetation_management/EEI_MOU_FINAL_5-25-06.pdf.

The following habitat restoration requirements are not included in the MOU described above. The restoration of habitat shall be maintained and monitored for five years after installation by an experienced, licensed Habitat Restoration Contractor, or until established success criteria identified in the Restoration Plan (specified percent cover of native and non-native species, species diversity, and species composition as compared with an undisturbed reference site) are met. Maintenance and monitoring for restoration in ABDSP shall be for a minimum of five years, even if established success criteria are met before the end of five years. Maintenance and monitoring shall be conducted following a prescribed schedule to assess progress and identify potential problems with the restoration. Remedial action (*e.g.,* additional planting, weeding, erosion control, use of container stock, supplemental watering, etc.) shall be taken by an experienced, licensed Habitat Restoration Contractor during the maintenance and monitoring period if necessary to ensure the success of the restoration. If the restoration fails to meet the established success criteria after the maintenance and monitoring period, maintenance and monitoring shall extend beyond the five-year period until the criteria are met or unless otherwise approved by the CPUC, BLM, State Parks (for ABDSP restoration), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies. For areas where habitat restoration cannot meet mitigation requirements, as determined by the Habitat Restoration Specialist in coordination with CPUC, BLM, State Parks (for ABDSP restoration), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies, offsite purchase and dedication of habitat shall be provided at the mitigation ratios provided in Table D.2-7 for the Proposed Project (see Impacts to Vegetation Communities and Required Mitigation tables in alternatives sections for the alternatives) or as otherwise required by the Wildlife Agencies, ABDSP, or USDA Forest Service (supersedes the mitigation ratios in BIO-APM-1).

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-1a) Tree Mitigation.** Mitigation for loss of native trees or native tree trimming shall be provided by (1) acquiring and preserving habitat within which the trees occur and/or (2) restoring (*i.e.,* planting) trees on land that would not be subject to vegetation clearing (either in the Applicant's ROW and/or on land acquired and preserved). Any land to be used for this mitigation shall be approved by the CPUC, BLM, State Parks (for ABDSP restoration), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies. For habitat acquisition and preservation, the mitigation ratios shall follow those in Table D.2-7 for the Proposed Project (see Impacts to Vegetation Communities and Required Mitigation tables in alternatives sections for the alternatives). For example, removal of coast live oak trees (that occur in coast live oak woodland) shall require mitigation at a 3:1 ratio based on the permanent impact to the summed acreage of all individual coast live oak trees impacted. Therefore, if the total acreage of all individual coast live oak trees in coast live oak woodland impacted is 10 acres, then 30 acres of coast live oak woodland shall be acquired and preserved. For all trimmed native trees, the trees shall be monitored for a period of three years. If a trimmed tree declines or suffers mortality during that period, the tree shall be replaced in-kind (by species) at a 2:1 or 5:1 ratio as recommended by the CDFG (see below). If a tree does not decline or suffer mortality, no mitigation shall be required.
	— **(B-1a)** For restoration (planting trees), these guidelines, based on recommendations from the CDFG, shall be followed. Native trees that are removed shall be replaced in-kind (by species) as follows. • Trees less than five inches diameter at breast height (DBH) shall be replaced at 3:1 • Trees between five and 12 inches DBH shall be replaced at 5:1 • Trees between 12 and 36 inches shall be replaced at 10:1 • Trees greater than 36 inches shall be replaced at 20:1 • Native trees that are trimmed shall be replaced in-kind (by species) as follows. • Trees less than 12 inches DBH shall be replaced at 2:1 • Trees greater than 12 inches DBH shall be replaced at 5:1 All restoration shall be maintained and monitored for a minimum of 10 years. The restoration shall be directed according to a Habitat Restoration Plan approved by the CPUC, BLM, State Parks (for ABDSP restoration), USDA Forest Service (for National Forest land restoration), and the Wildlife Agencies.
	— **(B-1a) Mitigation Parcels/Habitat Management Plans.** All offsite mitigation parcels shall be approved by the CPUC, BLM, Wildlife Agencies, State Parks (for impacts to ABDSP), and USDA Forest Service (for alternatives with impacts to National Forest lands) and must be acquired or their acquisition must be assured before the line is energized. To demonstrate that such parcels shall be acquired, SDG&E shall submit a Habitat Acquisition Plan at least 120 days prior to any ground disturbing activities. The Plan shall be submitted to the CPUC, BLM, the Wildlife Agencies, State Parks (for impacts in ABDSP) and USDA Forest Service (for impacts on National Forest Lands) for review and approval, and shall include, but shall not be limited to: legal descriptions and maps of all parcels to be acquired; schedule that includes phasing relative to impacts; timing of conservation easement recording; initiation of habitat management activities relative to acquisition; and assurance mechanisms (*e.g.,* performance bonds to assure adequate funding) for any parcels not actually acquired prior to vegetation disturbing activities.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-1a)** A Habitat Management Plan shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) for all acquired offsite mitigation parcels. The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any vegetation disturbing activities. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, State Parks, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired, offsite mitigation parcels. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all mitigation parcels approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) • Baseline biological data for all mitigation parcels • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to National Forest lands) to provide in-perpetuity management • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity) • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-6, G-CM-7, G-CM-12, G-CM-14, G-CM-15, G-CM-16, G-CM-17, G-CM-21, G-CM-22, G-CM-26, G-CM-28, G-CM-29, and G-CM-34.
Location	All areas disturbed by construction activities.
Monitoring/Reporting Action	BLM and CPUC shall approve habitat restoration plans, habitat acquisition plans, and long-term habitat management plans, and ensure their implementation. CPUC/BLM biological monitor shall confirm that proposed habitat restoration mitigation plans are implemented.
Effectiveness Criteria	Habitat restoration plans are implemented and meet success criteria. Long-term habitat management is provided for all mitigation sites.
Responsible Agency	BLM, CPUC, USFWS, CDFG, State Parks (for mitigation lands in ABDSP), and USDA Forest Service (for mitigation lands on USFS land).
Timing	Pre-, during and post construction.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

Interpretation & Approach	7/2/09: SDG&E will provide all documentation of correspondence with agencies regarding BHS mitigation as part of the Mitigation Land Plan. The CDFG Section 2081 is not required for Segment 4, Mountain Springs Grade since BHS are not covered under this take permit. Restoration, including tree mitigation, which references ABDSP is not applicable to FESSR. Application is for mitigation parcels in the ABDSP. 8/20/09: Review with Aspen, Helix, and BLM. B-1a-1: It was agreed upon that 'permanently blocking off all public access' was in reference to temporary access/spur/fly yards in order to prevent a situation where the public may access sensitive vegetation communities where prior to the project work, they had not. Vertical mulching was suggested as an acceptable method of restoring temporarily impacted areas in the desert. Vertical mulching is the practice of replanting plants (either dead or live) that are removed during construction. The replanted plants are not irrigated and those that may be alive when replanted are allowed to die. 8/20/09: B-1a-1: It was agreed that recontouring the land for the purposes of restoration need not apply to previously disturbed areas where the topography doesn't match the surrounding topography. Restored areas should blend naturally into the surrounding habitat, both in terms of vegetation and topography. 8/20/09: 'Restoration of "some" vegetation types' as stated in B-1a section 1 was included to acknowledge that in certain areas due to site-specific conditions, only some of the vegetation types will be able to be revegetated while other vegetation types may not be able to be re-vegetated and will need to be mitigated off-site. This will be addressed on a site by site basis. 8/20/09: Flagging is acceptable as a delineation method instead of orange fencing. Orange fencing can be limited to unique situations. 8/20/09: Off-site mitigation parcels need not be acquired prior to construction, however, the assurance that there are willing sellers for mitigation lands is necessary. Mitigation parcels must be secured prior to energization. 8/20/09: The purpose of baseline biological data for off-site mitigation parcels is to prove that proposed mitigation land is appropriate mitigation for impacted areas. Proposed mitigation land need not be exactly representative of areas that are impacted. (USFWS/CDFG will decide this.) 8/31/09: Permanent impact areas will be restored at the end of the construction process in accordance with the approved Storm water Pollution Prevention Plan (SWPPP) documents. 10/22/09: In summary, the EIR/EIS includes the following milestones with regard to meeting biology mitigation parcel preservation requirements: • Habitat Acquisition Plan: 120 days prior to any ground disturbing activities • Habitat Management Plan: prior to initiation of any vegetation disturbing activities • Acquisition or assurance of acquisition of parcels: prior to energizing the transmission line. Following are recommendations for how SDG&E can best proceed and meet these requirements. 1. SDG&E submitted a draft Habitat Acquisition Plan on June 24, 2009, however, this habitat acquisition plan will need to be resubmitted with the parcels proposed for mitigation more narrowly defined. The following information must be included: legal descriptions and maps, schedule that includes phasing relative to impacts, timing of conservation easement recording, initiation of habitat management activities relative to acquisition and assurance mechanisms. The Habitat Acquisition Plan should be in final or close to final form in February 2010, which is 120 days prior to the beginning of most of the construction. It is noted that SDG&E received many comments on the Habitat Acquisition Plan submitted in June 2009, and that the final Habitat Acquisition Plan may be significantly revised to adequately address those comment. 2. A final Habitat Management Plan will be required prior to the June 2010 start date for the majority of the project. It is anticipated that all the mitigation parcels identified in the Habitat Acquisition Plan (expected in February 2010) will have been agreed to and that the required elements of the HMP for all the mitigation sites can be completed prior to the start of construction in June 2010.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-1c: Conduct biological monitoring.** Monitoring shall be provided by a qualified biologist approved by the CPUC, BLM, State Parks (for monitoring in ABDSP), USDA Forest Service (for alternatives that require monitoring on National Forest lands), and the Wildlife Agencies to ensure that all impacts occur within designated limits. Monitoring entails communicating with contractors, taking daily notes, and ensuring that the requirements of the APMs and mitigation measures are being met by being present during construction activities including all initial grubbing and clearing of vegetation. Additionally, a qualified biologist employed by SDG&E shall be present during maintenance involving ROW repair requiring ground disturbance (*i.e.,* grading/repair of access road and work areas and spot repair of areas subject to flooding or scouring). Biological monitoring of these maintenance activities is to prevent impacts to vegetation communities or wildlife habitat not within the permanent project impact footprint or to record and report unauthorized impacts outside the footprint to the CPUC, BLM, State Parks (for monitoring in ABDSP), USDA Forest Service (for alternatives that require monitoring on National Forest lands), and the Wildlife Agencies to ensure the unauthorized impacts are mitigated in accordance with Mitigation Measure B-1a. The qualified biologist shall conduct monitoring for any area subject to disturbance from construction and the maintenance activities listed above (or access roads used during maintenance activities in the case of vernal pools/water-holding basins; see Mitigation Measure B1-b). The qualified biologist shall perform periodic inspections of construction once or twice per week, as defined by the Wildlife Agencies, depending on the sensitivity of the resources. The qualified biologist shall send weekly monitoring reports to the CPUC and BLM and shall record any reduction or increase in construction impacts so that mitigation requirements can be revised accordingly. The final impact/mitigation calculations shall be submitted to the CPUC, BLM, State Parks (for monitoring in ABDSP), USDA Forest Service (for alternatives that require monitoring on National Forest lands), and the Wildlife Agencies for review and approval. The qualified biologist shall send annual monitoring reports of maintenance activities to the CPUC, BLM, State Parks (for monitoring of maintenance activities in ABDSP), and USDA Forest Service (for alternatives that require monitoring of maintenance activities on National Forest lands) that describe the types of maintenance that occurred, at what locations they occurred, and whether or not there were unauthorized impacts that require mitigation. The Applicant, its contractors and subcontractors, and their respective project personnel, shall refer all environmental issues, including wildlife relocation, sick or dead wildlife, hazardous waste, or questions about environmental impacts to the qualified biologist. Experts in wildlife handling (*e.g.,* Project Wildlife) may need to be brought in by the qualified biologist for assistance with wildlife relocations.
	— **(B-1c)** The qualified biologist shall have the authority to issue stop work orders if any part of the mitigation measures or APMs are being violated. The qualified biologist shall immediately notify the CPUC, BLM, State Parks (for monitoring in ABDSP), USDA Forest Service (for alternatives that require monitoring on National Forest lands), the Wildlife Agencies, and SDG&E of any significant events, including impacts outside the construction zone or maintenance impacts outside the authorized permanent impact footprints if they are discovered during construction or monitoring of maintenance activities. Reinitiation of work following a stop work order shall only occur when the CPUC, BLM, State Parks (for impacts in ABDSP), USDA Forest Service (for alternatives with impacts on National Forest lands), and the Wildlife Agencies are satisfied that the impacts have been fully documented, that compensation for these impacts shall be made, and that any additional protection measures they deem necessary shall be undertaken.
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-1.
Location	Entire project area.
Monitoring/Reporting Action	CPUC/BLM biological monitor shall oversee monitoring and ensure compliance with APMs and mitigation measures. The biological monitor shall submit weekly monitoring reports to SDG&E during construction. The biological monitor shall submit weekly reports to the CPUC and BLM during construction and throughout the maintenance period. Reports shall include a summary of activities and tracking of the APM and mitigation measure requirements. The biological monitor shall submit a final report of impact/mitigation calculations to the CPUC, BLM, State Parks (for monitoring in ABDSP), USDA Forest Service (for alternatives that require monitoring on National Forest lands), and the Wildlife Agencies.
Effectiveness Criteria	Successful avoidance of unforeseen impacts and compliance with APMs and mitigation measures.
Responsible Agency	BLM, CPUC, USFWS, CDFG, State Parks (for ABDSP land), and USDA Forest Service (for USFS land).

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

Timing	Pre- and during construction.
Interpretation & Approach	Reference to ABDSP is not applicable to FESSR. Application is for mitigation parcels in the ABDSP.
MITIGATION MEASURE	**B-1k: Re-seed disturbed areas after a transmission line-caused fire.** Should a fire occur and be determined by the CPUC's Consumer Protection and Safety Division (CPSD) or the California Department of Forestry and Fire Protection (CAL FIRE) to be caused by the Proposed Project or a constructed alternative, the Applicant shall re-seed all natural areas — both public and private — that are burned as a result of the project-caused fire. Re-seeding shall be required for areas that have been burned due to the minimum 10-year period required for arid chaparral to establish an adequate seed bank and thereby resist vegetation type conversion. A re-seeding plan shall be developed with input from Cal Fire, the U.S. Forest Service, BLM, and CPUC, based on a native seed mix. Seeds shall be raked into the soil to avoid seed predation, and re-seeding shall be carried out once to coincide with the rainy season (October 1 through April 1) to increase the likelihood of germination success. The Applicant shall provide a written report documenting all re-seeding activities to the CPUC. The Applicant shall make a good faith effort to obtain approval to re-seed on private lands as appropriate, and documentation of this good faith effort shall be submitted to the CPUC upon request. Specific re-seeding requirements stipulated in this mitigation measure shall be subject to approval and modification by any public landowning agency.
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-18.
Location	Areas burned as a result of a project-caused fire and that have also been burned at least once in the preceding 10-year period.
Monitoring/Reporting Action	CPUC/BLM shall oversee the development of re-seeding plan and shall collect written documentation of all re-seeding activities from the Applicant.
Effectiveness Criteria	Re-seeding occurs per re-seeding plan requirements.
Responsible Agency	CPUC, BLM, and USDA Forest Service
Timing	During and post construction.
Interpretation & Approach	8/20/09 – The concern for this mitigation measure is to reduce vegetation type conversion from native to non-native. Re-seeding Plan will be developed after a fire and not before energization.
MITIGATION MEASURE	**B-1l: SDG&E shall continue to work with the USDA Forest Service to minimize impacts to the RCA between Structures 184 and 187.** SDG&E shall continue to work with the USDA Forest Service to adjust the siting of project features to minimize impacts to the RCA located between Structures 184 and 187 of the BCD South Option. SDG&E shall continue to coordinate with the USDA Forest Service until the impacts to this RCA are fully resolved to the satisfaction of the USDA Forest Service.
Location	RCA located between Structures 184 and 187 of the BCD South Option.
Monitoring/Reporting Action	Upon final approval of the USDA Forest Service, SDG&E shall send the engineering changes made to project features between Structures 184 and 187 of the BCD South Option to the CPUC and BLM prior to the start of construction.
Effectiveness Criteria	Minimization of impacts to the RCA to the satisfaction of the USDA Forest Service.
Responsible Agency	CPUC, BLM, and USDA Forest Service
Timing	Pre-construction.
Interpretation & Approach	6/13/08, Submitted to CPUC and USDA Forest Service a revision of these structures. This MM applies to revised Structure numbers P118-1 to P114.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-2a: Provide restoration/compensation for impacted jurisdictional areas.** Impacts to areas under the jurisdiction of the ACOE, Regional Water Boards, State Water Board, and CDFG shall be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible (including for emergency repairs), the Applicant shall provide the necessary mitigation required as part of wetland permitting by creation/restoration/preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional area mitigation. The location(s) of the mitigation would be determined in consultation with the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation in ABDSP), USDA Forest Service (for alternatives with mitigation on National Forest lands), ACOE, Regional Water Boards, State Water Board, and CDFG as part of the wetland permitting process. It is anticipated that the sites would be in close proximity to the impacts or in the same watershed. A jurisdictional delineation and impact assessment shall be prepared based on the final alignment and final engineering plans when they are complete. Mitigation ratios would range from 1:1 up to 4:1 and would depend on the sensitivity of the jurisdictional habitat and on the requirements of the wetland permitting agencies. The width of wetland buffers would also depend on the sensitivity of the jurisdictional habitat and on the requirements of the wetland permitting agencies. Recommended mitigation ratios for vegetation communities that generally occur in jurisdictional areas are provided in Table D.2-7 for the Proposed Project (see Impacts to Vegetation Communities and Required Mitigation tables in alternatives sections for the alternatives). It is anticipated that at least a 1:1 ratio of the mitigation would include creation of jurisdictional habitat so there would be no net loss of jurisdictional habitat. For example, permanent impacts to emergent wetland would require a 2:1 mitigation ratio. Half (or 1:1) of the mitigation acreage would have to consist of created emergent wetland in an appropriate location to be preserved, and the other half (1:1) would require acquisition and preservation of already-existing emergent wetland (or other wetland community acceptable to the permitting agencies — ACOE, Regional Water Boards, State Water Board, and CDFG). It is also anticipated that a 1:1 ratio would be required for impacts to jurisdictional non-wetland Waters of the U.S. in the form of wetland enhancement, restoration, or creation as determined in consultation with the permitting agencies. Wetland permits shall be obtained from the ACOE, Regional Water Boards, State Water Board, and CDFG prior to initiating construction in jurisdictional areas.
	— **(B-2a)** All limits of construction shall be delineated with orange construction fencing and/or silt fencing. All stakes, flagging, or fencing shall be removed no later than 30 days after construction is complete. If silt fencing is used to delineate the limits of construction or as part of implementation of erosion control BMPs, the silt fencing may be left in place longer than 30 days if erosion control is still necessary. During and after construction, entrances to access roads shall be gated to prevent the unauthorized use of these roads by the general public. Signs prohibiting unauthorized use of the access roads shall be posted on these gates.
	— **(B-2a)** Any impacts associated with unauthorized activity (*e.g.,* exceeding approved construction footprints) shall be mitigated at a 5:1 ratio, unless otherwise directed by the ACOE, Regional Water Boards, State Water Board, and CDFG: restoration of the unauthorized impacts shall be credited at a 1:1 ratio; the remaining 4:1 (or 4.5:1 in FTHL MA) shall be acquired off site.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-2a)** The Applicant shall identify a qualified Habitat Restoration Specialist to be approved by the CPUC, BLM, ACOE, Regional Water Boards, State Water Board, CDFG, State Parks (for restoration in ABDSP), and USDA Forest Service (for alternatives with restoration on National Forest lands). The Habitat Restoration Specialist shall prepare and implement a Wetland Mitigation Plan to be approved in writing by the CPUC, BLM, ACOE, Regional Water Boards, State Water Board, CDFG, State Parks (for ABDSP mitigation), and USDA Forest Service (for alternatives with mitigation on National Forest lands). The Applicant shall work with the above-listed agencies until a plan is approved by all. The mitigation of habitat shall be maintained and monitored for five years after installation, or until established success criteria (specified percent cover of native and non-native species, species diversity, and species composition as compared with an undisturbed reference site) are met, to assess progress and identify potential problems with the mitigation. Maintenance and monitoring in ABDSP shall be for a minimum of five years, even if established success criteria are met before the end of five years. Remedial action (*e.g.,* additional planting, weeding, erosion control, use of container stock, supplemental watering, etc.) shall be taken during the maintenance and monitoring period if necessary to ensure the success of the mitigation. If the mitigation fails to meet the established performance criteria after the five-year maintenance and monitoring period, maintenance and monitoring shall extend beyond the five-year period until the criteria are met or unless otherwise approved by the CPUC, BLM, ACOE, Regional Water Boards, State Water Board, CDFG, State Parks (for ABDSP restoration), and USDA Forest Service (for alternatives with restoration on National Forest lands).
	— **(B-2a)** A Habitat Management Plan shall be prepared by a biologist approved by the CPUC, BLM, ACOE, Regional Water Boards, State Water Board, CDFG, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) for all acquired offsite mitigation parcels. The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any activities which may impact jurisdictional areas. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, State Parks, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired, offsite mitigation parcels. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) mitigation parcels approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands); • Baseline biological data for all mitigation parcels; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-41.
Location	All locations with impacts to jurisdictional areas.
Monitoring/Reporting Action	BLM, CPUC, and wetland permitting agencies shall approve habitat restoration plans, habitat acquisition plans, and long-term habitat management plans. BLM/CPUC biological monitor to confirm that proposed habitat restoration mitigation plans are implemented.
Effectiveness Criteria	Habitat restoration plans are implemented and meet success criteria. Long-term habitat management is provided for all mitigation sites.
Responsible Agency	BLM, CPUC, USFWS, CDFG, ACOE, RWQCB, State Parks (for mitigation lands in ABDSP), and USDA Forest Service (for mitigation lands on USFS land).

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

Timing	Pre-, during and post construction.
Interpretation & Approach	8/20/09 meeting with BLM, Aspen, and Helix: Land acquisition and/or securing property rights need not occur for the Habitat Management Plan until pre-energization. SDG&E will work with the regulating agencies to identify appropriate mitigation land which will adequately compensate for the approved impacts although the mitigation lands may not be located within each affected watershed area. This approach is consistent with the Federal Register Rules and Regulations as stated in Volume 73, No. 70/Thursday, April 10, 2008/ Rules and Regulations under Mitigation Mechanisms on page 19605, "For linear projects, such as roads and utility lines, district engineers may determine that consolidated compensatory mitigation projects provide appropriate compensation for the authorized impacts, and are environmentally preferable to requiring numerous small permittee-responsible compensatory mitigation projects along the linear project corridor."

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-3a: Prepare and implement a Weed Control Plan.** The Applicant shall prepare and implement a comprehensive, adaptive Weed Control Plan for pre-construction and long-term invasive weed abatement. Where the Applicant owns the ROW property, the Weed Control Plan shall include specific weed abatement methods, practices and treatment timing developed in consultation with the San Diego County Agriculture Commissioner's Office and the California Invasive Plant Council (Cal-IPC), or the tribal government, as appropriate. On the ROW easement lands administered by public agencies (BLM, USDA Forest Service (for alternatives routes within Cleveland National Forest lands), Wildlife Agencies, and State Parks (ABDSP) the Weed Control Plan shall incorporate all appropriate and legal agency-stipulated regulations. The Weed Control Plan shall be submitted to the ROW land-holding governmental agencies for final authorization of weed control methods, practices, and timing prior to implementation of the Weed Control Plan on public lands. ROW easements located on private lands shall include adaptive provisions for the implementation of the Weed Control Plan. Prior to implementation, the Applicant shall work with the landowners to obtain authorization of the weed control treatment that is required. State Parks shall have review and approval authority over the Weed Control Plan for ROW within or adjacent to the boundaries of ABDSP. Developed land shall be excluded from weed control.
	— **(B-3a)** The Weed Control Plan shall include the following: • A pre-construction weed inventory shall be conducted by surveying the entire ROW and areas immediately adjacent to the ROW (where access and permission can be secured) as well as at all ancillary facilities associated with the project for weed populations that: (1) are considered by the San Diego County Agriculture Commissioner or State Parks (for ROW within or adjacent to ABDSP) as being a priority for control and (2) aid and promote the spread of wildfires (such as cheatgrass [Bromus tectorum], Saharan mustard [Brassica tournefortii] and medusa head [Taeniatherum caput-medusae]). These populations shall be mapped and described according to density and area covered. These plant species shall be treated (where access and permission can be secured) prior to construction or at a time when treatments would be most effective based on phenology according to control methods and practices for invasive weed populations designed in consultation with the San Diego County Agriculture Commissioner's Office and Cal-IPC, or the tribal government, as appropriate. A pre-construction weed inventory shall also be conducted by surveying areas that will be directly impacted by the project for weed populations that are rated High or Moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2006) or are weed species of concern to State Parks (for ROW within or adjacent to ABDSP). These plant species shall be treated prior to construction or at a time when treatments would be most effective based on phenology according to control methods and practices for invasive weed populations designed in consultation with Cal-IPC and State Parks (for treatment in ROW within ABDSP).
	— **(B-3a)** Weed control treatments shall include all legally permitted chemical, manual and mechanical methods applied with the authorization of the San Diego County Agriculture Commissioner and the ROW easement land-holding agencies where appropriate. The application of herbicides shall be in compliance with all state and federal laws and regulations under the prescription of a Pest Control Advisor (PCA) and implemented by a Licensed Qualified Applicator. Where manual and/or mechanical methods are used, disposal of the plant debris will follow the regulations set by the San Diego County Agriculture Commissioner. The timing of the weed control treatment shall be determined for each plant species in consultation with the PCA, the San Diego County Agriculture Commissioner, State Parks (for treatment in ABDSP) and Cal-IPC, or the tribal government, as appropriate, with the goal of controlling populations before they start producing seeds.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— (B-3a) For the lifespan of the project (*i.e.,* as long as the project is physically present), long-term measures to control the introduction and spread of noxious weeds in the project area shall be taken as follows. • From the time construction begins until two years after construction is complete, annual surveying for new invasive weed populations and the monitoring of identified and treated populations shall be required in the survey areas described above. After this time, surveying for new invasive weed populations and monitoring of identified and treated populations shall be required at an interval of every two years. However, the treatment of weeds shall occur on a minimum annual basis, unless otherwise approved by the PCA, the San Diego County Agriculture Commissioner, State Parks (for treatment in ABDSP) and Cal-IPC. • During project construction and operation/maintenance, all seeds and straw materials shall be certified weed free, and all gravel and fill material shall be certified weed free by the San Diego County Agriculture Commissioner's Office, or the tribal government, as appropriate. • During project construction and operation/maintenance, vehicles and all equipment shall be washed (including wheels, undercarriages, and bumpers) at an offsite washing facility (*e.g.,* a car wash or truck wash) immediately before project construction begins and prior to returning to project construction should equipment be used in a different construction area. In addition, tools such as chainsaws, hand clippers, pruners, etc. shall be washed at an offsite washing facility immediately before project construction begins and prior to returning to project construction should tools be used in a different construction area. In addition, vehicles, tools, and equipment shall be washed at an offsite washing facility should these vehicles, tools, and equipment have been used in an area where invasive plants have been mapped during the pre-construction weed control inventory and as directed by the biological construction monitor, prior to entering a project area free of populations of invasive plants (as determined by the pre-construction weed control inventory). Finally, vehicles, tools, and equipment used for maintenance shall be washed at an offsite washing facility immediately before each maintenance event. All washing shall take place where rinse water is collected and disposed of in either a sanitary sewer or landfill; an effort shall be made to use wash facilities that use recycled water. A written daily log shall be kept for all vehicle/equipment/tool washing that states the date, time, location, type of equipment washed, methods used, and staff present. The log shall include the signature of a responsible staff member. Logs shall be available to the CPUC, BLM, USDA Forest Service (for alternative routes within Cleveland National Forest lands), Wildlife Agencies, State Parks (for weeds in ABDSP), tribal governments (for weeds on tribal lands), and biological monitor for inspection at any time and shall be submitted to the CPUC on a monthly basis during construction and submitted annually to the CPUC during operation/maintenance.
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-20.
Location	Entire project area.
Monitoring/Reporting Action	BLM/CPUC biological monitor to confirm preparation and implementation of a weed control plan.
Effectiveness Criteria	Weed control plan prepared and successfully implemented.
Responsible Agency	BLM, CPUC, and ROW land-holding agencies (BLM, State Parks for ABDSP, USDA Forest Services for USFS lands).
Timing	Pre-, during and post construction.
Interpretation & Approach	Reference to ABDSP is not applicable to FESSR. Application is for mitigation parcels in the ABDSP. 8/20/09: Weed Control Plans are to be developed for all areas disturbed during construction activities. Vehicle and equipment washing – The definition of 'a different construction area' for those vehicles and pieces of equipment that have been washed prior to start of project construction and have continuously worked on the project construction shall be as follows: A different construction area shall be delineated by the weed control plan/weed inventory (8/31/09) 8/31/09 - An O&M Plan for vehicle washing showing mapping for where washing will be created and will be based on the weed control plan. Wash water will be allowed to evaporate when possible, and debris will be collected for disposal to land fills. Weed control plan will include vegetation clearing equipment (*e.g.,* shovels) and buckets of water to dip the equipment in for remote areas.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-5a: Conduct rare plant surveys, and implement appropriate avoidance/minimization/ compensation strategies.** A qualified biologist shall survey for special status plants in the spring of a year with adequate rainfall prior to initiating construction activities in a given area. If a survey cannot be conducted due to inadequate rainfall, then SDG&E shall consult with the Wildlife Agencies, State Parks (for impacts in ABDSP), and the USFS (for impacts on National Forest lands) to determine if construction may begin in the absence of survey data and what mitigation would be required, or whether construction would not be allowed until such data is collected. A report of special status plants observed shall be prepared and submitted for approval by the CPUC, BLM, State Parks (for activities in ABDSP), USDA Forest Service (for alternatives with activities on National Forest lands), and the Wildlife Agencies prior to activities which may impact the plant resources.
	— **(B-5a)** All special status plant populations shall be staked or flagged by a qualified biologist approved by the CPUC, BLM, State Parks (for activities in ABDSP), USDA Forest Service (for alternatives with activities on National Forest lands), and the Wildlife Agencies. All stakes, flagging, or fencing shall be removed no later than 30 days after construction is complete.
	— **(B-5a)** Impacts to federal or State listed plant species shall first be avoided where feasible, and, where not feasible, impacts shall be compensated through salvage and relocation (salvage and relocation for plants in ABDSP shall be determined in consultation with, and approval of, State Parks) via a restoration program and/or offsite acquisition and preservation of habitat containing the plant at a 2:1 ratio. Avoidance may not be feasible due to physical or safety constraints. The CPUC, BLM, State Parks (for activities in ABDSP), USDA Forest Service (for alternatives with activities on National Forest lands), and the Wildlife Agencies shall decide whether the Applicant can restore rare plant populations or shall acquire habitat with rare plant populations off site (locations to be approved by the CPUC, BLM, State Parks [for activities in ABDSP], USDA Forest Service [for alternatives with activities on National Forest lands], and the Wildlife Agencies). A qualified biologist shall prepare a Restoration Plan that shall indicate where restoration would take place. The restoration plan shall also identify the goals of the restoration, responsible parties, methods of restoration implementation, maintenance and monitoring requirements, final success criteria, and contingency measures. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, State Parks, and USDA Forest Service (for alternatives with restoration on National Forest lands) until a plan is approved by all. Impacts to moderately sensitive plant species (*i.e.,* BLM Sensitive, USDA Forest Service Sensitive, CNPS List 1 and 2 species) shall first be avoided where feasible, and, where not feasible, impacts shall be compensated through reseeding (with locally collected seed stock) or relocation to temporarily disturbed areas (reseeding and relocation of plants in ABDSP shall be determined in consultation with, and approval of, State Parks). Avoidance may not be feasible due to physical or safety constraints. Mitigation Measure B-1a would also provide habitat-based mitigation for these impacts.
	— **(B-5a)** Where reseeding or salvage and relocation is required, the Applicant shall identify a qualified Habitat Restoration Specialist to be approved by the CPUC, BLM, State Parks (for restoration in ABDSP), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies. The Habitat Restoration Specialist shall prepare and implement a Restoration Plan for reseeding or salvaging and relocating special status plant species to be approved by the CPUC, BLM, State Parks (for restoration in ABDSP), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies in writing prior to impacting the plant resources. The Applicant shall work with the above-listed agencies until a plan is approved by all. The reseeding or relocation of plants shall be maintained and monitored for five years after installation, or until established success criteria are met, to assess progress and identify potential problems with the mitigation. The reseeding or relocation of plants in ABDSP shall be maintained and monitored for a minimum of five years, even if established success criteria are met before the end of five years. Remedial action (*e.g.,* additional seeding, weeding, erosion control, use of container stock, supplemental watering, etc.) shall be taken during the maintenance and monitoring period if necessary to ensure the success of the restoration. If the restoration fails to meet the established performance criteria after the five-year maintenance and monitoring period, maintenance and monitoring shall extend beyond the five-year period until the criteria are met or unless otherwise approved by the CPUC, BLM, State Parks (for restoration in ABDSP), USDA Forest Service (for alternatives with restoration on National Forest lands), and the Wildlife Agencies.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-5a)** A Habitat Management Plan for any required, offsite mitigation shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands). The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any activities which may impact special status plant resources. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, State Parks, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired offsite mitigation parcels. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) offsite mitigation parcels approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands); • Baseline biological data for all mitigation parcels; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-32, G-CM-33, G-CM-35, San Diego Thornmint SS-CM-1 and SS-CM-2.
Location	Entire project area.
Monitoring/Reporting Action	BLM and CPUC shall approve habitat restoration plans, habitat acquisition plans, and long-term habitat management plans, and ensure their implementation. BLM/CPUC biological monitor shall oversee surveys and monitoring and ensure compliance with APMs and mitigation measures, and confirm that habitat restoration plans are implemented.
Effectiveness Criteria	Successful avoidance or restoration/relocation of sensitive plants, purchase of appropriate mitigation lands, and provision of long-term habitat management for all mitigation sites.
Responsible Agency	BLM, CPUC, USFWS, CDFG, State Parks (for ABDSP), and USDA Forest Service (for USFS land).
Timing	Pre-, during and post construction.
Interpretation & Approach	Reference to ABDSP applicable only for mitigation parcels.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	**B-7a: Cover all steep-walled trenches or excavations used during construction to prevent the entrapment of wildlife (*e.g.,* reptiles and small mammals).** BIO-APM-14 shall be modified to ensure that all steep-walled trenches or excavations used during construction shall be covered at all times except when being actively utilized. If the trenches or excavations cannot be covered, exclusion fencing (*i.e.,* silt fencing) shall be installed around the trench or excavation, or it shall be covered to prevent entrapment of wildlife. Open trenches, or other excavations that could entrap wildlife shall be inspected by the qualified biologist (see Mitigation Measure B-1c) a minimum of three times per day and immediately before backfilling. Furthermore, employees and contractors shall look under vehicles and equipment for the presence of wildlife before movement. If wildlife is observed, no vehicles or equipment would be moved until the animal has left voluntarily or is removed by the qualified biologist. Should a dead or injured listed species be found in a trench or excavation or anywhere in the construction zone or along an access road, the qualified biologist shall contact the CPUC, BLM, State Parks (for activities in ABDSP), USDA Forest Service (for alternatives with activities on National Forest lands), and the Wildlife Agencies within 48 hours of the finding. The qualified biologist shall report the species found, the location of the finding, the cause of death (if known), and shall submit a photograph and any other pertinent information.
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-39 and G-CM-40.
Location	Entire project area.
Monitoring/Reporting Action	BLM/CPUC biological monitor shall ensure compliance with APMs and mitigation measures.
Effectiveness Criteria	Steep-walled trenches or excavations are covered at all times except when being actively utilized, or exclusion fencing is installed around the trench or excavation.
Responsible Agency	BLM, CPUC, USFWS, CDFG, State Parks (for ABDSP land), and USDA Forest Service (for USFS land).
Timing	During construction.
Interpretation & Approach	Reference to ABDSP applicable only for mitigation parcels. 8/20/09: B-7a supersedes APM-12 and APM-24. See Appendix 8N of the Final EIR/EIS. Implement BIO-APM 14 & BIO-APM 24 with B-7a.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-7b: Implement avoidance/mitigation/compensation according to the Flat-Tailed Horned Lizard Rangewide Management Strategy.** Mitigation for impacts to the FTHL shall follow all applicable measures in the Flat-Tailed Horned Lizard Rangewide Management Strategy (Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003). This mitigation includes, but is not limited to, locating impacts outside of MAs, delineating work limits, using existing roads, biological monitoring, and worker education.
	— **(B-7b)** According to the Flat-Tailed Horned Lizard Rangewide Management Strategy (Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), compensation for FTHL habitat impacts could involve purchase of FTHL habitat and/or monetary compensation as determined by the Flat-Tailed Horned Lizard Interagency Coordinating Committee. Impacts shall be mitigated at a 1:1 ratio for habitat outside a MA. Furthermore, mitigation inside a MA shall be at a 3.5:1 ratio for temporary impacts (2.5:1 for disturbed habitat, developed land, or agriculture) and a 5.5:1 ratio for permanent impacts (4.5:1 for disturbed habitat, developed land, or agriculture) . For the Proposed Project, the required mitigation for FTHL impacts (if offsite acquisition is the method of compensation) is 403.48 acres. On-site restoration requirements for the Project would be 232.84 acres. Any FTHL habitat acquired shall be approved by the Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks (for land in ABDSP)
	— **(B-7b)** A Habitat Management Plan shall be prepared by a biologist approved by the Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks (for land in ABDSP) for all acquired FTHL habitat. The Habitat Management Plan must be approved in writing by the Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks (for land in ABDSP) prior to the initiation of any activities which may impact (directly or indirectly) the FTHL or its habitat. The Applicant shall work with the Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired FTHL habitat. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) FTHL habitat approved by the Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP); • Baseline biological data for all acquired FTHL habitat; • Designation of a land management entity approved by the Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to Flat-Tailed Horned Lizard Interagency Coordinating Committee, CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP).
Location	FTHL MAs and where potential FTHL habitat occurs.
Monitoring/Reporting Action	BLM and CPUC shall ensure that required purchase of mitigation land and provision of long-term management occurs. BLM/CPUC biological monitor shall ensure that applicable measures in the FTHL Rangewide Management Strategy are implemented.
Effectiveness Criteria	Direct impacts to the flat-tailed horned lizard are minimized. Compensatory mitigation for impacts to FTHL is implemented, including purchase of habitat and provision of long-term management for mitigation sites.
Responsible Agency	BLM, CPUC, and Flat-Tailed Horned Lizard Interagency Coordinating Committee.
Timing	Pre-, during and post construction.
Interpretation & Approach	8/20/09 In lieu of purchasing habitat, SDG&E will provide monetary compensation, as determined by the Flat-Tailed Horned Lizard Interagency Coordinating Committee.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-7c: Minimize impacts to Peninsular bighorn sheep and provide compensation for loss of critical habitat.** With regard to timing of activities, construction and maintenance activities (including the use of helicopters) in bighorn sheep critical habitat shall be limited to outside the lambing season and the period of greatest water need, or a minimum ceiling of 1,500 feet for helicopter flights shall be maintained. The lambing season is January 1 through June 30. The period of greatest water need is May through September. Construction and maintenance activities in PBS critical habitat may occur during the lambing season and/or period of greatest water need if prior approval is obtained from the Wildlife Agencies.
	— **(B-7c)** To help reconnect PBS subpopulations and at least partially offset impacts to the overall population of PBS caused by the project, the Applicant shall: • fund the design and construction of an overpass (for sheep) or tunnel (for vehicles) to facilitate PBS movement across a highway at a location determined by the USFWS (in coordination with State Parks and CDFG. Tunnel or overpass design must be approved by the Wildlife Agencies. • fund removal of tamarisk and fences for the life of the project, and install and maintain water sources at locations determined by the USFWS (in coordination with State Parks and CDFG) • fund a minimum 10-year-long program to monitor the effects of the project on PBS behavior, movements, and dispersal in the project corridor (ten years is needed to measure the influence of the project while factoring in rainfall cycles, vegetative productivity, and drought). This program would be implemented by the Wildlife Agencies and State Parks following construction.
	— **(B-7c)** Furthermore, the Applicant shall provide compensation for direct loss of critical habitat at a 5:1 ratio for permanent impacts and at a 3:1 ratio (including a combination of onsite restoration and offsite purchase) for temporary impacts with PBS critical habitat or other habitat acceptable to the Wildlife Agencies, BLM, and State Parks (for critical habitat in ABDSP). Impacts to PBS critical habitat must be mitigated within the same Critical Habitat Unit where the impacts occurred. For the Proposed Project, the required mitigation for PBS impacts includes offsite purchase of 525.7 acres and onsite restoration of 111.81 acres. The determination of impact acreage shall be based on the definition of critical habitat in effect as of the time of publication of the Final EIR/EIS.
	— **(B-7c)** A Habitat Management Plan shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, and State Parks for all acquired PBS habitat. The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, and State Parks (for land in ABDSP) prior to the initiation of any activities which may impact (directly or indirectly) PBS or its habitat. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, and State Parks until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired PBS habitat. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) PBS habitat approved by the CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP). • Baseline biological data for all acquired PBS habitat • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP) to provide in-perpetuity management • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity) • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP).
	Also, see U.S. Fish and Wildlife Conservation Measures SS-CM-22, SS-CM-23, SS-CM-24, and SS-CM-25.
Location	Where bighorn sheep or designated bighorn sheep critical habitat occur.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

Monitoring/Reporting Action	BLM/CPUC biological monitor shall ensure compliance with APMs and bighorn sheep impact minimization measures. BLM and CPUC shall ensure that funding is provided for bighorn sheep studies and crossing mitigation; and that habitat acquisition and long-term management of mitigation sites is implemented.
Effectiveness Criteria	Successful avoidance/minimization of bighorn sheep impacts, and implementation of funding for studies and a wildlife crossing, habitat acquisition and long-term management for mitigation parcels.
Responsible Agency	BLM, CPUC, USFWS, CDFG, and State Parks.
Timing	Pre-, during and post construction.
Interpretation & Approach	8/20/09 Discussion with BLM, Aspen, and Helix, helicopter work must occur at a minimum of 1500 feet or an alternative elevation as may be agreed upon with the appropriate agencies from January 1 through September 30. The wildlife agencies will provide direction on the location and type of construction that will meet the requirement to "fund the design and construction of an overpass." The 10-year-long monitoring program will start once construction has been completed. Since the issuance of the Final EIR/EIS and BO, a revised delineation of the critical habitat designation for the Bighorn Sheep was issued. The wildlife agencies will determine which delineation will be utilized for the project going forward.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-7d: Conduct burrowing owl surveys, and implement appropriate avoidance/minimization/compensation strategies.** A survey shall be conducted within 30 days prior to the initiation of construction by a qualified biologist to determine the presence or absence of the burrowing owl in the construction zone plus 250 feet beyond. In addition, the burrowing owl shall be looked for opportunistically as part of other surveys and monitoring required during project construction. If the burrowing owl is absent, then no mitigation is required.
	— **(B-7d)** If the burrowing owl is present, no disturbance shall occur within 50 meters (approximately 160 ft) of occupied burrows from September 1 through January 31 or within 75 meters (approximately 250 ft) of occupied burrows from February 1 through August 31 (CDFG, 1995).
	— **(B-7d)** During construction, any pipe or similar construction material that is stored on site for one or more nights shall be inspected for burrowing owls by a qualified biologist before the material is moved, buried, or capped
	— **(B-7d)** Passive relocation of owls shall be implemented prior to construction only at the direction of the CDFG and only if the above-described occupied burrow disturbance absolutely cannot be avoided (*e.g.,* due to physical or safety constraints). Relocation of owls shall only be implemented during the non-breeding season (September 1 through January 31; CDFG, 1995). Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 meters from the impact zone and that are within or contiguous to a minimum of 6.5 acres of preserved (or acquired and preserved if not already preserved) foraging habitat for each relocated owl (single owl or owl pair). Passive relocation is accomplished by first creating two artificial burrows in contiguous, preserved foraging habitat (if no natural burrows exist) for each occupied burrow that would be impacted; and second, installing one-way doors on occupied burrow entrances so owls can leave the burrow but not re-enter it. Following passive relocation, the area of impact and the preserved foraging habitat with alternate burrows are surveyed daily for one week to confirm owl use of alternate burrows before excavation of burrows in the impact zone. All passive relocation shall be conducted by a biologist approved by the CDFG. If the alternate burrows are not used by the relocated owls, then the Applicant shall work with the CDFG to provide alternate mitigation for burrowing owls. If the alternate burrows are used, no other mitigation shall be required. If it is not possible to preserve contiguous habitat on which to provide alternate burrows (*e.g.,* on private land), and occupied owl burrows would be directly impacted, then the owls shall be passively relocated without the creation of alternate burrows prior to construction (relocation should only be implemented during the non-breeding season [September 1 through January 31]). The loss of occupied owl habitat shall be mitigated by acquiring and preserving other occupied habitat elsewhere (as explained below) per the Staff Report on Burrowing Owl Mitigation (CDFG, 1995) and the Burrowing Owl Survey Protocol and Mitigation Guidelines (The Burrowing Owl Consortium, 1993), or as otherwise determined in consultation with the CDFG.
	— **(B-7d)** Impacted occupied habitat shall be mitigated by 1) acquiring and preserving occupied habitat at a rate of 1.5 times 6.5 acres (or 9.75 acres) per pair or single bird impacted, or 2) acquiring and preserving unoccupied habitat contiguous with currently occupied habitat at a rate of two times 6.5 acres (or 13 acres) per pair or single bird impacted, or 3) acquiring and preserving suitable unoccupied habitat at a rate of three times 6.5 acres (or 19.5 acres) per pair or single bird impacted. All acquired habitat shall be acceptable to the CDFG and shall be protected and managed for the burrowing owl in perpetuity.
	— **(B-7d)** The survey required within 30 days prior to the initiation of construction will determine the presence or absence of the burrowing owl in the construction zone plus 250 feet beyond and whether or not the mitigation needs to be revised.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-7d)** A Habitat Management Plan shall be prepared by a biologist approved by the CPUC, BLM, CDFG, and State Parks (for land in ABDSP) for all acquired burrowing owl habitat. The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, and State Parks (for land in ABDSP) prior to the initiation of any activities which may impact (directly or indirectly) the burrowing owl or its habitat. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, and State Parks until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired burrowing owl habitat. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) burrowing owl habitat approved by the CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP); • Baseline biological data for all acquired burrowing owl habitat; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, and State Parks (for mitigation parcels to be part of ABDSP).
Location	Where occupied burrowing owl habitat occurs.
Monitoring/Reporting Action	BLM/CPUC biological monitor shall oversee surveys and monitoring and ensure compliance with APMs and mitigation measures. If necessary, BLM and CPUC shall approve habitat acquisition plans, and long-term habitat management plans, and ensure their implementation.
Effectiveness Criteria	Avoidance of occupied burrows and surrounding foraging area, successful passive relocation, and/or replacement of occupied habitat that is managed in perpetuity.
Responsible Agency	BLM, CPUC, USFWS, and CDFG.
Timing	Pre-, during and post construction.
Interpretation & Approach	None required.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-7e: Conduct least Bell's vireo and southwestern willow flycatcher surveys, and implement appropriate avoidance/minimization/compensation strategies.** All grading or brushing taking place within riparian habitats of the least Bell's vireo or southwestern willow flycatcher during construction shall be conducted from September 16 (October 1 in ABDSP) through March 14, which is outside the least Bell's vireo and southwestern willow flycatcher breeding seasons.
	— **(B-7e)** When conducting all other construction activities during the breeding season of March 15 through September 15 (September 30 in ABDSP) within 500 feet (USFWS, 2007b) of habitat in which least Bell's vireos and/or southwestern willow flycatchers are known to occur or have potential to occur, a biologist permitted by the USFWS shall survey for least Bell's vireos and southwestern willow flycatchers within 10 calendar days prior to initiating activities in an area. The results of the survey shall be submitted to the Wildlife Agencies for review and approval prior to initiating any construction activities.
	— **(B-7e)** If least Bell's vireos or southwestern willow flycatchers are present, a permitted biologist shall survey for nesting vireos and flycatchers approximately once per week within 500 feet of the construction area (USFWS, 2007b), for the duration of the activity in that area during the breeding season.
	— **(B-7e)** If/when an active nest is located, a 300-foot no-construction buffer zone (USFWS, 2007b) shall be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. The Applicant shall contact Wildlife Agencies to determine the appropriate buffer zone. No construction shall take place within this buffer until the nest is no longer active unless there are physical or safety constraints. If construction must take place within the buffer, a qualified acoustician shall monitor noise as construction approaches the edge of the occupied vireo/flycatcher habitat as directed by the permitted biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that the activities in general are disturbing the nesting activities, the biologist shall have the authority to halt construction and shall consult with the Wildlife Agencies, State Parks (for activities in ABDSP), and USDA Forest Service (for activities on National Forest lands) to devise methods to reduce the noise and/or disturbance. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting birds and the activities, and working in other areas until the young have fledged. The permitted biologist shall monitor the nest daily until either activities are no longer within 300 feet of the nest, or the fledglings become independent of their nest.
	— **(B-7e)** Mitigation for the loss of least Bell's vireo- or southwestern willow flycatcher-occupied habitat (or designated critical habitat for the flycatcher) shall be implemented as follows. Permanent impacts to occupied habitat and/or designated critical habitat shall include offsite acquisition and preservation of occupied habitat or designated critical habitat at a 3:1 ratio. Temporary impacts to occupied habitat or designated critical habitat shall include 1:1 onsite restoration and 2:1 offsite acquisition and preservation of occupied habitat and/or designated critical habitat. Impacts to least Bell's vireo or southwestern willow flycatcher critical habitat must be mitigated within the same Critical Habitat Unit where the impacts occurred. If a USFWS protocol, pre-construction survey, conducted in an area where presence of the vireo or flycatcher was assumed in this analysis (see Appendix 8B) determines that the species is absent, then the mitigation shall be reduced accordingly. Any acquired habitat shall be approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands).

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-7e)** A Habitat Management Plan for any required, offsite mitigation shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands). The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any activities which may impact (directly or indirectly) the least Bell's vireo or southwestern willow flycatcher or its habitat. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, State Parks, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired vireo or flycatcher habitat. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) least Bell's vireo or southwestern willow flycatcher habitat approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands); • Baseline biological data for all least Bell's vireo or southwestern willow flycatcher habitat; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-32, SS-CM-16, SS-CM-17, and SS-CM-18.
Location	Areas where the vireo or flycatcher occur or have potential to occur.
Monitoring/Reporting Action	BLM/CPUC biological monitor shall oversee surveys and ensure compliance with APMs and avoidance/minimization/mitigation measures. BLM and CPUC shall approve habitat restoration plans, habitat acquisition plans, and long-term habitat management plans, and ensure their implementation.
Effectiveness Criteria	Impacts to nesting vireos and flycatchers are avoided/minimized/mitigated. Habitat restoration plans are implemented and meet success criteria, and long-term habitat management is provided for all mitigation sites.
Responsible Agency	BLM, CPUC, USFWS, and CDFG.
Timing	Pre-, during and post construction.
Interpretation & Approach	Reference to ABDSP is only applicable for mitigation parcels.
MITIGATION MEASURE	**B-7h: Implement appropriate avoidance/minimization strategies for eagle nests.** No construction or maintenance activities shall occur within 4,000 feet of an eagle nest during the eagle breeding season (December through June).
Location	Within 4,000 feet of eagle nests
Monitoring/Reporting Action	BLM/CPUC biological monitor shall ensure compliance with restrictions before and during construction. A qualified biologist shall ensure compliance during maintenance.
Effectiveness Criteria	Successful avoidance of indirect impacts to eagle nests.
Responsible Agency	BLM and CPUC.
Timing	Pre-, during and post construction.
Interpretation & Approach	None required.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-7i: Conduct Quino checkerspot butterfly surveys, and implement appropriate avoidance/minimization/compensation strategies.** A biologist permitted by the USFWS shall determine suitable habitat areas (*i.e.,* non-excluded areas per the 2002 USFWS protocol; USFWS, 2002b) within any designated USFWS QCB survey area (*e.g.,* Survey Area 2) that would be impacted by project construction.
	— **(B-7i)**A pre-construction, USFWS protocol presence/absence survey for the adult QCB shall be conducted within all suitable habitat for this species in the construction zone within any designated USFWS QCB survey area. The survey shall be conducted in a year where the QCB is readily observed at USFWS QCB-monitored reference sites to determine what areas are occupied by the QCB (*i.e.,* any suitable habitat within 1 km of a current QCB sighting is considered occupied) and what areas are not occupied. The USFWS permitted biologist shall record the precise locations of QCB larval host plants within the construction zone (and 10 meters beyond) using GPS technology. If the protocol pre-construction survey is conclusive for determining absence of the QCB, then areas without the butterfly would not require mitigation.
	— **(B-7i)** If the protocol pre-construction survey is not conclusive for determining QCB absence (due to limited detectability per the 2002 protocol, for example), or if a survey is not conducted, then all suitable habitat areas would be considered potentially occupied and would require mitigation as follows. If construction occurs outside the larvae and adult activity season (June 1 through October 15) and stays at least 10 meters away from all host plant locations, then no mitigation is required (USFWS, 2007d). If construction occurs between October 16 and May 31 or within 10 meters of host plant locations, or within designated critical habitat, then (1) temporary impacts to the habitat shall be mitigated through onsite restoration of temporarily disturbed areas and offsite acquisition and preservation of an equal sized area of QCB-occupied habitat (a 2:1 mitigation ratio) and (2) permanent impacts shall be mitigated through offsite acquisition and preservation of QCB-occupied habitat (or QCB-designated critical habitat for impacts to designated critical habitat) at a 2:1 ratio (*i.e.,* two acres acquired for each acre lost). Any acquired habitat shall be approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation land to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands). A USFWS permitted biologist shall be present during all construction activities in potentially occupied habitat to monitor and assist the construction crews to ensure impacts occur only as allowed. This same mitigation shall apply where the protocol pre-construction survey was conclusive for determining that the QCB is present and where construction would occur in designated critical habitat. Impacts to QCB critical habitat must be mitigated within the same Critical Habitat Unit where the impacts occurred. If host plant mapping is not possible during the pre-construction survey (*e.g.,* drought prevents plant germination), then all suitable habitat (*i.e.,* non-excluded habitat per the 2002 protocol) shall be considered occupied by the QCB and mitigated under the assumption that the QCB is present.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	— **(B-7i)** A Habitat Management Plan for any required, offsite mitigation shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands). The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any activities which may impact (directly or indirectly) the QCB or its habitat. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, State Parks, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired QCB habitat. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) QCB habitat approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands); • Baseline biological data for all QCB habitat; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, State Parks (for mitigation parcels to be part of ABDSP), and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-32, SS-CM-3, SS-CM-4, SS-CM-5, SS-CM-6, SS-CM-7, SS-CM-26, and SS-CM-27.
Location	Where suitable Quino checkerspot butterfly habitat occurs.
Monitoring/Reporting Action	A qualified biologist shall oversee surveys and ensure compliance with APMs and Quino checkerspot avoidance/minimization/mitigation measures. If required, BLM and CPUC shall approve habitat acquisition plans and long-term management plans.
Effectiveness Criteria	Successful avoidance of impacts to the Quino checkerspot or impacts as allowed by the USFWS, and if necessary, implementation of mitigation land acquisition.
Responsible Agency	BLM, CPUC, and USFWS.
Timing	Pre- and during construction.
Interpretation & Approach	Reference to ABDSP applicable only for mitigation parcels.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	**— B-7j: Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/ compensation strategies.** A pre-construction, USFWS protocol survey shall be conducted for the toad in the construction zone (by a biologist permitted by the USFWS to handle the toad) where absence of the species has not been proven to conclusively define the impacts to occupied habitat. In the absence of this survey data, the mitigation acreages required below shall stand. Where the pre-construction survey determines the species is absent, the mitigation shall be reduced accordingly.
	(— B-7j) The removal of toad riparian breeding habitat shall occur from October through December to minimize potential impacts to breeding adults (including potential sedimentation impacts to toad eggs) and dispersing juveniles.
	(— B-7j) Where the toad is present (or assumed to be present if no pre-construction survey is conducted), the construction zone shall be fenced with exclusion fencing to prevent toad access to it. The fencing shall be a silt-screen type barrier comprised of a minimum 24-inch high fence with the remainder (minimum 12 inches) anchored firmly against the ground. The fence may be buried if necessary to exclude toad access. The fence locations shall be identified by a USFWS permitted biologist and adjusted as necessary. Exclusion fencing shall be monitored daily by a qualified biologist (see Mitigation Measure B-1c) and maintained in its original condition by construction personnel for the entire length of the construction period in toad habitat. Pre- and post-exclusion fencing surveys within the construction zone shall be conducted for arroyo toads by a biologist permitted by the USFWS to handle the toad. Prior to construction commencement, a minimum of three surveys shall be conducted by this biologist following installation of the fencing and prior to construction activities. One of these clearance surveys must take place no more than 24 hours prior to activity commencement. These surveys shall be conducted during appropriate climatic conditions and during the appropriate time of day or night to maximize the likelihood of encountering arroyo toads. If conditions are not appropriate for arroyo toad movement during surveys, the biologist may attempt to elicit a response from the toads during nights (*i.e.,* at least one hour after sunset), provided that temperatures are above 50°F, by spraying the project area with water to simulate a rain event. After the three clearance surveys outlined above have been completed, daily surveys shall be conducted each morning prior to the continuation of construction or maintenance activity. Any toads found shall be relocated to appropriate similar habitat outside project impact areas.
	(— B-7j) Mitigation for the loss of arroyo toad-occupied habitat shall be implemented as follows. Permanent impacts to occupied, arroyo toad breeding habitat shall include offsite acquisition and preservation of occupied arroyo toad breeding habitat at a 3:1 ratio. Permanent impacts to occupied, upland burrowing habitat shall include offsite acquisition and preservation of occupied, upland burrowing habitat at a 2:1 ratio. Temporary impacts to occupied breeding habitat shall include 1:1 onsite restoration and 2:1 offsite acquisition and preservation of occupied breeding habitat. Temporary impacts to occupied, upland burrowing habitat shall include 1:1 onsite restoration and 1:1 offsite acquisition and preservation of occupied, upland burrowing habitat. Any acquired arroyo toad habitat shall be approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands).

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	(— B-7j) A Habitat Management Plan for any required, offsite mitigation shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands). The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any activities which may impact (directly or indirectly) the arroyo toad or its habitat. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired arroyo toad habitat. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) arroyo toad habitat approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands); • Baseline biological data for all arroyo toad habitat; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-32, SS-CM-8, SS-CM-9, SS-CM-10, SS-CM-11, SS-CM-12, SS-CM-13, SS-CM-14, and SS-CM-15.
Location	Areas where the arroyo toad occurs or has potential to occur.
Monitoring/Reporting Action	A qualified biologist shall oversee surveys and ensure compliance with APMs and avoidance/minimization/mitigation measures. BLM and CPUC shall approve habitat restoration plans, habitat acquisition plans, and long-term habitat management plans, and ensure their implementation.
Effectiveness Criteria	Impacts to arroyo toads are avoided/minimized/mitigated. Habitat restoration plans are implemented and meet success criteria, and long-term habitat management is provided for all mitigation sites.
Responsible Agency	BLM, CPUC, USFWS, CDFG, State parks (for ABDSP) and USDA Forest Services (for USFS lands).
Timing	Pre-, during and post construction.
Interpretation & Approach	Reference to ABDSP applicable only for mitigation parcels.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	**— B-7I: Conduct coastal California gnatcatcher surveys, and implement appropriate avoidance/minimization/compensation strategies.** All brushing or grading taking place within occupied habitat of the coastal California gnatcatcher (defined as within 500 feet of any gnatcatcher sightings [USFWS, 2007b]) during construction shall be conducted from September 1 through February 14, which is outside the coastal California gnatcatcher breeding season.
	(— B-7I) When conducting all other construction activities during the coastal California gnatcatcher breeding season of February 15 through August 31, within habitat in which coastal California gnatcatchers are known to occur or have potential to occur, the following avoidance measures shall apply. A USFWS permitted biologist shall survey for coastal California gnatcatchers within 10 calendar days prior to initiating activities in an area. The results of the survey shall be submitted to the Wildlife Agencies for review and approval prior to initiating any construction activities. If coastal California gnatcatchers are present, but not nesting, a USFWS permitted biologist shall survey for nesting coastal California gnatcatchers approximately once per week within 500 feet of the construction area for the duration of the activity in that area during the breeding season.
	(— B-7I) If/when an active nest is located, a 300-foot no-construction buffer (USFWS, 2007b) shall be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. The Applicant shall contact Wildlife Agencies to determine the appropriate buffer zone. To the extent feasible, no construction shall take place within this buffer until the nest is no longer active. However, if construction must take place within the 300-foot buffer, a qualified acoustician shall monitor noise as construction approaches the edge of the occupied gnatcatcher habitat as directed by the permitted biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that the activities in general are disturbing the nesting activities, the biologist shall have the authority to halt construction and shall consult with the Wildlife Agencies to devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting coastal California gnatcatchers and the activities, and working in other areas until the young have fledged.
	(— B-7I) Mitigation for the loss of coastal California gnatcatcher-occupied habitat shall be implemented as follows. Permanent impacts to occupied habitat shall include offsite acquisition and preservation of occupied habitat at a 2:1 ratio. Temporary impacts to occupied habitat shall be mitigated at a 2:1 ratio and shall include 1:1 onsite restoration and 1:1 offsite acquisition and preservation of occupied habitat. Mitigation for the loss of unoccupied designated critical habitat for the gnatcatcher shall be implemented as follows. Permanent impacts to unoccupied designated critical habitat shall include offsite acquisition and preservation of designated critical habitat at a 2:1 ratio. Temporary impacts to unoccupied designated critical habitat shall include 1:1 onsite restoration. Impacts to coastal California gnatcatcher critical habitat must be mitigated within the same Critical Habitat Unit where the impacts occurred. Any acquired coastal California gnatcatcher habitat shall be approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands).

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

	(— B-7l) A Habitat Management Plan for any required, offsite mitigation shall be prepared by a biologist approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands). The Habitat Management Plan must be approved in writing by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands) prior to the initiation of any activities which may impact (directly or indirectly) the coastal California gnatcatcher or its habitat. The Applicant shall work with the CPUC, BLM, Wildlife Agencies, and USDA Forest Service until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired coastal California gnatcatcher. The Habitat Management Plan shall include, but shall not be limited to: • Legal descriptions of all acquired or assured (as defined in Mitigation Measure B-1a) coastal California gnatcatcher habitat approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands); • Baseline biological data for all coastal California gnatcatcher habitat; • Designation of a land management entity approved by the CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands) to provide in-perpetuity management; • A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan; • Designation of responsible parties and their roles (*e.g.,* provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity); and • Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to CPUC, BLM, Wildlife Agencies, and USDA Forest Service (for mitigation parcels to be National Forest lands).
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-32, SS-CM-19, SS-CM-20, and SS-CM-21.
Location	Occupied gnatcatcher habitat.
Monitoring/Reporting Action	A qualified biologist shall oversee surveys and ensure compliance with APMs and avoidance/minimization/mitigation measures. BLM and CPUC shall approve habitat restoration plans, habitat acquisition plans, and long-term habitat management plans, and ensure their implementation.
Effectiveness Criteria	Impacts to coastal California gnatcatchers are avoided/minimized/mitigated. Habitat restoration plans are implemented and meet success criteria, and long-term habitat management is provided for all mitigation sites.
Responsible Agency	BLM, CPUC, USFWS, CDFG, State parks (for ABDSP) and USDA Forest Services (for USFS lands).
Timing	Pre-, during and post construction.
Interpretation & Approach	Reference to ABDSP applicable only for mitigation parcels.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-8a: Conduct pre-construction surveys and monitoring for breeding birds.** All vegetation clearing, except tree trimming or removal, shall take place between August 16 and January 14 (*i.e.,* outside of the general avian breeding season of January 15 through August 15). Tree removal or trimming shall take place between September 16 and December 31 (*i.e.,* outside the raptor breeding season of January 1 through September 15).
	— **(B-8a)** If project construction (not vegetation clearing or tree trimming/removal) cannot occur completely outside the general avian breeding season, then pre-construction surveys for non-listed bird species' nests shall be conducted by a qualified biologist within 100 feet of the construction zone within 10 calendar days prior to the initiation of construction that would occur between January 15 and August 15. The results of the survey shall be submitted to the Wildlife Agencies for review and approval prior to initiating any construction activities.
	— **(B-8a)** 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 10 calendar days prior to the initiation of construction that would occur between January 1 and September 15. The results of the survey shall be submitted to the Wildlife Agencies for review and approval prior to initiating any construction activities.
	— **(B-8a)** If no active nests are observed, construction may proceed. If active nests are found, work may proceed provided that construction activity is 1) located at least 500 feet from raptor nests (USFWS, 2007b), 2) located at least 160 to 250 feet from occupied burrowing owl burrows (CDFG, 1995; see Mitigation Measure B-7d), 3) located at least 300 feet from listed bird species nests (see Mitigation Measure B-7e and B-7l), 4) located at least 100 feet from non-listed bird species nests, and 5) noise levels do not exceed 60 dB(A)hourly Leq at the edge of nesting territories (American Institute of Physics, 2005) as determined by a qualified biologist in coordination with a qualified acoustician. There may be a reduction of these buffer zones depending on site-specific conditions or the existing ambient level of activity. The Applicant shall contact Wildlife Agencies to determine the appropriate buffer zone. In the case of raptors (except the burrowing owl), the noise level restriction stated above does not apply (USFWS, 2007b). Otherwise, if the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. If noise levels still exceed 60 dB(A) Leq hourly at the edge of nesting territories and/or a no-construction buffer cannot be maintained, construction shall be deferred in that area until the nestlings have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. The qualified biologist shall be responsible for documenting the results of the surveys and the ongoing monitoring and for reporting these results to the CPUC, BLM, Wildlife Agencies, State Parks (for construction in ABDSP), and USDA Forest Service (for alternatives with construction on National Forest lands).
Location	Entire project area.
Monitoring/Reporting Action	BLM/CPUC biological monitor shall oversee surveys and monitoring to ensure compliance with APMs and the mitigation.
Effectiveness Criteria	Successful avoidance/minimization of impacts to nesting birds.
Responsible Agency	BLM, CPUC, and CDFG.
Timing	Pre- and during construction.
Interpretation & Approach	Reference to ABDSP is not applicable to FESSR.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	**B-9a: Survey for bat nursery colonies.** A CDFG-approved biologist shall conduct a habitat assessment for bat nursery colonies prior to any construction activity. Then, the approved biologist shall conduct a survey for bat nursery colonies or signs of such colonies prior to construction. Direct impacts to a nursery colony site shall not be allowed, and approach of, or entrance to, an active nursery colony site shall be prohibited. Before any blasting or drilling in the vicinity of a nursery colony site, the CDFG-approved biologist shall work with the construction crew to devise and implement methods to minimize potential indirect impacts to the nursery colony site from falling rock or substantial vibration (while a nursery colony is active). The methods shall include an option to halt any construction activity that would cause falling rock, substantial vibration impacts, or any other construction-related impact (including lighting used for night work) to a nursery colony as determined by the approved biologist, until the colony is inactive. Should falling rock block the entrance to a nursery colony site, the contractor shall work with the approved biologist to re-open an entrance to the site.
Location	Areas with potential to support bat nursery colonies (typically caves or rock crevices in the desert).
Monitoring/Reporting Action	BLM/CPUC biological monitor shall oversee surveys and ensure avoidance of impacts to bat nursery colonies.
Effectiveness Criteria	Successful avoidance of impacts to bat nursery colonies.
Responsible Agency	BLM, CPUC, and CDFG.
Timing	Pre- and during construction.
Interpretation & Approach	None required.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-10a: Utilize collision-reducing techniques in installation of transmission lines.** The Applicant shall install the transmission lines utilizing Avian Power Line Interaction Committee standards for collision-reducing techniques as outlined in "Mitigating Bird Collisions with Power Lines: The State of the Art in 1994" (APLIC, 1994) as follows. • Placement of towers and lines shall not be located above existing towers and lines, topographic features, or tree lines to the maximum extent practicable. Power lines should be clustered in the vertical and horizontal planes aligned with existing geographic features or tree lines, and located parallel (rather than perpendicular) to prevailing wind patterns to the maximum degree feasible. • Additionally, overhead lines that are located in highly utilized avian flight paths shall be marked utilizing fixed mount Firefly Flapper/Diverters, swan flight diverter coils, or other diversion devices, if proven more effective, as to be visible to birds and to reduce avian collision with power lines.
	— **(B-10a)** Where such markers are installed, the Applicant shall fund a study to determine the effectiveness of the markers as a collision prevention measure since there are few, if any, studies that show if such markers work, especially on transmission lines (CEC, 2007). The Applicant shall develop a draft study protocol and submit it to the Wildlife Agencies and State Parks, as well as to CPUC and BLM, for review. The Applicant shall continue to work with these agencies until approval of a final study protocol is obtained. If the study shows the markers to be ineffective, the Applicant shall coordinate with the Wildlife Agencies and State Parks (for markers in ABDSP) to develop alternate collision protection measures.
	— **(B-10a)** The Applicant shall implement an avian reporting system for documenting bird mortalities to help identify problem areas. The reporting system shall follow the format in Appendix C of "Suggested Practices for Avian Protection On Power Lines: The State of the Art in 2006" (APLIC, 2006) or a similar format. The Applicant shall submit a draft reporting protocol and reporting system to the Wildlife Agencies and State Parks, as well as to CPUC and BLM, for review and approval. The Applicant shall continue to work with these agencies until approval of a final reporting protocol and reporting system is obtained. The Applicant shall develop and implement methods to reduce mortalities in identified problem areas. The methods shall be approved by the Wildlife Agencies, State Parks (for problem areas in ABDSP), CPUC, and BLM prior to implementation. Bird mortality shall continue to be documented in the problem areas per the avian reporting system to determine the effectiveness of the mortality reduction methods and to determine if new methods need to be developed.
Location	Highly utilized avian flight paths
Monitoring/Reporting Action	BLM/CPUC biological monitor shall ensure installation of markers. BLM and CPUC shall ensure that the Applicant funds and implements a study to document bird mortalities.
Effectiveness Criteria	Markers installed, bird mortality study implemented, and corrective measures taken.
Responsible Agency	CPUC, BLM, State Parks (for ABDSP), USFWS and CDFG
Timing	During and post construction.
Interpretation & Approach	Reference to ABDSP is not applicable to FESSR.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	**B-11a: Prepare and implement a Raven Control Plan.** The Applicant shall prepare and implement a Raven Control Plan where it occurs in FTHL habitat inside and outside FTHL MAs. The raven control plan shall include the use of raven perching/nesting deterrents (such as those manufactured by Prommel Enterprises, Inc. [www.ZENAdesign.com], Mission Environmental [www.missionenviro.co.za], or Kaddas Enterprises, Inc. [www.kaddas.com] and/or shall describe the procedure for obtaining a permit from the USFWS Law Enforcement Division to legally remove ravens. The plan shall identify the purpose of conducting raven control; provide training in how to identify raven nests and how to determine whether a nest belongs to a raven or a raptor species; describe the seasonal limitations on disturbing nesting raptors; and describe procedures for documenting the activities on an annual basis. The Applicant shall obtain approval of this plan from the USFWS prior to the start of construction. The Applicant shall work with the USFWS until approval of a plan is obtained.
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-19.
Location	FTHL habitat inside and outside FTHL MAs, and where desert tortoise has potential to occur?, outside ABDSP.
Monitoring/Reporting Action	BLM/CPUC biological monitor shall verify that SDG&E submitted a raven control plan and received approval from USFWS prior to construction, and that the plan is implemented after construction.
Effectiveness Criteria	A raven control plan is submitted by SDG&E, approved by USFWS, and implemented.
Responsible Agency	BLM, CPUC, and USFWS Law Enforcement Division.
Timing	Pre- and post construction.
Interpretation & Approach	8/20/09: The Raven Control Plan does not have to be in place prior to construction for Segment 4, Mt. Springs Grade. Reference to ABDSP is not applicable to FESSR.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	— **B-12a: Conduct maintenance activities outside the general avian breeding season.** The Applicant shall educate all maintenance workers about the sensitivity of biological resources associated with the project and the necessity to avoid unauthorized impacts to them.
	— **(B-12a)**In areas not cleared of vegetation in the prior two years, all vegetation clearing, except tree trimming or removal, shall take place between September 16 and February 14 (*i.e.,* outside of the general avian breeding season of February 15 through September 15). Tree trimming or removal shall only take place between September 16 and December 31 (*i.e.,* outside the raptor breeding season of January 1 through September 15). Other maintenance activities shall occur outside the general avian breeding season where feasible. For other maintenance activities that cannot occur outside the above-listed breeding seasons, a qualified biologist shall work with a qualified acoustician to determine if a maintenance activity would meet or exceed the 60 dB(A) Leq hourly noise threshold where nesting territories of the coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and burrowing owl occur. If the noise threshold would not be met or exceeded at the edge of their nesting territories, then maintenance may proceed. If the noise threshold would be met or exceeded at the edge of their nesting territories, pre-maintenance surveys for nests of these species shall be conducted by a qualified biologist (USFWS permitted biologist for gnatcatcher, vireo, and flycatcher) within 300 feet of the maintenance area no more than seven days prior to initiation of maintenance that would occur between February 15 and August 30 for the gnatcatcher, March 15 and September 15 for the vireo, April 15 and September 15 for the flycatcher, and February 1 and August 31 for the burrowing owl. If active nests are found, work may proceed provided that methods, determined by the qualified acoustician to be effective, are implemented to reduce noise below the threshold. These methods include, but are not limited to, turning off vehicle engines and other equipment whenever possible and/or installing a protective noise barrier between a nesting territory and maintenance activities. If the qualified acoustician determines that no methods would reduce noise to below the threshold, maintenance shall be deferred until the nestlings have fledged as determined the qualified biologist. Where noise-reducing methods are employed, active nests shall be monitored by the qualified biologist on a weekly basis until maintenance is complete or until the nestlings fledge, whichever comes first. The qualified biologist shall be responsible for documenting the results of the pre-maintenance nest surveys and the nest monitoring and for reporting these results to the CPUC, BLM, Wildlife Agencies, State Parks (for maintenance in ABDSP), and USDA Forest Service (for alternatives with maintenance on National Forest lands).
	— **(B-12a) Animal Burrows/Dens.** If any animal burrows or dens are identified during the pre-maintenance surveys for active bird nests, soil in a brush-clearing area shall be sufficiently dry before brush clearing to prevent damage to burrows or dens. At any time of year where maintenance would occur in occupied SKR habitat, all equipment and vehicles shall remain on existing access roads/staging areas (*e.g.,* they shall not pull off the shoulder) to prevent the crushing of SKR burrows.
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-43, G-CM-44, G-CM-45, G-CM-46, G-CM-47, G-CM-48, G-CM-49, G-CM-50, and G-CM-51.
Location	Entire project area.
Monitoring/Reporting Action	A qualified biologist shall conduct surveys and monitoring, and ensure compliance with APMs and the mitigation.
Effectiveness Criteria	Successful avoidance/minimization of impacts to nesting birds and prevention of damage to burrows or dens.
Responsible Agency	BLM, CPUC, USFWS, CDFG, state parks (for ABDSP) and USDA Forest Service (for USFS land).
Timing	Post construction.
Interpretation & Approach	Reference to ABDSP is not applicable to FESSR. Reference to ABDSP applicable only for mitigation parcels.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

MITIGATION MEASURE	**B-12b: Conduct maintenance when arroyo toads are least active.** To avoid impacts to arroyo toads during project maintenance (specifically the use and maintenance of access roads within 2 kilometers of occupied toad habitat), use and maintenance of these access roads shall only occur between two hours after sunrise until two hours before sunset.
Location	Access roads where occupied habitat (or potential habitat where absence has not been established) occurs.
Monitoring/Reporting Action	A qualified biologist shall ensure compliance with construction time restrictions.
Effectiveness Criteria	Avoidance of impacts to arroyo toads on access roads
Responsible Agency	BLM, CPUC
Timing	Post construction.
Interpretation & Approach	None required.
MITIGATION MEASURE	**B-12c: Maintain access roads and clear vegetation in Quino checkerspot butterfly habitat.** If access roads in QCB-occupied or potentially occupied habitat (see Impact B-7J and Mitigation Measure B-7i) are maintained (*i.e.,* regraded) and vegetation around structures is cleared at least once every two years, then no additional mitigation shall be required for this ongoing maintenance. If more than two years pass without regrading or clearing, then the maintenance shall be considered a new impact to QCB habitat and shall be mitigated as prescribed in Mitigation Measure B-7i (*i.e.,* protocol pre-maintenance survey, biological monitoring, and avoidance or mitigation).
Location	Access roads in occupied or potential occupied habitat.
Monitoring/Reporting Action	A qualified biologist shall provide monitoring to ensure compliance.
Effectiveness Criteria	Avoidance or mitigation of impacts to QCB
Responsible Agency	BLM, CPUC
Timing	Post construction.
Interpretation & Approach	None required.
BIO-APM-1	SDG&E would perform any detailed on-the-ground protocol surveys with regard to specific sensitive plant or wildlife species whose habitat would be impacted by the project based on final design in accordance with federal or State regulations or statutes. SDG&E would submit results of these surveys to the USFWS and CDFG ~~and consult on reasonable and feasible mitigation measures for potential impacts, prior to any ground disturbing activities in a particular area. Mitigation would prioritize avoidance as the primary means to address impacts. If avoidance is not feasible, then relocation/restoration would be implemented. Where relocation/restoration is not feasible or deemed not to fully address impacts, then mitigation though SDG&E's NCCP mitigation creditsor if necessary compensation via another on- or offsite purchase or dedication of habitat at a ratio of 2:1 for impacts inside preserves and 1:1 for impacts outside of preserves would be identified and implemented~~. (SDG&E)
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-2	Prior to construction, all SDG&E's contractors, subcontractors and project personnel would receive training regarding the appropriate work practices necessary to effectively implement the biological APMs and to comply with the applicable environmental laws and regulations including appropriate wildlife avoidance, and impact minimization procedures, the importance of these resources and the purpose and necessity of protecting them; and methods for protecting sensitive ecological resources. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-4.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

Location	Entire project area.
Timing	Pre-construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-3	Except when not feasible due to physical or safety constraints, all Project vehicle movement would be restricted to existing and constructed roads as a part of the project and determined and marked by SDG&E in advance for the contractor, contractor-acquired accesses, or public roads. New access road construction for the project would be allowed year-round. However, when feasible, every effort would be made to avoid constructing roads during the nesting season. When it is not feasible to keep vehicles on existing access roads or to avoid constructing new access roads during the nesting, breeding, or flight season, SDG&E would perform a site survey, or more as appropriate, in the area where the work is to occur. This survey would be performed to determine presence or absence of endangered nesting birds, or other endangered species in the work area. SDG&E would submit results of this survey to the USFWS and CDFG and consult on reasonable mitigation measures to avoid or minimize for potential impacts, prior to vehicle use off existing access roads or the construction of new access roads. However, this survey would not replace the need for SDG&E to perform detailed on-the-ground surveys otherwise required by BIO-APM-1. Parking or driving underneath oak trees is not allowed in order to protect root structures. In addition to regular watering to control fugitive dust created during clearing, grading, earth-moving, excavation, and other construction activities which could interfere with plant photosynthesis, a 15-mile-per-hour speed limit shall be observed on dirt access roads to reduce dust and allow reptiles and small mammals to disperse. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-5 and G-CM-25.
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS. Note: (10/20/09) All Project vehicle movement will be restricted to existing roads and roads constructed as part of the project. These roads will be determined and marked by SDG&E in advance.
BIO-APM-4	The area limits of Project construction and survey activities would be predetermined based on temporary and permanent disturbance areas noted on final design engineering drawings with activity restricted to and confined within those limits. Survey personnel shall keep survey vehicles on existing roads. During Project surveying activities, brush clearing for footpaths, line-of-sight cutting, and land surveying panel point placement in sensitive habitat would require prior approval from the project biological resource monitor in conformance with the APMs. Hiking off roads or paths for survey data collection is allowed year-round as long as other APMs are met. ~~Stringing of new wire and reconductoring for the project would be allowed year round in sensitive habitats if the conductor is not allowed to drag on the ground or in brush and all vehicles used during stringing remain on Project access roads. Where stringing requires that conductor drag on the brush or ground or vehicles leave Project access roads, SDG&E would perform a site survey (or more as appropriate) to determine presence/absence of endangered nesting birds or other endangered species in the work area. SDG&E would submit results of this survey to the USFWS and CDFG and consult on reasonable and feasible mitigation measures for potential impacts prior to dragging wire on the ground or through brush or taking vehicles off Project access roads. However, this survey would not replace the need for SDG&E to perform detailed on-the-ground surveys as otherwise required by BIO-APM-1.~~ No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate limits of survey or construction activity where any sensitive biological resources or wildlife habitats are encountered in the field. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-8.
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

BIO-APM-5	To the extent feasible, access roads would be built at right angles to the streambeds and washes; where not feasible for access roads to cross at right angles, SDG&E would limit roads constructed parallel to streambeds or washes to a maximum length of 500 feet at any one transmission line crossing location. Such parallel roads would be constructed in a manner that minimizes potential adverse impacts on "waters of the U.S." or waters of the State. Streambed crossings and roads constructed parallel to streambeds would require review and approval of necessary permits from the ACOE, CDFG, and RWQCB. Culverts would be installed where needed for right angle crossings but rock crossings would be utilized across most right angle drainage crossings. All construction and maintenance activities would be conducted in a manner that would minimize disturbance to vegetation, drainage channels and stream banks (*e.g.,* structures would not be located within a stream channel, construction activities would avoid sensitive features). ~~Prior to construction in streambeds and washes, SDG&E would perform a pre-activity survey, or more as appropriate, to determine the presence/absence of endangered riparian species. However, this survey would not replace the need for SDG&E to perform detailed on-the-ground surveys as otherwise required by the BIO-APM-1.~~ (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-27.
Location	Entire project area.
Timing	During and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-6	In the construction, operation, and maintenance of the project, SDG&E would comply with all applicable environmental laws and regulations, including, without limitation, those regulating and protecting wildlife and its habitat. (SDG&E)
Location	Entire project area.
Timing	During and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-7	Littering is not allowed. Project personnel would not deposit or leave any food or waste in the project area, and no biodegradable or non-biodegradable debris would remain in the right-of-way following completion of construction. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-9.
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-8	Prior to construction, plant population boundaries designated as sensitive ~~by USFWS or CDFG and other resources designated sensitive by SDG&E and resource agencies~~ would be clearly delineated. ~~with clearly visible flagging or fencing, which shall remain in place for the duration of construction.~~ Flagged areas would be avoided to the extent practicable during construction activities in that area. ~~Where these areas cannot be avoided, focused surveys for covered plant species shall be performed in conformance with BIO-APM-1, and the responsible resource agency(s) would be consulted for appropriate mitigation and/or revegetation measures prior to disturbance. Notification of presence of any covered plant species to be removed in the work area would occur within ten (10) working days prior to Project activity, during which time the USFWS or CDFG may remove such plant(s) or recommend measures to minimize or reduce the take. If neither USFWS nor CDFG has removed such plant(s) within ten (10) working days following written notice, SDG&E may proceed with work and cause a take of such plant(s), if minimization measures are not implemented.~~ (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-33.
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

BIO-APM-9	Brush clearing around any Project facilities (*e.g.,* structures, substations) for fire protection, visual inspection or Project surveying, in areas which have been previously cleared or maintained within a two-year or shorter period shall not require a pre-activity survey. In areas not cleared or maintained within a two-year period, brush clearing shall not be conducted during the breeding season (~~March through August~~) without a pre-activity survey for vegetation containing active nests, burrows, or dens. ~~The pre-activity survey performed by the onsite biological resource monitor would make sure that the vegetation to be cleared contains no active migratory bird nests, burrows, or active dens prior to clearing. If occupied migratory bird nests are present, fire protection or visual inspection brush clearing work would be avoided until after the nesting season, or until the nest becomes inactive. If no nests are observed, clearing may proceed. Where burrows or dens are identified in the reconnaissance-level survey, soil in the brush clearing area would be sufficiently dry before clearing activities occur to prevent mechanical damage to burrows that may be present.~~ (SDG&E)
Location	Entire project area.
Timing	Post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-10	No wildlife, including rattlesnakes, may be harmed except to protect life and limb. Firearms shall be prohibited in all project areas except for those used by security personnel. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-36.
Location	Entire project area.
Timing	Pre-, during and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-11	Feeding of wildlife is not allowed. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-37.
Location	Entire project area.
Timing	Pre-, during and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-12	Project personnel are not allowed to bring pets to any project area in order to minimize harassment or killing of wildlife and to prevent the introduction of destructive animal diseases to native wildlife populations. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-38.
Location	Entire project area.
Timing	Pre-, during and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-13	Plant or wildlife species may not be collected for pets or any other reason. (SDG&E)
Location	Entire project area.
Timing	Pre-, during and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-14	~~All steep-walled trenches or excavations used during construction shall be inspected twice daily (early morning and evening) to protect against wildlife entrapment. If wildlife is located in the trench or excavation, the onsite biological resource monitor shall be called immediately to remove them if they cannot escape unimpeded. The onsite biological resource monitor would make required contacts with the USFWS and CDFG resource personnel and obtain verbal approval prior to removing any entrapped wildlife.~~ If the biological resource monitor is not qualified to remove the entrapped wildlife, a recognized wildlife rescue agency (such as Project Wildlife) may be employed to remove the wildlife and transport them safely to other suitable habitats. (SDG&E)
Location	Entire project area.
Timing	During and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS. Note (10/20/09): If wildlife becomes entrapped in a trench or excavation, the onsite biological resource monitor shall be called immediately.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

BIO-APM-15	Emergency repairs may be required during the construction and maintenance of the project to address situations (*e.g.,* downed lines, slides, slumps, major subsidence, etc.) that potentially or immediately threaten the integrity of the project facilities. During emergency repairs the APMs shall be followed to the fullest extent practicable. Once the emergency has been abated, any unavoidable environmental damage would be reported to the project biological construction monitor, who would promptly submit a written report of such impacts to the USFWS and CDFG and any other government agencies having jurisdiction over the emergency actions. If required by the government agencies, the biological construction monitor would develop a reasonable and feasible mitigation plan consistent with the APMs and any permits previously issued for the project by the governmental agencies. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-10.
Location	Entire project area.
Timing	During and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-16	Environmentally sensitive tree trimming locations for the project would be identified in SDG&E's existing vegetation management ~~tree trim~~ database utilized by ~~tree~~ trim contractors. ~~The biological field construction monitor shall be contacted prior to~~ Trimming ~~in environmentally sensitive areas Whenever feasible, trees in environmentally sensitive areas, such as areas of riparian or native scrub vegetation,~~ would be scheduled ~~for~~ trimming during non-sensitive (*i.e.,* outside breeding or nesting) times. ~~Where trees cannot be trimmed during non-sensitive times, SDG&E would perform a site survey, or more as appropriate, to determine presence or absence of endangered nesting bird species in riparian or native scrub vegetation. SDG&E would submit results of this survey to the USFWS and CDFG and consult on mitigation measures for potential impacts, prior to tree trimming in environmentally sensitive areas. However, this survey would not replace the need for SDG&E to perform detailed on-the-ground surveys as otherwise required by BIO-APM-1.~~ Where riparian areas with overstory vegetation are crossed, tree removal (*i.e.,* clear-cut) widths would be varied where feasible to minimize visual landscape contrast and to maintain habitat diversity at established wildlife corridor edges. Where tree removal widths cannot be varied, SDG&E would consult with the USFWS and CDFG to develop alternative tree removal options that could reasonably maintain edge diversity. (SDG&E)
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS. Note (10/20/09): Where trees cannot be trimmed outside of the breeding or nesting seasons, a biological monitor would perform a pre-activity survey to determine the presence or absence of nesting birds.
BIO-APM-17	All new access roads or spur roads constructed as part of the project that are not required as permanent access for future Project maintenance and operation would be permanently closed. ~~Where required, roads would be permanently closed using the most effective feasible and least environmentally damaging methods appropriate to that area with the concurrence of the underlying landowner and the governmental agency having jurisdiction (*e.g.,* stockpiling and replacing topsoil or rock replacement). This would limit new or improved accessibility into the area.~~ Mowing of vegetation can be an effective method for protecting the vegetative understory while at the same time creating access to the work area. Mowing should be used when permanent access is not required since, with time, total revegetation is expected. If mowing is in response to a permanent access need, but the alternative of grading is undesirable because of downstream siltation potential, it should be recognized that periodic mowing would be necessary to maintain permanent access. The project biological construction monitor shall conduct checks on mowing procedures to ensure that mowing for temporary or permanent access roads is limited to a 14-foot-wide area on straight portions of the road and a 16- to 20-foot-wide area at turns, and that the mowing height is no less than 4 inches from finished grade. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-30 and G-CM-31.
Location	Entire project area.
Timing	During and post construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

BIO-APM-18	In areas designated as sensitive by SDG&E or the resource agencies, to the extent feasible structures and access roads would be designed to minimize impacts to sensitive features. These areas of sensitive features include but are not limited to high-value wildlife habitats, sensitive vegetation communities, and high value plant habitats, and/or to allow conductors to clearly span the features, within limits of standard structure design. If the sensitive features cannot be completely avoided, structures and access roads would be placed to minimize the disturbance to the extent feasible. When it is not feasible to avoid constructing poles or access roads in high value wildlife habitats, SDG&E would perform a site survey to determine presence or absence of endangered species in sensitive habitats. SDG&E would submit results of this survey to the USFWS and consult on mitigation measures for potential impacts, prior to constructing structures or access roads. However, this survey would not replace the need for SDG&E to perform detailed on-the-ground surveys as otherwise required by BIO-APM-1. Where it is not feasible for access roads to avoid sensitive water resource features, such as streambed crossings, such crossings would be built at right angles to the streambeds. Where such crossings cannot be made at right angles, roads constructed parallel to streambeds would be limited to a maximum length of 500 feet at any one transmission line crossing location. Such parallel roads would be constructed in a manner that minimizes potential adverse impacts on "waters of the U.S." Streambed crossings or roads constructed parallel to streambeds would require review and approval of necessary permits from the ACOE, CDFG, and RWQCB. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measures G-CM-11, G-CM-27, and G-CM-42.
Location	Entire project area where sensitive features are present.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-19	Restoration and habitat enhancement and mitigation measures developed during the consultation period with the BLM under Section 7 of the Endangered Species Act (ESA) would be implemented and complied with as specified in the Biological Opinion (BO) of the USFWS. The Section 7 process would be used to obtain an incidental take authorization through a compensation-based mitigation program for permanent impacts to occupied sensitive plant and animal habitat at a ratio of 1:1 or 2:1 based on site-specific studies, as outlined in BIO-APM-1. The Section 7 process may include consideration of SDG&E's existing NCCP mitigation credits as compensation for project impacts. (SDG&E)
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-20	In construction areas where re-contouring is not required, vegetation shall be left in place wherever possible to avoid excessive root damage and allow for re-sprouting. (SDG&E)
Location	Entire project area.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-21	Structures shall be constructed to conform to "Suggested Practices for Raptor Protection on Power Lines" (Raptor Research Foundation, Inc. 1981), to minimize impacts to raptors. (SDG&E)
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-22	~~Species identified as sensitive by the land managing agency shall be salvaged where avoidance is not feasible in accordance with State law. Generally,~~ Salvage may include removal and stockpiling for replanting. ~~on site, removal and transplanting out of surface disturbance area, removal and salvage by private individuals, and removal and salvage by commercial dealers, or any combination.~~ (SDG&E)
Location	Entire project area.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

BIO-APM-23	Only the minimum amount of vegetation necessary for the construction of structures and facilities will be removed. Topsoil located in areas containing sensitive habitat shall be conserved during excavation and reused as cover on disturbed areas to facilitate re-growth of vegetation. Topsoil located in developed or disturbed areas is excluded from this APM. (SDG&E)
Location	Entire project area.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-24	~~Construction holes left open overnight shall be covered.~~ Covers shall be secured in place ~~nightly prior to workers leaving the site~~ and shall be strong enough to prevent livestock or wildlife from falling through ~~and into a hole. Holes and/or trenches shall be inspected prior to filling to ensure absence of mammals and reptiles.~~ (SDG&E)
Location	Entire project area.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-25	Disturbed soils shall be revegetated ~~with an appropriate seed mix that does not contain invasive non-native plant species~~. (SDG&E)
Location	Entire project area.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-26	Excavations shall be sloped on one end to provide an escape route for small mammals and reptiles. (SDG&E)
Location	Entire project area.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-27	1. Prior to construction, SDG&E shall remove all existing raptor nests from structures that would be affected by project construction. 2. Removal of nests shall occur outside the raptor breeding season (January to July). 3. If it is necessary to remove an existing raptor nest during the breeding season, a qualified biologist shall survey the nest prior to removal to determine if the nest is active. A nest would be considered active if it contains eggs or fledglings. If the nest does not contain eggs or nestlings and is inactive, it shall be removed promptly. If a nest is determined to be active, the nest shall not be removed and the biologist shall monitor the nest to ensure nesting activities/breeding activities are not disrupted. If the biological monitor determines that project activities are disturbing or disrupting nesting activities, the monitor shall make feasible recommendations to reduce the noise and/or disturbance in the vicinity of the nest. (SDG&E)
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.

Table 4. Mitigation Measures and Applicant Proposed Measures – Biological Resources

BIO-APM-28	Potential roost trees that must be removed will be surveyed and identified in the field for application of the following procedures: *Before felling the tree:* 1. Trees should be removed under the warmest possible conditions. 2. Peel any sections of the exfoliating bark off the tree gently and search for any roosting bats underneath. 3. Create noise and vibrations on the tree itself. Noise and vibrations include: a. Running chain saw and making shallow cuts in the trunk (where bark has been peeled off). b. Striking the tree base with fallen limbs or tools such as hammers. *Felling the tree:* 4. Disturbance should be near-continuous for ten minutes, and then another ten minutes should pass, before the tree is felled. 5. When cutting sections of the bole, if any hollows or cavities (such as woodpecker holes) are discovered, be especially careful to check for the presence of bats in those areas. Cut slowly and carefully at all times. If possible, section bole near cavities to focus noise and vibrations, and open hollows by sectioning off a side. (SDG&E)
Location	Entire project area.
Timing	Pre- and during construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.
BIO-APM-29	Reduce construction night lighting on sensitive habitats. Exterior lighting within the project area adjacent to preserved habitat shall be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable. Vehicle traffic associated with project activities would be kept to a minimum volume and speed to prevent mortality of nocturnal wildlife species that may be moving about. (SDG&E)
	Also, see U.S. Fish and Wildlife Conservation Measure G-CM-13.
Location	Entire project area where sensitive habitats are present.
Timing	During construction.
Interpretation & Approach	For implementation, see Appendix 8N in Final EIR/EIS.

APPENDIX G – List of Cumulative Projects Related to Plant Species

CHAMBERS GROUP

List of Cumulative Projects for Sunrise Powerlink Project Related to Plant Species

Project Name	
WITHIN CNF LANDS – Within 5 miles of Project Route	
Oliver	
Kemerko	
Kenyon	
Top of the Pines	
Japatul Valley Road Subdivision	
Pine Creek Ranch	
Pine Valley Estates	
Harbison Canyon	
Volli	
Temporary Wind Measurement Testing	
Conejos Road Special Use Permit	
Old Highway 80 and Pine Creek Road Intersection Improvements	
Reconstruct Caltrans Maintenance Building Project	
Sweetwater and Viejas Creek Fuels Treatment Project	
Japatul Watershed Improvement Project	
West-Wide Energy Corridor Project	
WITHIN CNF LANDS – Throughout Descanso District	
Gold-spotted Oak Borer Fungus and Stress Study	
San Diego Gas & Electric Master Special Use Permit	
Thing Valley Spillway Improvements	
Outside of CNF -- Within 1 mile of CNF Lands Boundary and Project Route	
Chocolate Mountain	
Viejas Hills Estates	
Outside of CNF -- Within 2 miles of CNF Lands Boundary and Project Route	
La Posta Mountain Warfare Training Facility	
Outside of CNF -- Within 5 miles of CNF Lands Boundary and Project Route	
Golden Acorn Casino and Travel Center	
Outside of CNF -- Over 10 miles from CNF Lands Boundary and Within 1 mile of Project Route	
SDG&E East County (ECO) Substation Project	
Outside of CNF -- Over 10 miles from CNF Lands Boundary and Within 5 miles of Project Route	
Crestwood Wind Project	Crestwood Wind Project
	Tule Wind Energy Project
Rancho Encantada	
Stirling Energy Systems and SDG&E Solar Power Project	

APPENDIX H – List of Cumulative Proejcts Related to Wildlife Species

List of Cumulative Projects for Sunrise Powerlink Project Related to Wildlife Species

Project Name/ Species	Large-blotched Salamander	California Legless Lizard	Coastal Rosy Boa	Southwestern Pond Turtle	San Diego Ring-necked Snake	San Diego Mountain Kingsnake	San Diego Horned Lizard	Two-Striped Garter Snake	Coastal (San Diego) Cactus Wren	Bald Eagle	California Spotted Owl	Pallid Bat	Townsend's Big-eared Bat	Western Red Bat	California Leaf-nosed Bat
WITHIN CNF LANDS – Within 2 miles of Project Route															
Harbison Canyon	X	X	X		X	X	X	X	X		X	X	X	X	X
Volli	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Conejos Road Special Use Permit	X	X	X		X	X	X	X	X		X	X	X	X	X
WITHIN CNF LANDS – Within 5 miles of Project Route															
Oliver				X		X			X		X	X	X	X	X
Kemerko				X		X			X		X	X	X	X	X
Kenyon				X		X			X		X	X	X	X	X
Top of the Pines				X		X			X		X	X	X	X	X
Japatul Valley Road Subdivision				X		X			X		X	X	X	X	X
Pine Creek Ranch				X		X			X		X	X	X	X	X
Pine Valley Estates				X		X			X		X	X	X	X	X
Temporary Wind Measurement Testing						X			X	X	X	X	X	X	X
Old Highway 80 and Pine Creek Road Intersection Improvements						X			X		X	X	X	X	X
Reconstruct Caltrans Maintenance Building Project						X			X		X	X	X	X	X
Sweetwater and Viejas Creek Fuels Treatment Project						X			X		X	X	X	X	X
Japatul Watershed Improvement Project				X		X			X		X	X	X	X	X
West-Wide Energy Corridor Project				X		X			X	X	X	X	X	X	X
WITHIN CNF LANDS – Within 8 miles of Project Route															
Mt. Laguna Water Well											X	X	X	X	X
The Slope									X		X	X	X	X	X
Pine Valley Creek Soil Sample Collection Project											X	X	X	X	X
WITHIN CNF LANDS – Within 10 miles of Project Route															
Laguna and Laguna Meadow Allotments Range Analysis													X	X	
Decommissioning Unauthorized Routes in the La Posta, Long Valley, and Bear Valley areas													X		

WITHIN CNF LANDS – Over 10 miles from Project Route															
Descanso Ranger District Mine Safety Closure Project													X		
WITHIN CNF LANDS – Throughout Descanso District															
Gold-spotted Oak Borer Fungus and Stress Study												X	X	X	X
San Diego Gas & Electric Master Special Use Permit												X	X	X	X
Thing Valley Spillway Improvements												X	X	X	X
Outside of CNF -- Within 1 mile of CNF Lands Boundary and Project Route															
Chocolate Mountain	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Viejas Hills Estates	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Outside of CNF -- Within 2 miles of CNF Lands Boundary and Project Route															
La Posta Mountain Warfare Training Facility	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Outside of CNF -- Within 5 miles of CNF Lands Boundary and Project Route															
Golden Acorn Casino and Travel Center				X		X			X		X	X	X	X	X
Outside of CNF -- Over 10 miles from CNF Lands Boundary and Within 1 mile of Project Route															
SDG&E East County (ECO) Substation Project										X			X		
Outside of CNF -- Over 10 miles from CNF Lands Boundary and Within 5 miles of Project Route															
Crestwood Wind Project: Crestwood Wind Project										X			X		
Crestwood Wind Project: Tule Wind Energy Project										X			X		
Rancho Encantada										X			X		
Stirling Energy Systems and SDG&E Solar Power Project										X			X		
Outside of CNF -- Over 10 miles from CNF Lands Boundary and Within 10 miles of Project Route															
Dixieland Substation										X			X		
ENPEX Power Plant										X			X		
La Rumorosa Wind Project: La Rumorosa Wind Area										X			X		
La Rumorosa Wind Project: CAISO Project #215										X			X		
La Rumorosa Wind Project: CAISO Project #183										X			X		
La Rumorosa Wind Project: CAISO Project #159a										X			X		
La Rumorosa Wind Project: CAISO Project #32										X			X		
La Rumorosa Wind Project: CAISO Project #106a										X			X		
National Quarries (El Centro Resource Area)										X			X		