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DOCKET	
08-AFC-9	
DATE	<u>AUG 11 2010</u>
RECD.	<u>AUG 11 2010</u>

August 11, 2010

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-9
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Subject: Palmdale Hybrid Power Project – Docket 08-AFC-9
Palmdale Hybrid Power Project (PHPP) Special-Status Plants Pre-Construction Focused Survey Report

Dear Sir/Madam:

Pursuant to California Code of Regulations, title 20, Sections 1209, 1209.5, and 1210, enclosed herewith for filing please find the City of Palmdale's **Special-Status Plants Pre-Construction Focused Survey Report** the Palmdale Hybrid Power Project.

This survey and report has been undertaken in anticipation of compliance with proposed Condition of Certification BIO-11 in the PHPP Preliminary Staff Assessment. The proposed condition requires that pre-construction floristic surveys be conducted in the Spring prior to construction. Florist surveys were conducted for the power plant site and reclaimed water pipeline in March and May 2010 – these two periods were chosen to optimize the timing of the blooming periods for different species.

Please note that the enclosed submittal was filed today via electronic mail to your attention and to all parties on the attached proof of service list. Per the instructions (e-mail on August 11, 2010) of Ms. Felicia Miller, the Staff Project Manager for this siting case, we are providing three paper copies to dockets and one paper copy to her.

Yours sincerely,

Sara J. Head
Project Manager
Sara.Head@AECOM.com

Enclosure

cc: 08-AFC-9 Proof of Service List (w/encl., via email and overnight mail as indicated above)

AMEC Earth & Environmental, Inc.
3120 Chicago Avenue, Suite 110
Riverside, CA 92507
www.amec.com



August 5, 2010

Ms. Erinn Wilson
Staff Environmental Scientist
South Coast Region
18627 Brookhurst Street # 559
Fountain Valley, CA 92708
(714) 968-0953

RE: Palmdale Hybrid Power Project (PHPP) Special-Status Plants Pre-Construction Focused Survey Report

Dear Ms. Wilson:

AMEC Earth & Environmental, Inc. conducted special-status plants pre-construction focused surveys in March and May 2010 throughout PHPP areas where ground-disturbing activities may occur prior to Spring 2011. The attached report documents the results of those surveys.

Please call me at (949) 233-2134 if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Amalong", with a stylized flourish at the end.

Matt Amalong
Wildlife Biologist
AMEC Earth & Environmental, Inc.



PALMDALE HYBRID POWER PROJECT

FINAL

SPECIAL-STATUS PLANTS PRE-CONSTRUCTION FOCUSED SURVEY LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

AECOM Environment

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July 2010

AMEC Project No. 1055400421.0001.****

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1.0 INTRODUCTION

1.1 Background

AMEC Earth & Environmental, Inc. (AMEC) was contracted by AECOM Environment (AECOM) to prepare a Biological Resources Technical Report (BRTR) for the development of the proposed Palmdale Hybrid Power Project (PHPP), a nominal 570-megawatt (MW) hybrid combined-cycle and solar thermal electrical generation facility. In support of the PHPP, AMEC conducted a focused survey for special-status plants in 2006 (power plant site only), 2008 (all areas), and 2009 (transmission line route modifications).

The PHPP is currently undergoing review by the California Energy Commission (CEC) under the CEC's California Environmental Quality Act (CEQA)-equivalent process. Because it is anticipated that CEC and other agency approvals will be issued for the PHPP by the end of 2010, with construction starting shortly thereafter, pre-construction plant surveys were conducted in Spring 2010. AMEC conducted a pre-construction focused survey for special-status plants in March and May 2010 throughout PHPP areas where ground-disturbing activities may occur prior to Spring 2011.

1.2 Project and Property Description

The City of Palmdale is the applicant for development of the proposed PHPP, a nominal 570-MW hybrid combined-cycle and solar thermal electrical generation facility, and has contracted with Inland Energy, Inc. to develop the PHPP. The PHPP is located in the City of Palmdale and unincorporated areas of Los Angeles County, California (the power plant site and most linear facilities are within the City; portions of the transmission line route are within unincorporated areas). The PHPP consists of a 333-acre power plant site (including power block and solar array areas), 50-acre construction laydown area, 35.6-mile transmission line, 7.4-mile reclaimed water pipeline, 8.7-mile natural gas supply pipeline, 1-mile sanitary wastewater pipeline, and 0.5-mile potable water pipeline (Figure 1). The PHPP is expected to supply power to the rapidly growing southern California market, with the solar thermal input providing approximately 10 percent of the peak power generated by the plant during the time of day with the highest energy demand.

Surveys were conducted in March and May 2010 in those areas of the PHPP where ground-disturbing activities may occur prior to Spring 2011. The areas include the power plant site, construction laydown area, reclaimed water pipeline, and an area set aside as a Joshua Tree preserve. Any reference to "Project" in this document refers to these four areas. Pre-construction surveys of other PHPP areas (*i.e.*, transmission line, natural gas supply pipeline, and sanitary wastewater pipeline) will be conducted in the Spring of the year prior to commencement of ground-disturbing activities in the respective area.

1.2.1 Power Plant Site

The power plant consists of a hybrid of natural gas-fired combined-cycle generating equipment integrated with solar thermal generating equipment, to be developed on an approximately 333-acre site in the northern portion of the City. The combined-cycle equipment utilizes two natural gas-fired combustion turbine generators (CTG), two heat recovery steam generators (HRSG), and one steam turbine generator (STG), all of which are located in the power block. The solar thermal equipment utilizes arrays of parabolic collectors to heat a high-temperature working fluid. The heat transfer fluid (HTF) is used to boil water to generate steam. The combined-cycle equipment is integrated thermally with the solar equipment at the HRSG and both utilize the single STG that is part of the PHPP. The solar energy will be generated using parabolic trough mirror technology and will be designed to provide up to 50 MW of the PHPP's nominal 570 MW capacity.

The PHPP will permanently impact the entire 333-acre site. Habitat communities present on the power plant site are primarily Joshua Tree Woodland and Mojave Creosote Bush Scrub, with a small amount of Rabbitbrush Scrub.

1.2.2 Construction Laydown Area

The 50-acre construction laydown area is located west of the power plant site and will be permanently impacted. This area would be used for storing PHPP-related equipment; parking, staging, and maintenance of construction heavy equipment and personnel vehicles; and assembling power plant components. The construction laydown area is composed entirely of Rabbitbrush Scrub.

1.2.3 Reclaimed Water Pipeline

Reclaimed water for the PHPP cooling tower makeup and other industrial uses will be supplied from the City of Palmdale's Water Reclamation Plant (PWRP). The City will design and construct an approximately 7.4-mile, 14-inch pipeline from the PWRP to the power plant site in existing City street ROWs. No new disturbance is anticipated. Habitat communities adjacent to the City street ROWs are primarily Rabbitbrush Scrub, Joshua Tree Woodland, and developed/disturbed areas.

The PHPP's backup cooling water supply will be reclaimed water. The Antelope Valley recently drafted an Integrated Regional Water Management Plan (AVIRWMP). The AVIRWMP shows a proposed reclaimed water backbone system, linking the PWRP with the City of Lancaster's Water Reclamation Plant (LWRP), with both wastewater treatment plants producing reclaimed water. In the event of an outage in the PWRP's reclaimed water production system, the LWRP can provide a source of reclaimed water to serve as a backup for the PHPP's cooling water supply. The backbone system is already a separately planned project and no additional pipelines other than those already planned for PHPP will be needed to connect the PHPP with the backbone system based on the route shown in the AVIRWMP.

1.2.4 Joshua Tree Preserve

The City of Palmdale's Native Desert Vegetation Ordinance is designed to preserve Joshua trees. The City has proposed to set aside an approximately 40-acre area adjacent to the southwest corner of the PHPP site (on other property owned by the City). The Joshua Tree Preserve area is composed entirely of Joshua Tree Woodland. The use of the Joshua Tree Preserve is one of several options being considered for mitigating impacts to Joshua Trees. If the Joshua Tree Preserve option is selected to mitigate for PHPP impacts to Joshua trees under the Palmdale ordinance, high-quality specimens may be transplanted from the power plant site to the Joshua Tree Preserve area.

2.0 METHODS

2.1 Species Included in the Survey

For the purposes of the surveys, special-status plants include all plant species that meet one or more of the following criteria (taken from *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* [California Department of Fish and Game 2009]):

- Listed or proposed for listing as threatened or endangered under Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA (50 CFR §17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under California ESA (CESA) (Fish and Game Code §2050 *et seq.*).
- Listed as rare under the California Native Plant Protection Act (Fish and Game Code §1900 *et seq.*).
- Meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
 - Species considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2). Although CNPS List 3 (Review List – need more information) and List 4 (Watch List – limited distribution) species are not included in the definition of rare or endangered under CEQA, pre-construction focused surveys included these species.
 - Species that may warrant consideration on the basis of local significance or recent biological information.
 - Some species included on the CNDDDB *Special Plants, Bryophytes, and Lichens List* (California Department of Fish and Game 2008).

- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).

2.2 Records Search

Prior to the field surveys, a records search was conducted to identify the historical occurrences of special-status plants in the Project vicinity. The following data bases were queried:

- California Natural Diversity Data Base (CNDDDB): USGS Lancaster West, Lancaster East, Ritter Ridge, and Palmdale 7.5-minute series topographic quadrangles (CDFG 2010).
- The CNPS's Rare and Endangered Vascular Plants of California (CNPS 2010).
- Consortium of California Herbaria (<http://ucjeps.berkeley.edu/consortium/>).

Local experts (David Charlton and Andrew Sanders) were consulted with to determine the potential for special-status species occurrence and reference site populations. Additional species provided in the CEC's Biological Resources section of the PPHP Preliminary Staff Assessment (February 2010) were also included.

2.3 Protocols for Pre-Construction Surveys

Pre-construction focused surveys were conducted by qualified botanists (see Appendix 1 for surveyor resumes) for special-status plant species potentially occurring throughout accessible areas within the Project (power plant site, construction laydown area, reclaimed water pipeline, and Joshua Tree Preserve) as shown in Figure 2. Certain areas, as depicted in Figure 2, were not surveyed because they were inaccessible (e.g., U.S. Air Force Plant 42, Los Angeles World Airports (LAWA) property, railroad right-of-way [ROW]).

2.3.1 Survey Periods

Surveys were conducted March 22-26 and May 24-28, 2010 to adequately capture the floristic diversity at a level necessary to determine if special-status plants were present. These two survey periods covered the blooming periods of all special-status plant species potentially occurring on the Project sites (see Table 1).

The Joshua Tree Preserve was not surveyed during the first survey period in March due to logistical issues. The absence of special-status plant species on the power plant site and construction laydown area suggests March-blooming special-status plant species are not present on the Joshua Tree Preserve area.

According to National Oceanic and Atmospheric Administration (NOAA) data, mean rainfall totals for the winter season (*i.e.*, December, January, February) in Palmdale from 1971 through 2000 equaled 4.34 inches. A total of 5.64 inches was recorded during the 2009-2010 winter season. The 2009-2010 winter precipitation for Palmdale suggests that plant productivity was more than adequate in Spring 2010 for conducting botanical surveys.

2.3.2 Reference Sites

Reference site populations (nearby accessible occurrences of special-status plants) were visited to determine whether certain special-status species were identifiable at the time of the surveys and to obtain a visual image of the target species, associated habitat, and associated natural community. Reference site populations visited included:

- **March 22, 2010. Edwards Air Force Base (AFB) and vicinity. Locations recommended by David Charlton, Botanist for Edwards AFB.** *Cymopterus deserticola*, *Muilla coronata*, *Astragalus preussii* var. *laxiflorus* (not in bloom). Plants related to the rare plants, for comparison: *Calochortus kennedyi*, *Astragalus lentiginosus* var. *albifolius*, *Chorizanthe spinosa*, *Eriophyllum pringlei*, *Eriophyllum wallacei*.
- **May 24, 2010. Lancaster and Palmdale. Locations recommended by Andrew Sanders, Botanist and Collection Manager for the Herbarium at the University of California, Riverside.** *Calochortus striatus*, *Calystegia piersonii*.

2.3.3 Survey Guidelines

Surveys adhered to guidelines issued by the CDFG (2009), CNPS (2001), and United States Fish and Wildlife Service (USFWS 1996). Surveys involved transects spaced no more than 30 feet apart covering 100 percent of all Project areas involving proposed ground disturbance, as well as a 100-ft. buffer. Surveys were floristic in nature, meaning that every plant taxon that occurs on-site was identified to the taxonomic level necessary to determine rarity and listing status. All plant species detected were recorded in field notes or collected as voucher specimens. Plants were identified from keys, descriptions, and drawings in Hickman (ed. 1993).

3.0 RESULTS AND DISCUSSION

3.1 Records Search

Seventeen special-status plant species have been reported from the vicinity of the Project based on the records search and literature review (Table 1). Of these, none are listed as threatened or endangered under ESA or CESA. Ten species are CNPS List 1 and 2, and the remaining seven species are CNPS List 3 and 4.

3.2 Pre-Construction Focused Survey Findings

A total of 133 plant species were detected during the 2010 focused surveys (Appendix 2). The only special-status plant species observed was crowned muilla (*Muilla coronata*) (see Figure 2 for locations), which is a CNPS List 4 species. List 4 species are not considered rare under CEQA, and therefore are not required to be protected or mitigated.

Two species protected under the City of Palmdale Native Desert Vegetation Ordinance and CDNPA were observed during the focused surveys: golden cholla (*Opuntia echinocarpa*) and Joshua tree (*Yucca brevifolia*). These species, which are not listed as endangered, threatened, or rare by any of the regulatory agencies, were observed throughout the Project site.

The above findings are consistent with prior surveys (2006 and 2008), which also only found crowned muilla, Joshua trees, and golden cholla on the PHPP power plant site.

In addition to floristic species, incidental observations of wildlife species were also made during the survey (Appendix 3).

Table 1. Special-Status Plants Occurring or Potentially Occurring in the Project Vicinity

Resource Common Name Scientific Name	Status ^{1/}			Habitat and Distribution	Bloom Period	Occurrence Probability
	Federal	State	CNPS /BLM			
San Antonio milkvetch <i>Astragalus lentiginosus</i> var. <i>antonius</i>	None	None	1B.3	Dry slopes in upper and lower montane coniferous forest.	Apr-Jul	Absent. Records in San Gabriel Mtns SE of Project. Near Wrightwood. Not observed during focused surveys.
Lancaster milkvetch <i>Astragalus preussii</i> var. <i>laxiflorus</i>	None	None	1B.1	Alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands. Chenopod scrub. Known in CA only from near Lancaster and Edwards AFB, where extremely rare.	Mar-May	Absent. Known from Edwards Air Force Base N of Project. Observed reference population (not in bloom). Not observed during focused surveys.
Palmer's mariposa lily <i>Calochortus palmeri</i> var. <i>palmeri</i>	None	None	1B.2	Meadows, seeps, and vernal moist areas in chaparral, mixed conifer forest, and yellow pine forest.	Apr-Jul	Absent. Known from foothills of San Gabriel Mtns SE of Project. Not observed during focused surveys.
Alkali mariposa lily <i>Calochortus striatus</i>	None	None	1B.2 S	Alkaline meadows and ephemeral washes in chaparral, chenopod scrub, Mojavean desert scrub, and meadows.	Apr-Jun	Absent. Known from N of Project. Observed reference population. Not observed during focused surveys.
Peirson's morning-glory <i>Calystegia peirsonii</i>	None	None	4.2	Chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest. Often in disturbed areas or along roadsides or in grassy, open areas.	Apr-Jun	Absent. Known from SW of Project. Observed reference population. Not observed during focused surveys.
White pygmy-poppy <i>Canbya candida</i>	None	None	4.2 S	Sandy habitats in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	Mar-Jun	Absent. Known from N and S of Project. Not observed during focused surveys.
Brown fox sedge <i>Carex vulpinoidea</i>	None	None	2.2	Marshes and swamps, riparian woodland.	May-Jun	Absent. Suitable habitat not present within Project. Not observed during focused surveys.
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	None	None	3.2	Dry, sandy soils on dry slopes and flats in coastal scrub and chaparral habitats.	Apr-Jun	Absent. Known from San Gabriel Mtns SW of Project. Not observed during focused surveys.
Winged cryptantha <i>Cryptantha holoptera</i>	None	None	4.3	Mojavean and Sonoran desert scrub.	Mar-Apr	Absent. Known from foothills of San Gabriel Mtns SE of Project. Not observed during focused surveys.
Bailey's woolly buckwheat <i>Eriogonum baileyi</i> var. <i>praebens</i>	None	None	4.3	Great Basin scrub, meadows and seeps, and sandy areas in pinyon and juniper woodland.	May-Sep	Absent. Not known from Project area. <i>E. b.</i> var. <i>baileyi</i> was identified during surveys, but <i>E. b.</i> var. <i>praebens</i> was not observed during surveys.
Cuyama gilia <i>Gilia latiflora</i> ssp. <i>cuyamensis</i>	None	None	4.3	Sandy areas in pinyon and juniper woodland.	Apr-Jun	Absent. Known from San Gabriel Mtns S of Project. Not observed during surveys.
Pale-yellow layia <i>Layia heterotricha</i>	None	None	1B.1 S	Open areas of alkaline or clay soils in cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland.	Mar-Jun	Absent. Not currently known from Project area. Not observed during focused surveys.
Sagebrush loeflingia <i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	None	None	2.2 S	Sandy flats and dunes, sandy areas around clay slicks. Desert dunes, Great Basin scrub, Sonoran desert scrub.	Apr-May	Absent. Known from Edwards Air Force Base N of Project. <i>S. l.</i> var. <i>squarrosa</i> identified during surveys, but <i>S. l.</i> var. <i>artemisiarum</i> not observed during focused surveys.
Crowned muilla <i>Muilla coronata</i>	None	None	4.2	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	Mar-Apr	Occurs. Observed reference population. Observed during focused surveys – see Figure 2 for locations.
Short-joint beavertail <i>Opuntia basilaris</i> var. <i>brachyclada</i>	None	None	1B.2 S	Sandy soil or coarse, granitic loam in chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland, and riparian woodland.	Apr-Jun	Absent. Known from San Gabriel Mtns S of Project. Not observed during surveys.
Parish's popcornflower <i>Plagiobothrys parishii</i>	None	None	1B.1	Alkaline soils, mesic sites in Great Basin scrub and Joshua tree woodland.	Mar-Jun	Absent. Not known from Project area. Not observed during focused surveys.
Mason's neststraw <i>Stylocline masonii</i>	None	None	1B.1 S	Sandy washes in chenopod scrub and pinyon and juniper woodland.	Mar-May	Absent. Not known from Project area. Not observed during focused surveys.

Table 1. Special-Status Plants Occurring or Potentially Occurring in the Project Vicinity

Resource Common Name <i>Scientific Name</i>	Status ^{1/}			Habitat and Distribution	Bloom Period	Occurrence Probability
	Federal	State	CNPS /BLM			

1/ Status:

FEDERAL (United States Fish and Wildlife Service)

- E = Federally listed as Endangered
- T = Federally listed as Threatened
- C = Federal Candidate for listing as threatened or endangered
- BCC = Bird of Conservation Concern
- D = Federally Delisted

STATE (California Department of Fish and Game)

- E = California state-listed as Endangered
- T = California state-listed as Threatened
- R = California state-listed as Rare
- CSC = California Special Concern species
- INV = Communities that are either known or believed to be of high priority for inventory in CNDDB

CNPS (California Native Plant Society)

- 1B = CNPS list of plants that are rare, threatened, or endangered in California and elsewhere
- 2 = CNPS list of plants that are rare, threatened, or endangered in California, but more common elsewhere
- 3 = CNPS list of plants that require more information
- 4 = CNPS list of plants that have a limited distribution (Watch List)
- .1 = Seriously endangered in California
- .2 = Fairly endangered in California
- .3 = Not very endangered in California

BLM (Bureau of Land Management)

- S = BLM Sensitive species

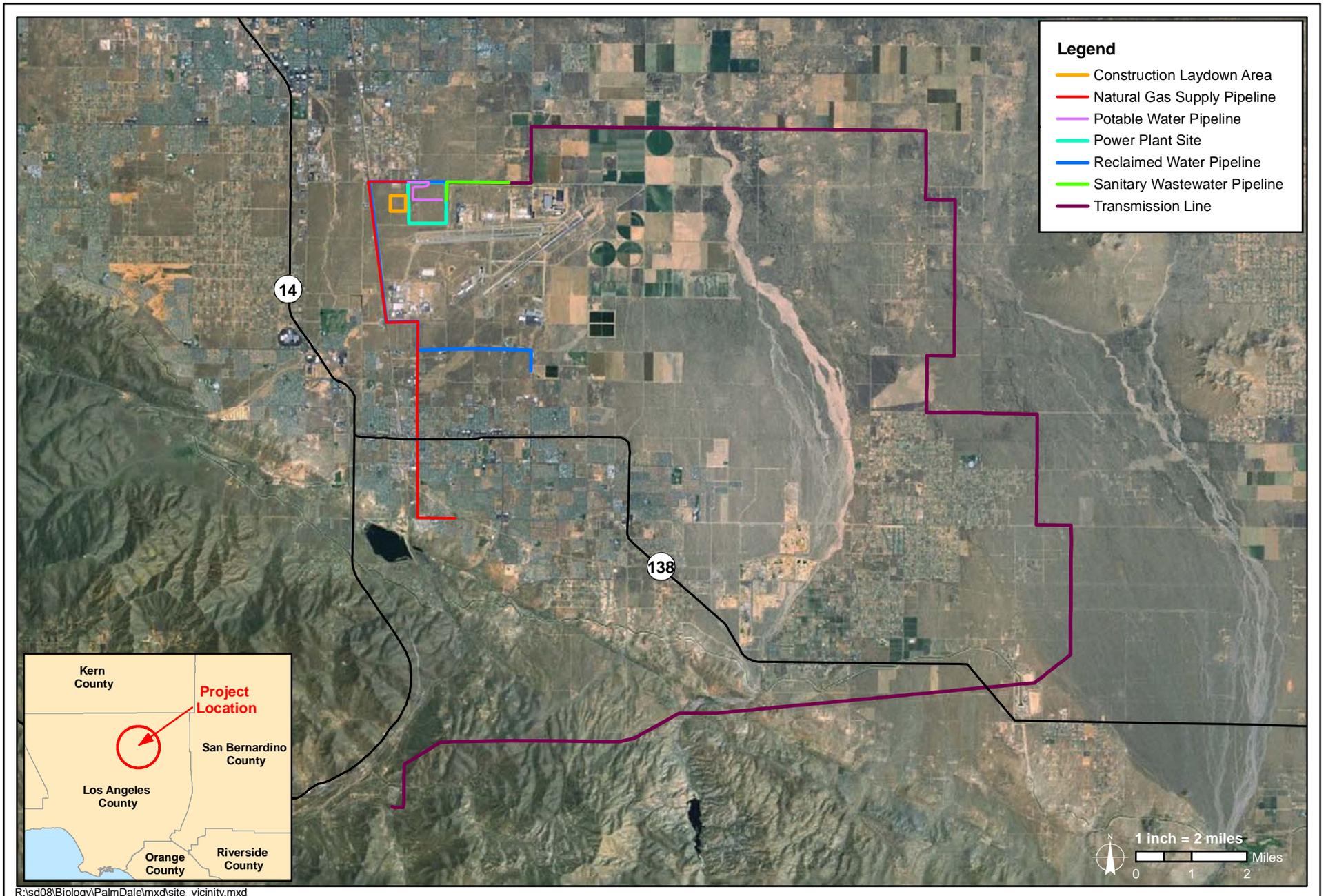
OCCURRENCE PROBABILITY

- Occurs = Observed on the site by AMEC biologists, or recorded on-site by other qualified biologists.
- High = Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
- Moderate = Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
- Low = Site is within the known range of the species but habitat on the site is rarely occupied by the species.
- Absent = A focused study failed to detect the species, or no suitable habitat is present.
- Unknown = Distribution and habitat use has not been clearly determined.

4.0 REFERENCES

- AMEC. 2008. Palmdale Hybrid Power Project: Biological Resources Technical Report. Appendix H of the PHPP Application for Certification, submitted July 30, 2008.
- California Department of Fish and Game (CDFG). 2010. California Natural Diversity Data Base, Rarefind 3, Version 3.1.0.
- CDFG. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.
- California Native Plant Society (CNPS). 2010. Inventory of Rare and Endangered Plants (online edition, v7-10b). California Native Plant Society. Sacramento, CA. Accessed from <http://www.cnps.org/inventory>.
- CNPS. 2001. CNPS Botanical Survey Guidelines.
- Charlton, David. 2010. Personal Communication: Reference Plant Populations on Edwards Air Force Base and the Antelope Valley. March and May, 2010.
- Edwards Air Force Base (AFB). 1993. Guide to Locating and Identifying Plants of Limited Distribution at Edwards AFB. Edwards AFB Environmental Management Office.
- Hickman, James C. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, California.
- Holland, V.L. and D.J. Keil. 1990. California Vegetation. California Polytechnic State University, San Luis Obispo, California.
- MacKay, Pam. 2003. Mojave Desert Wildflowers. The Globe Pequot Press, Guilford, Connecticut.
- Regents of the University of California. 2010. Consortium of California Herbaria. <http://ucjeps.berkeley.edu/consortium/2010>.
- Sanders, Andrew. 2010. Personal Communication: Reference Plant Populations in Palmdale and Lancaster, CA.
- United States Department of Agriculture (USDA). 2010. Plants Database. <http://plants.usda.gov/>. USDA, Natural Resources Conservation Service.
- United States Fish and Wildlife Service (USFWS). 1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants.

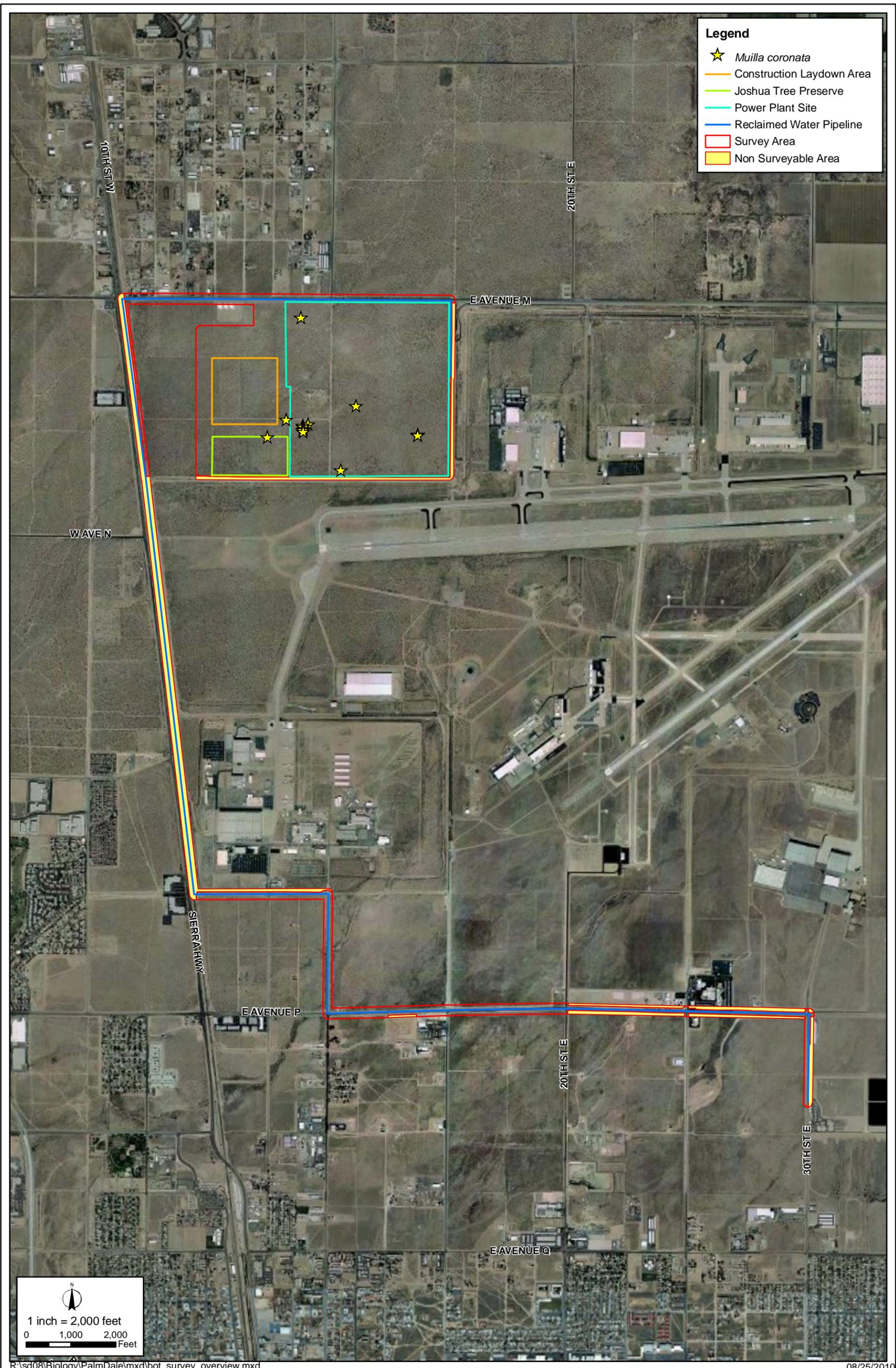
FIGURES



Palmdale Hybrid Power Project
 Vicinity and Location

FIGURE

1



Palmdale Hybrid Power Project
Special-Status Plant Surveys
Power Plant Site, Construction Laydown Area, Reclaimed Water Pipeline, Joshua Tree Preserve

FIGURE

APPENDIX 1

Qualifications of Individuals Conducting Studies



Heather Rothbard

Botanist

Professional summary

Ms. Rothbard has 7 years experience in botanical/biological survey and environmental regulatory compliance. Her experience includes rare and sensitive plant surveys, noxious weed surveys, percent cover surveys, rangeland studies including flora identification, habitat enhancement and restoration site development, monitoring, and management, biomass and species diversity data collection, biological surveys for desert tortoise and burrowing owl, and Section 404 delineation and permitting including ephemeral washes, intermittent and perennial streams, and freshwater, tree-dominated wetlands. Ms. Rothbard has managed and performed numerous plant surveys, 401/404 jurisdictional delineations, managed and performed a biological and soil salinity study on a major oilseed crop for the USDA-ARS, and held responsibility for arthropod collection and identification, identification of native and non-indigenous plants, soil and plant root collection for mycorrhizal fungi detection, and vegetation sampling and monitoring at sites in the Phoenix metro and surrounding area for the Central Arizona Phoenix Long-Term Ecological Research Project (CAP-LETER). Vegetative areas of study include low to high desert, chaparral, coastal chaparral/sage scrub, juniper/pinyon pine, coniferous and hardwood forests, grasslands, and rangelands.

Professional qualifications

DoD Plant Conservation Workshop, Berkeley, 2009

Wetland Delineation Training, 2008

40-hour HAZWOPER Training, 2008

Desert Tortoise Survey and Handling Workshop, 2007

Chiricahua Leopard Frog Survey Training, 2007

Southwestern Willow Flycatcher Survey Training, 2007

Integrated Weed Management Workshop, Montana State University, 2007

USFWS Biological Assessment Workshop, 2006

Southwest Noxious Weed Short Course, 2006, 2007

Red Brome (*Bromus rubens*) Grass Symposium, ASU, 2006

Arizona Wildfire Academy, 2006

Sahara Mustard (*Brassica tournefortii*) Workshop, Barstow, CA, August 2005

Education

Bachelor of Science, Botany: emphasis in Environmental Science and Ecology, Arizona State University, Tempe, Arizona, 2003

Memberships

Arizona-Nevada Academy of Sciences (ANAS), 2003-present

Heather Rothbard

Arizona Native Plant Society (AZNPS), 2005-present

Botanical Society of America (BSA), 2005-present

Southwest Vegetation Management Association (SWVMA), 2005-present

Western Society of Weed Science (WSWS) 2006-present

Desert Tortoise Council 2007-present

California Native Plant Society – 2007-present

California Invasive Plant Council (CAL-IPC) 2007-present

Botanical/Biological Surveys

Ms. Rothbard has conducted numerous botanical surveys including noxious weed, rare plant, percent cover, and rangeland diversity surveys in Arizona, California, and New Mexico. Vegetative areas include low to high desert, chaparral, juniper/pinyon pine, coniferous forest, grasslands, and rangelands. Clients include utilities, railroads, local, state, and federal land management departments. Ms. Rothbard has also conducted several biological surveys for desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*), and habitat for threatened and endangered bat species in California and Arizona.

Detailed core skills or details by project

Rare Plant Survey, San Vicente Road, Poway, California. San Diego County. (2009). Ms. Rothbard performed rare plant surveys along 7 miles of right of way along San Vicente Road in Poway, California. Plants surveyed for included a dozen species on the San Diego County Sensitive Species List.

Endangered Willow Monardella Habitat Enhancement, MCAS Miramar, San Diego, CA.: (Ongoing). Ms. Rothbard is the field manager for this enhancement project with the overall goal to protect existing populations of willow monardella (*Monardella linoidea* ssp. *viminea*) and improve current habitat conditions so that these populations can expand. Ms. Rothbard manages and participates in censusing, mapping, and conducting habitat assessments of existing willow monardella populations and assisted in the development of ongoing enhancement and monitoring techniques.

Spring Canyon Riparian Restoration Project, San Diego County, CA (Ongoing). AMEC has conducted multiyear protocol and sensitive species surveys, wetland delineations, and regulatory permitting. As part of the overall mitigation for project impacts, AMEC has planned and implemented wetland creation, restoration, and enhancement of over 5 acres of riparian wetlands in Spring Canyon. Ms. Rothbard is the field manager for this 5-acre site that has restored, enhanced, and created riparian habitat mitigation associated with impacts from border fence projects. Long-term activities include habitat enhancement, monitoring, and reporting.

Imperial Irrigation District Managed Marsh Planting, Calipatria, CA.: (2009). Ms. Rothbard served as Assistant Project Manager for developing and planting of a 365 acre created marsh. The Imperial Irrigation District is developing over 900 acres of a Managed Marsh for the benefit of certain listed species, including the Yuma Clapper Rail and the California Black Rail. This project encompasses 365 acres in 20 cells, and is Phase 1 of the larger 900 acre project. AMEC began the planting in early September 2009, with a required completion date of October 31, 2009, which was met. This schedule required the development of a planting and water management plan that would assure the plants adequate water during the hot weather, yet without excessively inundating plants in the lower portions of the cells. AMEC completed the project on schedule, and with excellent survivorship and

Heather Rothbard

health of the introduced plant material. Ms Rothbard supervised the field crews in the planting activities, and handled daily water management tasks in accordance with the needs of the plants and in collaboration with the client. AMEC has subcontracted with a variety of local farmers and support personnel, creating a broad base of local support and involvement, which is of considerable benefit to the Imperial Irrigation District.

Revegetation Assessment, Gallup, McKinley County, New Mexico (November-December 2008):

Ms. Rothbard managed and performed vegetation surveys within the project site and at nearby point bars to evaluate vegetation recovery resulting from reseeding activities conducted by BNSF Railroad in November 2006. The surveys were conducted to evaluate project site recovery using a random meter² plot method to determine if percent cover was within the parameters as specified by the 2006 USACE 404 permit requirements for the project site. Ms. Rothbard prepared a report that summarizes information on the recorded occurrence of species, native status, and comparisons between, the project site and a nearby undisturbed site to evaluate vegetation recovery to pre-construction conditions. In addition, recommendations and suggestions were given for future evaluation and timeline of vegetation recovery at the site.

Vegetation Identification through Airborne Photography, State-wide, Arizona. Private Client. (2009 to present).

Ms. Rothbard is managing and performing plant identification, along 180-miles of right-of-way using airborne photographs, taken by helicopter. The project includes identifying vegetation to species, determining dominant species, and determining percent cover by vegetation type. All plant identification, vegetative habitat determination, and technical writing was performed by Ms. Rothbard. Under this contract, Ms. Rothbard will assemble a training manual to aid technicians in vegetation identification within and around the right-of-way using the airborne photographs.

Noxious Weed Survey for Palo Verde-North Gila 500kV Conductor Maintenance Project, Arizona Public Service and BLM Yuma Field Office, Yuma to Gila Bend, Arizona (May 2006, July 2008 and ongoing):

Ms. Rothbard is managing and performing a noxious weed survey in the right of way of a high voltage power line that extends from Yuma to Gila Bend. All plant identification, vegetative habitat determination, and technical writing was performed by Ms. Rothbard. Under this contract AMEC performed a survey in 2008 and will perform additional surveys in 2009 and 2010. The surveys are being performed in accordance with an agreement between the AP S Land Department and the United States Bureau of Land Management (BLM). For purposes of this survey, noxious and invasive weeds are defined as species included on the Arizona Department of Agriculture's (ADA) Prohibited, Regulated, and Restricted Noxious Weeds List, and the Noxious Weed List for the Yuma Field Office (YFO) of the BLM. The project received funding through Arizona Public Service however all data collection was performed on state and federal lands including BLM and the Yuma Proving Grounds.

Palmdale Power Plant Biological Surveys, Palmdale, California. (April 2008): Ms. Rothbard performed biological surveys in the right of way of a high voltage power line. These surveys included rare and sensitive plants of the Mojave Desert, desert tortoise (*Gopherus agassizii*), and burrowing owl (*Athene cunicularia*) surveys.

Threatened and Endangered Species Surveys, United States/Mexico Border Fence Project – Tucson Sector, Gulf South Research Corporation (GSRC)/U.S. Army Corps of Engineers Fort Worth District, Pima and Santa Cruz Counties, Arizona (ongoing).

AMEC has worked as a sub-consultant to GSRC to perform biological surveys along portions of the border fence within the Tucson Sector. Ms. Rothbard performed biological surveys along the United States and Mexico Border for T&E species including Pima pineapple cactus (*Coryphantha scheeri var roopustispina*), Acuna cactus (*Echinomastus erectocentrus var acunensis*), Chiricahua leopard frog (*Rana chiricahuensis*) and habitat for threatened and endangered bat species.

Heather Rothbard

Section 404 Jurisdictional Delineation, Arizona State Lands Department, 303 Peoria East, Maricopa County, Arizona: Ms. Rothbard is serving as field reconnaissance leader to identify and establish boundaries of Section 404 jurisdictional areas on the 4,600 acre project site. Jurisdictional areas are identified and delineated in accordance with the USACE's 1987 Wetland Delineation Manual, the USACE's 2001 guidelines for conducting JDs in the arid southwest, USACE's 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, and USACE's June 2007 Rapano's Guidance Memorandum. Ms. Rothbard will present the results of the JD in a technical report. The technical report will include a description of the project area drainage features including width, depth, substrate, vegetation characteristics and connectivity to the Agua Fria and New Rivers.

Rare Plant Survey of 6 Mow Areas for the Prescott 500kV Transmission Line Maintenance Project, Chino Valley Ranger District, Prescott National Forest, Arizona. (Spring 2006): Ms. Rothbard managed and performed a plant survey for rare and sensitive plant species in the right of way of a high voltage power line. All plant identification, vegetative habitat determination, and technical writing was performed by Ms. Rothbard. The project received funding through Arizona Public Service however all data collection was performed on the Prescott National Forest.

Rangeland Survey of the Roswell Grazing Allotment, BLM Roswell Field Office, New Mexico. (Oct 2005): Ms. Rothbard performed plant identification, biomass determination, and species richness and diversity classification on grazing allotments in the Roswell, New Mexico area. Funding was provided by the BLM Roswell Field Office however the project was managed by Southwest Botanical Research, Chino Valley, Arizona.

Arizona State University Central Arizona Project – Long-Term Ecological Research, Phoenix, Arizona. (2004-2005): Ms. Rothbard performed arthropod collections and identification, native and non-indigenous plant identification, vegetation sampling and monitoring at over 32 sites in the Phoenix Metro Area. Funding was provided by the National Science Foundation however all work was managed and performed by the International Institute for Sustainability at Arizona State University.

Arkoma Connector Pipeline Environmental Field Surveys, MarkWest Energy Partners, L.P. - Atoka, Bryan, and Coal Counties, Oklahoma, AMEC Paragon. (December 2007 – February 2008) Role: Botanist/Environmental Scientist. The Arkoma Connector Pipeline will provide transportation for natural gas from the Woodford field in southeastern Oklahoma to major interstate pipeline systems and will consist of one 24-inch diameter pipeline, approximately 50 miles in length, one compressor station of approximately 10,000 horsepower, and associated pipeline support facilities, including a pig launcher and receiver, and metering equipment. Environmental components of the survey program include land use, wetlands delineation, and threatened and endangered species habitat delineation in accordance with the US Army Corp of Engineers, US Fish and Wildlife Service, and FERC regulations. The surveys were conducted in areas along the proposed pipeline 300 ft ROW.

Sharilyn Beth Norton

Botanist

Professional summary

Ms. Norton has 7 years of experience in biological field sampling. She has extensive experience in rare plant identification, vegetation sampling and analysis in a variety of habitats, including coastal sage scrub, chaparral, coastal dunes, wetlands, and desert vegetation in central and southern California. Her background includes legal compliance issues involved with NEPA, CEQA, CWA, ESA, and other federal natural resource regulations.

Professional qualifications

Education

J.D. and Master of Studies in Environmental Law, Vermont Law School, South Royalton, VT, May 1998

M.A. in Geography with emphasis in Environment and Resource Conservation, San Diego State University, August 1995

M.A. Thesis topic: "The Effects of ecosystem fragmentation upon a dune scrub community in Pismo Dunes State Vehicular Recreation Area."

Received "Outstanding Scholar Award," San Diego State University, San Diego, CA, 1991

Post-Baccalaureate work in geography in preparation for Masters program, San Diego State University, San Diego, CA, 1990 to 1991

BS, Zoology, San Diego State University, San Diego, CA, May 1990

Additional training

- The Buckwheat Family (Polygonaceae): Taxonomy, Field Identification, and Ecology, Rancho Santa Ana Botanic Garden, 2009
- Plant Identification for Coastal Southern California, Wetland Training Institute, 2007
- Fairy Shrimp Identification, Belk Institute, 2007
- Oak and Conifer Workshop – University of California Santa Barbara, 2006
- Sensitive Butterfly Workshop – Nature Festivals of San Diego County, 2006
- Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2006

Location

Riverside, California, USA

Languages

English (native)

Summary of core skills

- Extensive experience in rare plant identification
- Focused/Reconnaissance Plant Surveys
- Vegetation Sampling
- Vegetation Community Mapping



Sharilyn Beth Norton

- Habitat Restoration Enhancement Programs

Details by project

Sensitive Plant Surveys, Tehachapi Renewable Transmission Project, Southern California Edison, California (\$2,985,455; 6151000901). Performed sensitive plant surveys and vegetation communities mapping along proposed utility corridors in a variety of habitat types.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Track Upgrade from Thermal to Araz, California -- Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Performed biological surveys, vegetation mapping along 100-mile-long corridor. Services include reconnaissance surveys, focused sensitive plant surveys (Peirson's milk vetch surveys, and Algodones Dunes sunflower), and vegetation communities surveys and mapping within the 200-foot right-of-way. The field survey focuses primarily on determining the potential habitat for federal- and state-listed plant and wildlife species.

MSHCP Habitat Assessment for Burrowing Owl and Narrow Endemic Plant Species for Reclaimed Water Pipeline Project – City of Norco, sub to RGP Planning and Development Services. In accordance with the requirements of Sections 6.1.2, 6.1.3, 6.1.4, and 6.3.2 of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Chambers Group conducted habitat assessment surveys for burrowing owl (*Athene cunicularia*) and three narrow endemic plant species including San Diego ambrosia (*Ambrosia pumila*), Brand's phacelia (*Phacelia stellaris*), and San Miguel savory (*Satureja chandleri*). The field surveys focused primarily on determining the presence or potential presence of habitat for these MSHCP-listed species. Prior to commencing the field surveys, Chambers Group biologists conducted a literature review and database query to identify whether there were any existing records of the target species in the project vicinity. Following the completion of the field surveys, Chambers Group prepared draft and final technical reports of findings documenting the results of the field surveys and providing recommendations regarding the need for additional focused surveys pursuant to the guidelines published in the MSHCP.

Stormwater Channel Permits – ESRI, Redlands, San Bernardino County. Biologist. The San Bernardino County Flood Control District was the CEQA lead agency. The project involved converting approximately 1,300 linear feet of the stormwater channel into a RCB and expanding the parking lot with approximately 233 parking spaces. Utilized a formal jurisdictional delineation of Waters of the U.S. and Waters of the State, which was required by the San Bernardino County Flood Control District, to obtain a Clean Water Act (CWA) Section 404 Permit from the U.S Army Corps of Engineers (USACE), a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Lake and Streambed Alteration Agreement (SAA) from the California Department of Fish and Game.

Sensitive Plant Survey, Eastbound Auxiliary Lane on SR-91 Project, Chino Hills, CA -- California Department of Transportation, sub to Kimley Horn and Associates. Conducted focused surveys for sensitive plant species in coastal sage scrub and riparian scrub and woodlands along a 4-mile stretch of the State Route 91 corridor. Walked pedestrian transects to cover the entirety of vegetation communities identified as having potential for sensitive plant species, and recorded all plant species observed. Also mapped the vegetation communities present onsite.

Habitat Mitigation and Monitoring for Tract No. 16031, Yucaipa, CA -- Centex Homes. Monitored the revegetation of upland and riparian habitat. The revegetation components of the master plan include the creation of riparian habitat by removing exotic plant species and revegetating with native riparian and coastal sage scrub plant species. A comprehensive monitoring program was developed for the site, including the use of functional analysis to assess the progress of the restoration efforts. A report summarizing the survey results is submitted after each inspection or combined with larger annual reports.



Sharilyn Beth Norton

Habitat Mitigation and Monitoring for the Big Tujunga Wash Mitigation Bank, Los Angeles County -- LACDPW. Monitored the revegetation enhancement of upland and riparian habitat in the mitigation bank. The revegetation components of the master plan include the restoration of existing riparian habitat by removing exotic plant species and revegetating with native plant species. The plan provides for the creation of coastal sage scrub and oak woodland habitats, and programs designed to reduce the impact of exotic wildlife species on the native communities. A comprehensive monitoring program was developed for the site, including the use of functional analysis to assess the progress of the restoration efforts. A report summarizing the survey results is submitted after each inspection or combined with larger annual reports.

Restoration Installation and Revegetation Success Monitoring for the Calabasas Landfill in Los Angeles County -- Sanitation Districts of Los Angeles County (LACSD). Monitored the revegetation success and maintenance of coastal sage scrub habitat on a former landfill site. The plan for this site contains specifications for the restoration of habitat appropriate to the surrounding National Park Recreation Area, including plans for exotic plant species removal, native plant revegetation, maintenance, and performance monitoring. The annual performance monitoring report provides details on the vegetation cover, density, and species richness at the site. These details are developed from the quantitative data that are collected on permanent transects at the site.

Biological Monitoring, Kramer Junction Expansion Project Revegetation, Kramer Junction, CA -- Southern California Gas Company and Kern River Gas Transmission Company. Construction activity resulted in impacts to approximately 387 acres of Mojave Creosote Bush Scrub, 60 acres of Desert Saltbush Scrub, and 0.2 acre of Mojave Desert Wash Scrub. Conducted maintenance monitoring of the revegetation for erosion control, invasive weeds, and the general health of the mitigation plantings.

Air Force Center for Environmental Excellence/Air Force Real Property Agency, Removal Action, Former Norton AFB, California. Conducted comprehensive spatial survey for the federally endangered Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) of two conservation management areas within the former Norton AFB.



Sharilyn Beth Norton

HELIX Environmental Planning, Inc.

Conducted Western Riverside County MSHCP and Coachella Valley MSHCP habitat assessments, focused surveys for sensitive plants, vegetation habitat mapping, burrowing owl surveys, and habitat restoration monitoring. Compiled reports summarizing habitat assessments and various focused surveys for sensitive species, restoration monitoring reports, and habitat mitigation and monitoring reports. Managed small to intermediate-level private development and public agency projects. Prepared small to large-scale project proposals.

Chambers Group, Inc., Redlands, CA

Staff Biologist/Botanist

Conducted MSHCP and MSCP habitat assessments, bioreconnaissance surveys, focused surveys for sensitive plants, vegetation habitat mapping, burrowing owl surveys, Zone of Influence surveys for the California desert tortoise, and habitat restoration monitoring. Managed small to intermediate-level private development and public agency projects. Prepared small to large-scale project proposals.

Earth Tech, Inc., Colton, CA

Environmental Scientist/Biologist/Environmental Professional III

Conducted Phase I environmental site assessments, wrote Records of Decision, conducted biological surveys for the presence of threatened and endangered plant species, and compiled and analyzed data from biological studies and groundwater contamination studies.

Summit Law Group, Seattle, WA

Intellectual Property Researcher/Paralegal

Assisted with the preparation of patent and trademark applications, responses, amendments, and other document preparation in concert with the practice of intellectual property, prior-art searches, and legal research.

Vermont Agency of Natural Resources, Waterbury, VT

Law Clerk

Duties included legal research and writing on a variety of environmental resource issues, title searches, legislative history research, etc.

San Diego State University, Department of Geography

Duties included environmental modeling, integrating and analyzing environmental Geographic Information Systems databases, and extensive field biotic sampling.

Contract work for the Department of Defense and the California Department of Parks and Recreation

Employment history

- 2009 – Present Biologist, AMEC Earth & Environmental, Inc., Riverside, CA
- 2007 – 2008 Botanist, HELIX Environmental Planning, Inc., Riverside, CA
- 2005 – 2007 Chambers Group, Inc., Redlands, CA
- 2004 – 2005 Earth Tech, Inc., Colton, CA
- 1998 – 2003 Summit Law Group, Seattle, WA
- 1998 Vermont Agency of Natural Resources, Waterbury, VT



Sharilyn Beth Norton

1992 – 1995

San Diego State University, Department of Geography

Kristin Asmus

Biologist, Arborist, & GIS Specialist

Education

M.S., Botany, University of Hawaii at Manoa, Honolulu, Hawaii, 1996
B.S., Plant Science, Landscape Horticulture, German Language and Literature (minor), University of California, Davis, 1990

Years of Experience

With AECOM: 7
With Other Firms: 2

Professional Affiliations

American Public Gardens Association
California Geographic Information Association
California Invasive Plant Council
California Native Grasslands Association
International Society of Arboriculture
Society for Ecological Restoration

Training and Certifications

International Society of Arboriculture
Certified Arborist # WE-6139A

Selected Publications & Reports

Final Mitigation and Monitoring Plan for the Suncrest Homes Sierra Vista Project, Contra Costa County, California. Sycamore Associates LLC, March 2006.

Wetland and Special-Status Species Mitigation and Monitoring Plan for the Vineyards at Marsh Creek Project at Vaquero Farms, Contra Costa County, California. Sycamore Associates LLC. June 2005.

Wetland Delineation and Preliminary Jurisdictional Determination for the 10-acre Geiskopf Property, Fairfield, Solano County, California. Sycamore Associates LLC. July 2006.

Tree Health and Hazard Risk Assessment for the White Property, Fort Bragg, Mendocino County, California. Sycamore

Ms. Asmus combines a solid academic background in botany and plant ecology with more than seven years of professional experience in conducting natural resource assessments and restoration planning, implementation, and monitoring. She is a certified arborist and trained wetland delineator, and conducts botanical and wildlife habitat assessments, wetland delineations, plant species inventories, and protocol surveys for special-status wildlife and plants. Ms. Asmus has extensive experience in vegetation surveying and sampling in both California and Hawaii, with additional experience in GIS, aerial photograph interpretation, and remote sensing data analysis as applied to vegetation mapping. Ms. Asmus has contributed her knowledge and expertise to mitigation monitoring plans for numerous projects, conducted tree health assessment surveys and hazard risk analyses, assisted with California tiger salamander salvage efforts, and worked on passive relocation of western burrowing owls. She has also participated in surveys for California red-legged frog, silvery legless lizard, San Joaquin kit fox, Swainson's hawk, and survey and trapping efforts for giant garter snake. Her research interests have included plant taxonomy, ecology, and eco-physiology.

Experience

Contra Costa Water District Canal Elimination and Flood Protection Project, Oakley. For the approximate 4-mile long Contra Costa Canal Elimination and Flood Control project EDAW conducted a formal wetland delineation, assessment of potentially occurring special-status plant and wildlife species, and all necessary focused follow-up surveys. EDAW also conducted an evaluation of the suitability and quality of existing on-site habitats and is one of the lead authors for the project Action Specific Implementation Plan (ASIP) completed in compliance with the CalFed Multi Species Conservation Strategy. As part of the ASIP process the project team identified potential project effects on listed species and NCCP habitats and negotiated appropriate avoidance and mitigation measures with USACE, Bureau of Reclamation, CDFG, and USFWS. The team coordinated the wetland and species mitigation planning efforts with the agencies and other stakeholders. Ms. Asmus coordinated pre-construction surveys for special-status plants and wildlife including giant garter snake, California red-legged frog, western burrowing owl, and western pond turtle, and is coordinating biological and environmental compliance monitoring during construction. Ms. Asmus is a U.S. Fish and Wildlife Service approved monitor for giant garter snake for this project.

Blackhawk Services, Vineyards at Marsh Creek Mitigation Project, Brentwood. The project team lead the mitigation planning effort for the Vineyards at Marsh Creek Development Project at the 936-acre Vaquero Farms mitigation site. Mitigation implementation included creation of five wetlands totaling 1.6 acres created for the benefit of California tiger salamander and California red-legged frog and occurred in occupied California red-legged frog and western burrowing owl habitat. The construction work required careful consideration for protection of these sensitive species including full-time construction monitoring and multiple protective measures to prevent take from occurring. Ms. Asmus was a key member of the mitigation planning team and assisted with oversight and construction monitoring during implementation of the mitigation. She participated in passive re-location and monitoring of several burrowing owls and monitoring of breeding owl pairs on the Vaquero Farms and Vineyards project sites. Protocol-level aquatic surveys for California tiger salamander resulted in the positive identification of numerous larvae and a red-legged frog salvage effort at the Vineyards project site resulted in the relocation of

Associates LLC. May 2004.

Tree Survey Report for the Approximately 60-acre Rabin / Soda Project, Tiburon, Marin County, California. Sycamore Associates LLC. October 2005.

Tree Survey Report for the East Cypress Corridor Specific Plan Project Sites: Dal Porto North, Leshner, Dal Porto South, and Biggs, Oakley, Contra Costa County, California. Sycamore Associates LLC. March 2005.

Seventh Year Monitoring Report for the Martinez Intermodal Project, Martinez, Contra Costa County, California. Sycamore Associates LLC. November 2006.

Third Annual Mitigation and Monitoring Report for Alhambra Creek Channel Improvements Project, Downtown Martinez, Contra Costa County, California. Sycamore Associates LLC. December 2006.

thousands of tadpoles to an approved location within Marsh Creek. She also participated in focused surveys for red-legged frogs at the Vaquero Farms site in which numerous adults were observed in pond habitat. During the first year of mitigation monitoring, Ms. Asmus observed red-legged frog eggs, tadpoles, and adults in one of the newly constructed ponds.

Suncrest Homes, Sierra Vista Development Project, Antioch. For the 166-acre Suncrest Homes Sierra Vista project in Antioch, Contra Costa County, EDAW completed impact analyses for special-status species including Alameda whipsnake, California tiger salamander, California red-legged frog, San Joaquin kit fox, and rare plants. The project team prepared the permit applications and secured regulatory permits in coordination with the U.S. Army Corps of Engineers, California Department of Fish and Game, U.S. Fish and Wildlife Service, and Regional Water Quality Control Board. Ms. Asmus assisted with construction monitoring and permit compliance for the development project. This included pre-construction surveys and biological monitoring for Alameda whipsnake, California red-legged frog, California tiger salamander, San Joaquin kit fox, and nesting birds. Ms. Asmus also worked on the Wetland Mitigation and Monitoring Plan (MMP) and assisted with implementation of the mitigation. During pre-construction surveys for the mitigation implementation Ms. Asmus observed seven red-legged frogs in stream habitat.

Lennar, Metcalf Road Residential Development Project, San Jose. The project team led permitting and mitigation planning on a large San Jose residential development project that included 213 residential units, open space, wetland enhancement, and habitat conservation areas. The team negotiated with U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game, and the City of San Jose to ensure in-perpetuity conservation of 200 acres of open space, including habitat for several special-status species. The Bay checkerspot butterfly, California tiger salamander, California red-legged frog, western burrowing owl, and other special-status species inhabit this 260-acre site. Ms. Asmus participated in a salvage and translocation effort for California tiger salamander using pitfall traps in coordination with the resource agencies. She discovered an adult tiger salamander and arboreal salamander and assisted in the relocation of the tiger salamander to an appropriate location near a stock pond on the adjacent conservation easement. She also participated in a passive relocation effort for Western burrowing owl. Ms. Asmus provided oversight on the implementation of the Mitigation and Monitoring Plan, which included creation of five wetlands and habitat for California tiger salamander and California red-legged frog.

D. R. Horton, KB Home, Pacific Communities, LLC, Cypress Grove Residential Development, Oakley. For the Cypress Grove Residential Development in Oakley, Contra Costa County, the project team conducted a formal wetland delineation, impact analysis, mitigation scoping, biological assessment, Essential Fish Habitat assessment, special-status plant surveys, and focused wildlife surveys for special-status species such as the western burrowing owl, silvery legless lizard, giant garter snake, Swainson's hawk, and Valley elderberry longhorn beetle. The project team secured permits from the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Fish and Game, NOAA Fisheries, and the Contra Costa Water Department to reduce and/or mitigate impacts to special-status species. The project team prepared the draft California Environmental Quality Act text, which was directly incorporated into the City's Environmental Impact Report. Ms. Asmus was an integral part of the focused plant and wildlife surveys and was approved by the U.S. Fish and Wildlife Service to conduct pre-construction surveys for giant garter snake. During a silvery legless lizard salvage effort, Ms. Asmus and the team observed and collected eight silvery legless lizards from remnant dune

habitat. Ms. Asmus is currently conducting monitoring of the project mitigation site.

County of Marin Bridge Maintenance Program, Marin County, CA.

EDAW prepared a detailed Project Description for the five bridges to be repaired, a Mitigated Negative Declaration compliant under CEQA and the Marin County Code, and several permit applications including a Joint Aquatic Resource Permit Application and a 1600 Streambed Alteration Agreement Application from the California Department of Fish and Game. The project was completed under a tight schedule, with several permit applications approved in less than three months. Concurrent handling of several special-status species and nesting bird pre-construction surveys for all of the bridges, project coordination for a Biological Opinion issued for special-status species; and completion of all bridge repairs were also completed under tight schedules in 2007. Ms. Asmus conducted pre-construction surveys, contractor education, and provided construction monitoring services during work in streams with sensitive fisheries resources.

Phillip Williams & Associates, City of Martinez, East Bay Regional Park District, and Caltrans Marsh Enhancement and Flood

Management. Working over a seven year period, the project team assisted the project design team, including Korve Engineering and Phillip Williams and Associates, to support the City of Martinez, the East Bay Regional Park District, and the California Department of Transportation (Caltrans) from design to inception of a joint venture to complete an 11-acre marsh enhancement and flood management project at the Martinez Regional Shoreline Park in the City of Martinez, Contra Costa County. The project provided mitigation credit for impacts related to a number of Caltrans projects. The project team assisted in defining goals for the mitigation site and the development of three design alternatives that integrated flood control, delta smelt habitat creation, and marsh enhancement goals with the opportunities and constraints of the site. After selection of the preferred alternative, the project team developed a conceptual design of the selected alternative that included a preliminary grading approach, sensitive construction practices, revegetation plant palettes, exotics eradication, protection of special-status species, and measures to minimize impacts to adjacent habitats. The project team worked with Phillip Williams and Associates to develop a Mitigation Monitoring Plan for the entire site. Ms. Asmus has been a key member of the team monitoring vegetation and wildlife habitat and providing remedial recommendations as necessary for the restoration project.

Redhorse Constructors, Inc., Rabin and Soda Properties, Tiburon. The project team provided Redhorse Constructors Inc. with a biological assessment, jurisdictional wetland determination, focused botanical surveys, and a tree survey and assessment for the 60-acre Rabin and Soda Properties in Tiburon, Marin County. Ms. Asmus conducted the tree survey and assessment and provided a CEQA ready report for this project. In order to assess the sensitivity of habitats on site, the project team and Ms. Asmus performed a reconnaissance-level site visit and identified the potential for occurrence of special-status plant and animal species. Multiple season floristic surveys led to the discovery of a federally- and state-listed plant species, a state-listed Rare and California Native Plant Society List 1B species, two additional special-status plant species, and the mapping of two potentially sensitive vegetation communities. This survey information was incorporated into the overall biological assessment and formal Mitigation Recommendations Report, which the client is successfully using to develop a permitting strategy.

Golftec Development Group Project, Alameda County.

Golftec Development Group requested botanical surveys for special-status plant

species on a 325-acre Dublin Canyon study in Alameda County. Although 64 special-status plant species were thought to occur on the site, Ms. Asmus and the project team conducted a reconnaissance-level survey and focused rare plant surveys to determine that no federally or state-listed endangered or threatened species actually occurred on the site. Ms. Asmus also conducted focused surveys for California red-legged frog at this site.

Andersen and Bonnifield, Kawar Biological Surveys, Tassajara Valley, Contra Costa County. The project team provided biological surveys for the 785-Acre Kawar Project in Tassajara Valley, Contra Costa County. The project team completed a biological assessment, jurisdictional wetland delineation with mapping, tree survey, and habitat assessments and focused surveys for California red-legged frog and California tiger salamander. Ms. Asmus participated in the botanical surveys, tree surveys, and focused surveys for California red-legged frog that resulted in the positive identification of an adult in stream habitat on site.

City of Oakley, East Cypress Corridor Specific Plan and EIR. For the 2,500-acre City of Oakley Specific Plan and Environmental Impact Report (EIR) in Oakley, Contra Costa County, EDAW assisted with the completion of a host of biological consulting services, including a review of environmental documentation, aerial photographs, and natural resource databases, a preliminary assessment of potential occurrence of special-status plant and wildlife species, all necessary focused follow-up surveys, an evaluation of the constraints and opportunities posed by existing on-site habitats, the preparation of CEQA-ready technical reports describing the biological resources found in the area, and an evaluation of the permitting implications. Ms. Asmus participated in numerous natural resource studies within the specific plan area.

Contra Costa Water District, Alternative Intake Project, San Joaquin County. EDAW conducted extensive biological surveys and provided permitting compliance services for the Alternative Intake Project on Victoria Island in San Joaquin County, California. The project required surveys and an ongoing passive relocation effort for burrowing owl, as well as protocol-level focused surveys for Swainson's hawk. Ms. Asmus was approved by the U.S. Fish and Wildlife Service to conduct pre-construction surveys and monitor for giant garter snake during construction. In addition, she conducted pre-construction surveys for nesting birds and western pond turtle, and monitored occupied Swainson's hawk nests. Ms. Asmus also conducted focused plant surveys and participates in continuing wildlife survey work.

Santa Clara Valley Water District, Burrowing Owl Studies. EDAW conducted a habitat assessment for burrowing owl on several creeks in Santa Clara County for compliance with the Santa Clara Valley Water District's Biodiversity Monitoring Plan. All areas within the District's right of way were surveyed and mapped according to their suitability for burrowing owl. A large GIS database of the survey results was compiled and provided to the District. Subsequent to the habitat assessment, EDAW conducted protocol-level focused surveys within priority areas in order to determine where burrowing owls are located and how they are using District lands. The results of these surveys are used by the District for planning of their operations and maintenance. Ms. Asmus participated in the protocol-level focused surveys.

Suncrest Homes, Prewett Ranch Habitat Evaluation, Brentwood. EDAW completed on-site habitat evaluations of special-status plant and animal species, as well as determining the presence/absence of sensitive natural communities for a CEQA-ready technical report on the 112-acre Prewett Ranch located southeast of the Lone Tree Way and O'Hara Drive intersection in Brentwood, Contra Costa County, California. Ms. Asmus prepared a certified arborist report as part of the biological resources

survey work. She conducted surveys for roosting bats, nesting birds, focused surveys for burrowing owl, and observed three Swainson's hawk during protocol surveys, including one nesting pair. Ms. Asmus also participated in pre-construction surveys for nesting birds, roosting bats, Swainson's hawk, and western pond turtle. EDAW conducted a successful long-term burrowing owl relocation effort which required identification and observation of several individual burrowing owls, including breeding pairs.

Dahlin Group, Rossmoor Community Center Development Project, City of Walnut Creek. The Rossmoor retirement community proposes to construct new community facilities and replace an existing private clubhouse in the City of Walnut Creek, Contra Costa County, California. EDAW is overseeing the development of an IS/MND pursuant to CEQA. Ms. Asmus conducted a wetland delineation and biological resources assessment of the approximate 12-acre project site.

Santa Clara County Water District, On-Call Biological Surveys. Under an on-call contract, EDAW provides biological services on regular basis. Typical tasks include California red-legged frog focused surveys, burrowing owl surveys, avian surveys, fish surveys, arborist surveys, native seed collection, pre-construction surveys for special-status wildlife species, revegetation monitoring, and botanical surveys, among others. EDAW provides technical reports of findings and works with the district to develop innovative solutions to protect biological resources and accomplish necessary projects. Coordination with District staff including biologists, planners, engineers, and construction managers is ongoing. Ms. Asmus has participated in many of the studies and projects including burrowing owl protocol winter and breeding season surveys, fish salvage at Lenihan Dam, tree pruning and vegetation monitoring on Calabazas Creek, and focused botanical surveys and vegetation monitoring on the Guadalupe River.

Engeo, Inc. for the Town of Danville, Front Street Repair and San Ramon Creek Bank Stabilization, Town of Danville. The Town of Danville received funding from the Federal Emergency Management Agency to repair two creek bank failures along San Ramon Creek in downtown Danville, Contra Costa County, California. EDAW created a detailed permit application package and coordinated efforts to garner approvals from USACE, RWQCB, CDFG, FEMA, and USFWS. In addition to permit approvals an Initial Study/Mitigated Negative Declaration in compliance with CEQA was prepared and certified for the project. Ms. Asmus conducted protocol level surveys for California red-legged frog and assisted with preparation of the Revegetation and Monitoring Plan.

San Ramon Valley YMCA. The San Ramon Valley YMCA tasked EDAW with preparing the necessary state and federal regulatory permit applications, as well as performing all the necessary biological assessments and compensatory mitigation planning for the 13-acre project located in Danville, California. The project site posed unique permitting and planning challenges with surrounding public park lands, residential communities, and open space and nesting bird habitat for several species. EDAW was able to work closely with the project engineer, client, Town of Danville, and various regulatory agencies to develop a site plan that would satisfy the recreation and facilities goals of the YMCA, while protecting and enhancing sensitive habitats. Prior to construction, EDAW conducted all the permit required pre-construction surveys and provided on-site contractor education and construction monitoring during construction phases. Ms. Asmus worked on the mitigation planning effort and prepared the Mitigation and Monitoring Plan for the project. She also participated in focused surveys for California red-legged frog and prepared an addendum to both a tree survey and USACE approved wetland delineation for areas added to the project site during planning.

Jonas Winbolt

Project Manager

Education

BS, Environmental Science, Western Washington University; Huxley College of the Environment, Bellingham, WA, 2000

MA, Theology, Biola University; Talbot School of Theology, La Mirada, CA, 2006

Years of Experience

With AECOM: 1

With Other Firms: 9

Technical Specialties

Hydro-acoustics

Trained in the setup, use, and analysis of the BioSonics DT-X data.

GPS

Trimble Geo XT, XH, Yuma, ProXRS and TSC1; GeoExplorer II and III, Recreation units and conversion software. Recreation units (e.g. Garmin, Lowrance)

GIS

Pathfinder Office, ArcMap, ArcPad, Terrasync, USGS Quad maps (TOPO!).

USFWS certified; Desert Tortoise Training and Workshop 2007.

Wetland Training Institute:

- Wetland Delineation class based on the 1987 Manual with 2006 Arid West Supplemental.
- Advanced Soils and Hydrology
- Hydric plant of San Diego Non-live fire training: USMC Camp Pendleton (2008).

Professional Affiliations

American Fisheries Society (AFS), California-Nevada Chapter, 2008

Mr. Winbolt is experienced in southern California and Pacific Northwest biology. His emphases lies in general and focus botanical surveys, including implementing and analyzing mitigation monitoring protocols, sensitive plant surveys, and general plant inventories. His background and experience has served to round out his knowledge and expertise in a wide variety of environmental disciplines, from biology to engineering.

Recently, he served as a biologist and project manager with ICF for a wide variety of monitoring tasks; including botanical surveys, as well as certification for various construction and mitigation/ restoration projects. In addition, he is proficient in protocol surveys for plants and selected wildlife species under USFWS, CDFG, and CNPS. He is well versed in sampling techniques for water quality and invertebrate and vertebrate species in lake and river watersheds and sub-tidal and tidal zones. Furthermore, his is proficient in U.S. Army Corp, California Department of Fish and Game, and Regional Water Quality Control Board jurisdictional water regulations. He has compiled sections for EIRs under CEQA, SEPA and NEPA.

Mr. Winbolt has worked extensively with the a wide variety of federal entities such as the U.S. Forest Service, U.S. Air Force, Department of the Navy, National Marine and Fisheries Service, Army Corps of Engineers, and Bureau of Land Management. Local and state agencies and private organizations include; CalTrans, the County of Orange, Metropolitan Water District of Southern California, Southern California Edison, the Irvine Company, and San Diego Gas and Electric.

Experience

Angeles National Forest Recreational Residence Botanical Surveys—U.S. Forest Service (USFS), California. Performed botanical surveys and GPS data collection for recreational residences throughout the Angeles National Forest in Southern California.

Rim of the World Trail Project—USFS, San Bernardino National Forest, California. Provided Biological Evaluations, including assessments of habitat suitability for arroyo toad, red-legged and yellow mountain frogs, gnatcatcher, least Bell's vireo, and southwestern willow flycatcher. Mapped selected segments of the trail using GPS and U.S. Geological Survey quadrangle maps, coordinating with client and field teams, and reporting.

Edwards AFB, Rare Plant Surveys and Vegetation Mapping—Los Angeles County, California. Surveyed and mapped vegetation communities for rare plant survey at Edwards AFB. Performed focus surveys and data collection for statistical analysis on four desert vegetation communities.

MCAS Yuma, Springhill Communication Tower —Chocolate Mountains, Imperial County, California. Surveyed and mapped vegetation communities for rare plant survey at proposed communication facility. Performed focus surveys for listed sensitive plant species within and adjacent to proposed project footprint. Coordinated with Navy and agency personnel during project.

Training and Certifications

California DFG, Scientific Collection
Permit #801051-04

Army Corps of Engineers Wetland
Delineation Certificate, 2002

Proposed base expansion rare plant surveys— NAVFAC, USMC Twenty-nine Palms, 29 Palms, California. Tasked with performing rare plant surveys on over 10,000 square acres for a two season survey (2008/9). Additional tasks included coordination of field crews with civilian military net and range safety protocols.

USMC Camp Pendleton, Erosion Study—Oceanside, California. Installed sediment traps and measured for slope sediment erosion with respect to vegetation coverage. Additional tasks included coordination of field crews with civilian military net and range safety protocols.

USMC Camp Pendleton, Rare Plant Surveys—Oceanside, California. Installed transect markers and surveyed for rare plants within base burn areas. Additional tasks included coordination of field crews with civilian military net and range safety protocols.

San Diego Creek, Basins 2 and 3—The County of Orange, Irvine, California. Implemented plant monitoring protocol for data collection at basins 2 and 3 at San Diego Creek in Irvine, California.

San Diego Creek, Invasives booklet, and slope rehabilitation—The County of Orange, Irvine, California. Developed invasive plant identification booklet for species in San Diego Creek, Orange County, California. Additionally, worked with the client to address slope stabilization issues along the creek in regards to native vegetation coverage.

Wilkinson Bridge Bio Survey—The County of Orange, Mojaska, California. Performed a biological analysis for plant and wildlife species at a bridge retrofit within Mojaska Canyon, CA.

Bachelor Mountain Spillway Mitigation Area—Metropolitan Water District, Riverside County, California. Project involved the design, implementation/oversight, and five-year criteria monitoring for the mitigation site for the San Diego Canal emergency access. Project is in its third year. Project site is near Diamond Valley Lake.

Jensen Filtration Vegetation surveys and clearing—Metropolitan Water District of Southern California, Granada Hills, California. Surveyed and monitored vegetation within jurisdictional areas for flood and fire control.

Lake Matthews/ Estelle Mountain—Metropolitan Water District, Riverside County, California. Interim Manager. Tasked with the interim management responsibilities of coordinating with MWD on preservation oversight (invasive plant abatement, resource monitoring), security, and contractor/ sub-contractor management on property. The duration of this project was approximately three years.

Lakeview Pipeline Biological Report—Metropolitan Water District, Lakeview, California. Tasked with performing a general biology report and clearance for the Lakeview pipeline and several blow-off values (near Ramona expressway/ Lake Perris).

Weymouth Solar Facility—Metropolitan Water District of Southern California, La Verne, California. Performed onsite evaluations and CEQA reporting for proposed solar facility placements at two site locations.

CA- 95 Jurisdictional Delineation—CalTrans, San Bernardino County, California. Performed Jurisdictional Delineations CA 95 near Needles, CA.

CA-111 US Army Corps of Engineers, Jurisdictional Delineation Report—LAN Engineering, Indio, California. Prepared a Jurisdictional Delineation report on the improvement to CA 111 within La Quinta Channel and Whitewater River channel.

CA- 395 Jurisdictional Delineation—CalTrans, San Bernardino County, California. Performed Jurisdictional Delineations CA 395 near Adelanto to Kramer Junction.

SDG&E Pole Survey Request—San Diego Gas & Electric, San Diego County, California. Performed plant and wildlife biological surveys for PSR requests by SDG&E throughout San Diego County.

Substation biological monitoring—Arcadis, Ranchito, California. Performed plant and wildlife biological evaluations and monitoring for geotechnical boring at proposed substations.

Bommer Canyon Mitigation Development—The Irvine Company, Irvine, California. Performed construction oversight and certification of the installation of southern-willow scrub, upland oak forest, and marshland habitats in order to meet USACE and CDFG mitigation requirements.

Desert Express—Circle Point, San Bernardino County, California; Nevada. Performed Jurisdictional Delineations along a parallel corridor to the I-15 freeway from Barstow, CA to Los Vegas, NV.

Needlegrass Mitigation Project—Irvine Community Development Company, Irvine, California. Performed construction oversight and certification of the installation of southern-willow scrub habitat in order to meet USACE and CDFG mitigation requirements.

Lower Planning Area 17 Mitigation Development—The Irvine Company, Irvine, California. Performed construction oversight and certification of the installation of southern-willow scrub habitat in order to meet U.S. Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) mitigation requirements.

Trabuco Canyon McNeil Property, Biological review—Kyle McNeil, Orange County, California. GPS sensitive species populations, clearing/grubbing oversight with subs.

Trabuco Canyon Lang Property, Biological review—Gil Leach, Orange County, California. Quantified sensitive plant communities for permit process. Recorded tree diameters and quality control of building plans with environmental constraints.

RESUME

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Education:

B.A. in Music, U.C. Riverside 1988

Additional relevant courses at U.C. Riverside: Subtropical Horticulture 1994
Field Botany 2000

Employment:

Parkview Nursery, sales person and planting advisor, 1993

UCR – Dept . of Plant Pathology, Laboratory Assistant 1994-1996

Phytophthora infestans research:

Virus testing(TMV) on tomato

Selection for resistance within native species

Propagation and maintenance of resistant species

Disease strain mapping project

PCR and progeny analysis

Rhizoctonia research:

Isolation and identification from nursery stock strawberry

Tissue culture and maintenance of Rhizoctonia and Phytophthora.

UCR – Dept. of Botany & Plant Sciences, Herbarium Technician and Workroom manager, 1997-2006; Assistant Museum Scientist, 2006 to present - Specimen preparation, including geographical referencing and data management, curation, identification and general museum operations; training and management of student, volunteer, and injured personell.

Additional Experience:

Biological consulting projects to which I have contributed through the UCR Herbarium or as a private consultant.

Inyo Co, CA

Coso Junction due diligence survey for Ultrasystems, 2005

Coso Junction rare plant survey for Ultrasystems, 2006

Kern Co., CA

Tejon Ranch rare plant survey for Dudek, 2007

Los Angeles Co., CA

Palmdale field survey for Ultrasystems, 2005
Lancaster field survey for Ultrasystems, 2005
Santa Clarita field survey for NRC, 2005
Centennial Homes, Tejon Ranch grassland study for NRC, 2006 - 2008
San Gabriel Canyon field survey for Ultrasystems, 2007
Santa Anita Reservoir field survey for Ultrasystems, 2007

Orange Co., CA

Santa Ana River Basin vegetation mapping for *Arundo* control for Ultrasystems, 2005
San Diego Creek vegetation mapping and survey for Ultrasystems, 2006
Irvine Ranch Conservancy floristic survey, 2008

Riverside Co., CA

Morongo Indian Reservation forest survey for BIA and Morongo Tribe, 1997-1998
Menifee field survey for Thomas Olson Assoc., 2000
Coachella Valley field survey for CH2MHill, 2000
Hemet (State St. at Gibbel Rd) field survey for Thomas Olson Assoc., 2001
Temecula(Long Canyon) field survey, 2001
San Jacinto Mtns field survey for Scott White, 2001
Santa Ana Mtns field survey for Scott White, 2001
Desert Hot Springs field survey for Steve McCarty, 2001
Hemet Airport survey for Thomas Olson Assoc., 2001
Hemet field survey for Psomas, 2003
Wildomar field survey for Thomas Olson Assoc., 2003
Alberhill field survey for NRC, May 2004
Banning Canyon rare plant survey for AMEC, 2004
Ivyglen vegetation mapping and rare plant survey for Ultrasystems, 2005, 2006
San Jacinto River at Valle Vista vegetation mapping and field survey for Kent Beaman, 2005
Santa Rosa Plateau oak mapping and measuring for Kelly Volansky, 2005, 2006
Murrieta Hills plant survey for Helix Environmental, Inc., 2006

San Bernardino Co., CA

Vegetation description of the Upper Santa Ana River, for Dave Bramlet, 1998
Yucaipa parcel field survey for Steve McCarty, 1999
Yucaipa parcel field survey for Partin Development Corp., 1999
Bryant Street widening native tree survey, for city of Yucaipa, 1999
Blue Cut botanical field survey for Kleinfelder Inc., 2000

Big Bear Water Treatment Plant expansion survey, Th. Olson Assoc.,
2000
Edison Co. tree removal project rare plant survey for BRC, 2004
Upper Waterman Canyon field survey for BRC, 2005
Running Springs vegetation mapping and survey for Kent Beaman, 2006
Hwy 395 Realignment field survey for Ultrasystems, 2007
Ivanpah Valley rare plant focus survey and floristic inventory for
CH2MHill, 2008

San Diego Co, CA

Plant Inventory of 9 reserves for Dept of Fish and Game, 2005
Otay Mesa floristic survey for NRC, 2008
Santee Lakes floristic survey for NRC, 2008

Teaching material preparation for Arborist Certification Class, UC Extension,
2000 to 2005

Revegetation Projects:

Wetlands Restoration and monitoring of Trilogy Golf Course Development for
Army Corp of Engineers, 2003-2006; Riverside Co.

Tucolota Creek revegetation for Wildland Resources, 2001, Riverside Co.

Survey, restoration plan and plant lists for 35 county road sites, Los Angeles Co.,
2007

Data collection, and restoration plan for two federally listed rare plant species.
Mitigation and monitoring report for Big Bear Area Regional Waste Water
Agency, San Bernardino Co., 2007.

Mitigation and restoration plan for Mountain Restoration Trust Site: Cold Creek,
Los Angeles Co., 2007

APPENDIX 2

Vascular Plants Observed During March and May 2010 Surveys Los Angeles County, California

SYMBOLS AND ABBREVIATIONS:

- * Non-native (introduced) species
** Special-Status species (see text)
sp. Identified only to genus
-

Ephedraceae

Ephedra nevadensis

Ephedra Family

Nevada joint fir

DICOTS

Apiaceae

Lomatium mohavense

Carrot Family

Mojave Lomatium

Asteraceae

Acamtopappus sphaerocephalus

Ambrosia acanthicarpa

Ambrosia dumosa

Artemisia tridentata

Chaenactis fremontii

Chrysothamnus nauseosus

Coreopsis bigelovii

Ericameria cooperi var. *cooperi*

Eriophyllum pringlei

Eriophyllum wallacei

Filago californica

Filago depressa

**Filago gallica*

Hymenoclea salsola

**Lactuca serriola*

Lasthenia gracilis

Layia glandulosa

Lessingia lemmonii

Malacothrix glabrata

**Matricaria matricarioides*

Microseris lindleyi

**Sonchus oleraceus*

Stephanomeria exigua

Stylocline gnaphaloides

**Taraxacum officinale*

Tetradymia axillaris var. *longispina*

Tetradymia stenolepis

Sunflower Family

Goldenhead

Annual Bursage

White Bursage

Big Sagebrush

Desert Pincushion

Rubber Rabbitbrush

Bigelow's Tickseed

Cooper's Goldenbush

Pringle's Woolly Sunflower

Wallace's Woolly Sunflower

California Cottonrose

Dwarf Cottonrose

Narrow-leaved Filago

Cheesebush

Prickly Lettuce

Needle Goldfields

White Layia

Lemmon's Vinegar-weed

Desert Dandelion

Pineapple Weed

Lindley's Silverpuffs

Common Sowthistle

Small Wire-lettuce

Everlasting Nest Straw

Common Dandelion

Longspine Cotton-thorn

Mojave cotton-thorn

Boraginaceae

Amsinckia retrorsa
Amsinckia tessellata
Cryptantha circumscissa
Cryptantha decipiens
Cryptantha dumetorum
Cryptantha micrantha
Cryptantha similis
Heliotropium curassavicum
Pectocarya linearis
Pectocarya penicillata
Plagiobothrys arizonicus
Plagiobothrys canescens
Tiquilia nuttallii
Tiquilia plicata

Brassicaceae

**Brassica nigra*
**Brassica tournefortii*
**Cakile maritime*
**Capsella bursa-pastoris*
Descurainia pinnata
**Descurainia sophia*
**Hirschfeldia incana*
**Sisymbrium altissimum*
Tropidocarpum gracile

Cactaceae

Opuntia echinocarpa

Campanulaceae

Nemacladus sigmoideus

Caryophyllaceae

Loeflingia squarrosa var. *squarrosa*
**Spergularia* sp.

Chenopodiaceae

Atriplex canescens
Atriplex confertifolia
Atriplex phyllostegia
Atriplex polycarpa
Grayia spinosa
Krascheninnikovia lanata
**Salsola paulsenii*
**Salsola tragus*

Crassulaceae

Crassula connata

Borage Family

Rigid Fiddleneck
Devil's Lettuce
Cushion Cryptantha
Gravel Cryptantha
Bushloving Cryptantha
Purple-root Cryptantha
Desert Cryptantha
Salt Heliotrope
Slender Combseed
Sleeping Combseed
Arizona Popcornflower
Valley Popcornflower
Nuttall's Crinkleemat
Fanleaf Crinkleemat

Mustard Family

Black Mustard
Sahara Mustard
Sea Rocket
Shepherd's Purse
Western Tansy Mustard
Herb Sophia
Shortpod Mustard
Tall Tumblemustard
Dobie Pod

Cactus Family

Golden Cholla

Bellflower Family

Sigmoid Threadplant

Carnation Family

California Loeflingia
Sandspurrey

Goosefoot Family

Four-winged Saltbush
Spiny saltbush
Arrowscale
Allscale
Spiny Hop-sage
Winter Fat
Barbwire Russian Thistle
Russian Thistle

Stonecrop Family

Pygmy-weed

Cuscutaceae

Cuscuta californica

Euphorbiaceae

Chamaesyce albomarginata

Croton setigerus

Euphorbia polycarpa

Stillingia paucidentata

Fabaceae

Astragalus lentiginosus var. *variabilis*

Lupinus microcarpus

Trifolium albopurpureum

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Nama demissum

Phacelia distans

Phacelia fremontii

Lamiaceae

Monardella exilis

Salazaria mexicana

Salvia carduacea

Loasaceae

Mentzelia affinis

Petalonyx thurberi ssp. *thurberi*

Malvaceae

Eremalche exilis

**Malva parviflora*

Sphaeralcea ambigua

Meliaceae

**Melia azedarach*

Nyctaginaceae

Abronia pogonantha

Mirabilis laevis

Onagraceae

Camissonia boothii

Camissonia campestris

Camissonia graciliflora

Camissonia pallida

Camissonia palmeri

Dodder Family

California Dodder

Spurge Family

Rattlesnake Weed

Dove Weed

Desert Spurge

Mojave Toothleaf

Legume Family

Freckled Milkvetch

Chick Lupine

Rancheria Clover

Geranium Family

Red-stemmed Filaree

Waterleaf Family

Purple Mat

Wild Heliotrope

Fremont's Phacelia

Mint Family

Mojave Monardella

Bladder Sage

Thistle Sage

Loasa Family

Blazing Star

Thurber's Sandpaper Plant

Mallow Family

White Mallow

Cheeseweed

Apricot Mallow

Mahogany Family

Chinaberrytree

Four O'Clock Family

Mojave Sand Verbena

California Wishbone Bush

Evening Primrose Family

Booth's Evening Primrose

Mojave Sun Cup

Hill Sun Cup

Paleyellow Sun Cup

Palmer Evening Primrose

Oenothera deltoides

Polemoniaceae

Eriastrum densifolium
Eriastrum eremicum
Eriastrum sapphirinum
Linanthus parryae
Loeseliastrum matthewsii

Polygonaceae

Centrostegia thurberi
Chorizanthe watsonii
Chorizanthe xanti
Eriogonum angulosum
Eriogonum baileyi var. *baileyi*
Eriogonum fasciculatum var. *foliolosum*
Eriogonum mohavense
Eriogonum plumatella
Rumex hymenosepalus

Portulacaceae

Calyptridium monandrum

Salicaceae

Salix lasiolepis

Scrophulariaceae

Mimulus bigelovii

Solanaceae

Datura wrightii
Lycium andersonii
Lycium cooperi

Zygophyllaceae

Larrea tridentata

MONOCOTS

Agavaceae

Yucca brevifolia

Liliaceae

***Muilla coronata*

Poaceae

Achnatherum hymenoides
Achnatherum speciosum
**Bromus diandrus*
**Bromus rubens*

Devil's Lantern

Phlox Family

Giant Woollystar
Desert Eriastrum
Sapphire Eriastrum
Parry's Linanthus
Desert Calico

Buckwheat Family

Thurber's Spineflower
Watson's Spineflower
Spineflower
Anglestem Buckwheat
Bailey's Buckwheat
Eastern Mojave Buckwheat
Western Mojave Buckwheat
Flat-topped Buckwheat
Wild-rhubarb

Purslane Family

Sand Cress

Willow Family

Arroyo Willow

Figwort Family

Bigelow's Monkeyflower

Nightshade Family

Jimson Weed
Anderson Box Thorn
Cooper's Box Thorn

Caltrop Family

Creosote Bush

Agave Family

Joshua Tree

Lily Family

Crowned Muilla

Grass Family

Indian Ricegrass
Desert Needlegrass
Ripgut Brome
Red Brome

Palmdale Hybrid Power Project
Special-Status Plants Pre-Construction Survey
AECOM Environment
July 2010

**Bromus tectorum*
**Cynodon dactylon*
Elymus elymoides
Festuca microstachys
**Festuca myuros*
Festuca octoflora
**Hordeum murinum*
Poa secunda
**Polypogon monspeliensis*
**Schismus barbatus*
Sporobolus airoides

Typhaceae

Typha sp.

Cheat Grass
Bermuda Grass
Squirreltail
Eastwood Fescue
False Foxtail Fescue
Six Weeks Fescue
Glaucous Foxtail Barley
Malpais Bluegrass
Annual Rabbitsfoot Grass
Mediterranean Grass
Alkali Sacaton

Cattail Family

Cattail

APPENDIX 3

Incidental Wildlife Species Observed During March and May 2010 Surveys Los Angeles County, California

REPTILIA

Crotaphytidae

Crotaphytus bicinctores
Gambelia wislizenii

Phrynosomatidae

Sceloporus occidentalis
Uta stansburiana
Phrynosoma platyrhinos

Teiidae

Aspidooscelis tigris

Viperidae

Crotalus scutulatus

AVES

Odontophoridae

Callipepla californica

Cathartidae

Cathartes aura

Accipitridae

Buteo jamaicensis

Columbidae

Zenaida macroura

Tyrannidae

Myiarchus cinerascens

Corvidae

Corvus corax

Mimidae

Mimus polyglottos

MAMMALIA

Leporidae

Sylvilagus audubonii
Lepus californicus

REPTILES

Collared and Leopard Lizards

Great Basin Collared Lizard
Long-nosed Leopard Lizard

Zebra-tailed, Earless, Fringe-toed, Spiny, Tree, Side-blotched, and Horned Lizards

Western Fence Lizard
Side-blotched Lizard
Desert Horned Lizard

Whiptails, Allies

Western Whiptail

Vipers

Mojave Rattlesnake

BIRDS

New World Quail

California Quail

New World Vultures

Turkey Vulture

Hawks, Kites, Eagles, Allies

Red-tailed Hawk

Pigeons, Doves

Mourning Dove

Tyrant Flycatchers

Ash-throated Flycatcher

Crows, Jays

Common Raven

Mockingbirds, Thrashers

Northern Mockingbird

MAMMALS

Rabbits, Hares

Desert Cottontail
Black-tailed Jackrabbit

Palmdale Hybrid Power Project
Special-Status Plants Pre-Construction Survey
AECOM Environment
July 2010

Sciuridae

Ammospermophilus leucurus
Spermophilus beecheyi

Muridae

Neotoma lepida

Canidae

Canis latrans

Squirrels

White-tailed Antelope Squirrel
California Ground Squirrel

Rats, Mice, Voles

Desert Woodrat

Wolves, Foxes, Coyote

Coyote

STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

APPLICATION FOR CERTIFICATION
for the
PALMDALE HYBRID POWER PROJECT

Docket No. 08-AFC-9

PROOF OF SERVICE
(Revised 7/1/2010)

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DECLARATION OF SERVICE

I, Sara J. Head, declare that on, August 11, 2010, I served and filed copies of the attached **Palmdale Hybrid Power Project (PHPP) Special-Status Plants Pre-Construction Focused Survey Report (08-AFC-9)**, dated July 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [<http://www.energy.ca.gov/sitingcases/palmdale/index.html>]. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

For service to all other parties:

sent electronically to all email addresses on the Proof of Service list;

by personal delivery;

by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-9
1516 Ninth Street, MS-4
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I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years.