SITE PHOTOGRAPHS

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Photograph #1

View of the SJS 1&2 Project Site from northwest corner south along western edge. Coalinga State Hospital and Prison are located adjacent to the SJS Site.

Photograph #2

View of the SJS 1&2 Project site from Jayne Avenue. View is from north to southwest.

Photograph #3

View of the SJS 1&2 Project site from west end of the site. The west side of the site is entirely cleared of vegetation and prepared for seeding at the time of this photograph (May, 2008). Site does not support suitable habitat for BNLL.

Photograph #4

View of the SJS 1&2 Project site from the southwest corner, looking to the northeast. Note existing crops across the southern portion of the site and water pump in the foreground.

Photograph #5

View of the SJS 1&2 Project site from the northeast corner to the east at the disturbed non-native grassland and saltbush scrub habitat along the transmission line corridor on the south side of Jayne Avenue.

Photograph #6

View of the SJS 1&2 Project site from west toward the east at row crops. Shows lack of suitable habitat for BNLL.

Photograph #7

View of the SJS 1&2 Project site from west toward the east of soils prepared for row crops.

Photograph #8

View of Zapato Chino Creek where it crosses the SJS 1&2 transmission line corridor. This view is to the south of Jayne Avenue. The banks are dominated by tamarisk, with individual cottonwood trees and non-native grasses.

POTENTIALLY OCCURRING AND OBSERVED SPECIES AND TRANSMISSION LINE ROUTES

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Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
Animals				
American Badger	*Taxidea taxus berlandieri*	CSC	Found in relatively open, uncultivated ground with friable soils. Grasslands, savannas, and mountain meadows near timberline are preferred.	Likely within Project area where suitable habitat is present. One dead badger was observed in the Project area during surveys.
Blunt-nosed leopard lizard	*Gambelia sila*	FE, SE, CDFG Fully Protected	Found in arid areas with scattered vegetation, non-native grassland and alkali sink scrub communities of the San Joaquin Valley floor.	This species was observed on the CDFG Pleasant Valley Ecological Reserve immediately adjacent to the Project site. Suitable habitat is present within transmission line alignment; however, BNLL was not observed within the Project site during protocol surveys in 2008.
Burrowing owl	*Athene cunicularia*	CSC	Primarily found in grasslands, can thrive in agricultural landscapes. Prefers to place burrows in short vegetation with sparse shrubs.	Reported within 1 mile of Project area in 1920. Assumed extirpated from Pleasant Valley/Coalinga in 1936. No recent observations of this species have been documented. Not observed in Project area.
Golden eagle		CSC		Observed near the creek along the transmission line alignment.
Horned lark		CSC		Observed along the transmission line alignment.
Hopping's blister beetle	*Lytta hoppingi*	FT	Found in the foothills in the southern end of the Central Valley. Reported in Taft, Kern, Fresno and Tulare counties. There is no published information on habitat or floral visitation.	Reported approximately 8 miles west of Project area in natural habitats. May occur within transmission line alignment outside of agricultural areas.
LeConte's thrasher	*Toxostoma lecontei*	CSC	Le Conte's thrasher is an uncommon resident of desert scrub, desert wash and alkali desert scrub habitats from Inyo County to the Mexican border.	Likely within Project transmission line alignment where suitable habitat is present.

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE WITHIN SITE OR TRANSMISSION LINE CORRIDOR
LOGGERHEAD SHRIKE	*LANIUS LUDOVICIANUS*	CSC	UNCOMMON YEAR-ROUND RESIDENT OF GRASSLAND AND DESERT SCRUB.	LIKELY TO FORAGE WITHIN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT. OBSERVED ALONG THE TRANSMISSION LINE ALIGNMENT.
LONG-EARED OWL	*OTUS WILSONIANUS*	CSC	OCCURS PRIMARILY IN DENSE OAK AND RIPARIAN WOODLAND; NESTS IN TREES, OFTEN IN THE ABANDONED NESTS OF CORVIDS OR OTHER RAPTORS.	MAY USE RIPARIAN HABITAT THAT CROSSES THE TRANSMISSION LINE ALIGNMENT. ALSO LIKELY TO FORAGE WITHIN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT.
MERLIN FALCON	*FALCO COLUMBARIUS*	CSC	GRASSLANDS AND AGRICULTURAL FIELDS. WINTERING POPULATIONS IN CALIFORNIA HAVE DECLINED POSSIBLY DUE TO PESTICIDE USE IN BREEDING AREAS.	LIKELY TO FORAGE IN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT.
MOLESTAN BLISTER BEETLE	*LYTTA MOLESTA*	FT	BLACK BEETLE WITH ORANGE ON THORAX. FEEDS ON LUPINES AND VERNAL POOL SPECIES IN THE CENTRAL VALLEY.	REPORTED APPROXIMATELY 8 MILES NORTH OF PROJECT AREA IN NATURAL HABITATS. MAY OCCUR WITHIN TRANSMISSION LINE ALIGNMENT OUTSIDE OF AGRICULTURAL AREAS.
MORRISON'S BLISTER BEETLE	*LYTTA MORRISONI*	FT	FOUND IN THE SOUTHERN CENTRAL VALLEY; FEEDS ON GILIA TRICOLOR AND LINANTHUS LINIFLORUS.	REPORTED APPROXIMATELY 8 MILES WEST OF PROJECT AREA IN NATURAL HABITATS. MAY OCCUR WITHIN TRANSMISSION LINE ALIGNMENT OUTSIDE OF AGRICULTURAL AREAS.
SAN JOAQUIN ANTELOPE SQUIRREL	*AMMOSPERMOPHILIUS NELSONI*	ST, FSC	GRASSLANDS WITH MODERATE SHRUB COVER; WIDELY SCATTERED SHRUBS, FORBS, AND GRASSES IN BROKEN TERRAIN WITH GULLIES AND WASHES AND LOAM SOILS. USE BURROWS THAT THEY OR OTHER ANIMALS HAVE DUG.	REPORTED WITHIN 1 MILE OF PROJECT AREA. LIKELY WITHIN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT.
SAN JOAQUIN DUNE BEETLE	*COELIS GRACILIS*	FC	SMALLEST SPECIES OF DUNE BEETLE; IS FOUND ONLY IN SAND DUNES IN CALIFORNIA	NOT LIKELY IN PROJECT AREA; SUITABLE HABITAT IS NOT PRESENT.

Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, ST	Grasslands and scrublands; often in areas of oil exploration and extraction, wind turbines, agricultural land uses, and urban areas.	Assumed within Project area where suitable habitat is present.
San Joaquin pocket mouse	*Perognathus inornatus inornatus*	FSC	Requires friable soils in grasslands and Blue Oak savannas from near sea level to 1500 feet elevation along the eastern side of the San Joaquin Valley.	Likely within Project area where suitable habitat is present. Trapping program planned for December 2008 will identify species using area.
San Joaquin whipsnake	*Masticophis flagellum ruddocki*	CSC	Grassland, savanna, chaparral, and woodland habitats from San Joaquin Valley to Kern and Santa Barbara Counties.	May occur within Project area where suitable habitat is present.
Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	CSC	Grassland and desert-shrub associations on friable soils. Also on uncultivated sites in the Kettleman Hills, and in and around oil fields near Coalinga, Fresno County.	Likely within Project area where suitable habitat is present. Trapping program planned for December 2008 will identify species using area.
Silvery legless lizard	*Anniella pulchra pulchra*	CSC	Common in several habitats supporting friable soils, especially in coastal dune, valley-foothill, chaparral, and coastal sage scrub. It may occasionally enter desert scrub habitats.	Found historically northwest and southeast of Project site, in stream habitats.
Swainson's hawk	*Buteo swainsoni*	ST	Found in deserts, grasslands and prairies; forages over pastures and agricultural fields. Nests in trees in riparian, groves and farmlands.	Likely to forage in Project area where suitable habitat is present. May nest in riparian area associated with Zapato Chino Creek to east and south of Project area.
Tricolored blackbird	*Agelaius tricolor*	CSC (breeding populations)	Fresh water marsh habitat, usually in cattails or reeds; forages in agricultural fields, grasslands, lakeshores and scrub habitats.	Likely to forage in Project area where suitable habitat is present.

Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
Tulare grasshopper mouse	*Onychomys torridus tularensis*	CSC	Arid shrubland communities in hot, arid grassland and shrubland associations.	Likely within Project area where suitable habitat is present. Trapping program planned for December 2008 will identify species using area.
Western mastiff bat	*Eumops perotis californicus*	CSC	Roost in rugged, rocky areas where suitable crevices are available for day-roosts. Forage in open areas up to 2000 feet and up to 15 miles from roost sites.	May forage in Project area where suitable habitat is present.
Western spadefoot	*Scaphiopus hammondii*	CSC	Emerges at night during the early spring rains to breed in temporary ponds, vernal pools, and backwaters of slow flowing creeks; burrows are constructed in upland habitats including grasslands and coastal sage scrub.	Not expected within Project area; no standing water present within or near Project area.
Plants				
Brittlescale	*Atriplex depressa*	CNPS List 1B	Broad flood basins and alluvial fans, barren areas within alkali grassland, alkali meadow, and alkali scrub. Low elevations to 1,055 feet.	Not expected within Project area; habitat is not suitable.
California jewel-flower	Caulanthus californicus	FE, SE, CNPS List 1B, BLM Sensitive	Nonnative grassland, upper Sonoran subshrub scrub, cismontane juniper woodland and scrub communities; 240 to 2,950 feet. Three concentrations of naturally-occurring populations include the Kreyenhagen Hills in Fresno County	Kreyenhagen Hills is near the Project study area. May occur in transmission line alignment. Potential for occurrence within Project area is low

Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
Hoover's eriastrum	*Eriastrum hooveri*	CNPS List 4.2, (FT delisted 2003)	Drying grassy areas, chenopod scrub, pinyon and juniper woodland, valley and foothill grassland (50-915m).	Potential for occurrence within Project area is likely where suitable habitat is present.
Lemmon's jewelflower	*Caulanthus coulteri* var. *lemmonii*	CNPS List 1B.2	Dry, exposed slopes in Pinyon and juniper woodland; valley and foothill grasslands (80-8000m).	Potential for occurrence within Project area is low; suitable habitat is not present.
Pale yellow layia	*Astragalus didymocarpus var. milesianus*	CNPS List 1B.2	Grassy areas near coast, coastal scrub (20-90m). Santa Barbara, San Luis Obispo, Ventura Counties.	Potential for occurrence within Project area is low. Suitable habitat is not present.
San Joaquin woollythreads	Monolopia congdonii	FE, CNPS List 1B	Nonnative grassland, valley saltbush scrub, interior Coast Range saltbush scrub and upper Sonoran subshrub communities at elevations from 200 to 850 feet on the San Joaquin Valley floor	May occur in transmission line alignment, however, potential for occurrence within Project area is low.

Notes:

[1] U.S. Fish and Wildlife Service (federal).
FE = Endangered (in danger of becoming extinct throughout all or a significant portion of its range).
FT = Threatened (likely to become endangered in the foreseeable future in the absence of special protection).
FC = Federal Candidate (candidate for FT or FE listing).
FSC = Species of Concern (sufficient information exists which warrants concern over that species' status and warrants study).
CDFG = California Department of Fish and Game (State).
SE = State Endangered (in danger of becoming extinct throughout all or a significant portion of its range).
SC = State Candidate (candidate for SE or State threatened [likely to become endangered in the foreseeable future in the absence of special protection).
CSC = Species of Concern (information exists which warrants concern over that species' status and warrants study).

CNPS List 1B = California Native Plant Society: Rare or endangered throughout its range.

References: CNDDB 2008; USFWS 2008.

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BIOLOGICAL SURVEY DATES, WEATHER CONDITIONS, AND SURVEY STAFF

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San Joaquin Solar 1 & 2 Biological Survey Dates, Weather Conditions, and Survey Staff

Survey Date	Survey Type	Start/End Times	Start/End Temp (C)	Start/End Sky Cover (%)	Wind Speed (mph)	Survey Staff
4/11/08	Habitat Assessment	1330-1430	n/a	n/a	n/a	URS – TM, PM
5/15/08	Habitat Assessment	0900-1148	29-37	0/0	0-4	URS – TM
5/28/2008	BNLL Survey #1 - Adult	1115-1320	25-26.6	10/40	0-2	URS – SA, TW, DM QK – LB (Level II), WM (Level II), YB
5/29/2008	BNLL Survey #2 – Adult	1035-1218	25-28.3	25/5	0-6	URS – SA, TW, DM, QK – LB (Level II), WM (Level II) YB
5/30/2008	BNLL Survey #3 – Adult	1007- 1152	25.5-27.7	5/0	0-1	URS – SA, TW, DM QK – LB (Level II), WM (Level II) YB
6/07/2008	Survey Reference Site only (not within protocol	0805-0835	25-26	0/0	10-18	URS – TM (Level II), TW, SA, JS
6/08/2008	BNLL Survey #4 – Adult	0840-1038	25-28	0/0	0-7	URS TM (Level II), TW, SA, JS
6/21/2008	BNLL Survey #5 - Adult	0620-0752	25-32.2	0/0	0-8	URS – SA, TW QK – LB (Level II) YB
6/22/2008	BNLL Survey #6 - Adult	0718-0902	25-32.2	0/0	0-5	URS – SA, TW QK – LB (Level II) YB
6/23/2008	BNLL Survey #7 – Adult	0804-0932	25-27.7	10/25	0-3	URS – SA, TW QK – WM (Level II) YB
6/30/2008	BNLL Survey #8 – Adult	0815-0952	26-31	0	1-5	URS – RB QK – LB (Level II), WM (Level II) YB
7/01/2008	BNLL Survey #9 – Adult	0845-1025	26-30.5	0	0-4	URS - RB QK – LB (Level II), WM (Level II)

San Joaquin Solar 1 & 2 Biological Survey Dates, Weather Conditions, and Survey Staff (Continued)

Survey Date	Survey Type	Start/End Times	Start/End Temp (C)	Start/End Sky Cover (%)	Wind Speed (mph)	Survey Staff
7/02/2008	BNLL Survey #10 – Adult	0827-1011	26-30	0	3-5	URS – RB QK – LB (Level II), WM (Level II) YB
7/03/2008	BNLL Survey #11 – Adult	0820-0939	26-28	0/0	0-9	URS – RB QK – LB (Level II), WM (Level II) YB
7/09/2008	BNLL Survey #12 – Adult	0650-0747	26-27	0/0	0-5	QK – LB (Level II), WM (Level II) YB
8/9/2008	BNLL Survey #1 - Juvenile	825-1010	25-33	0/0	0-2/2-4	URS – SA, BB, QK – LB (Level II), YB
8/10/2008	BNLL Survey #2 - Juvenile	840-1011	25-30	0/0	5-7/0-2	URS – SA, BB, QK – LB (Level II), YB
8/19/2008	BNLL Survey #3 - Juvenile	0809-1045	25-27	0/0	2-5/6-8	URS – AB, CE, QK – LB (Level II) YB
8/20/2008	BNLL Survey #4 - Juvenile	0856-1000	25-29	0/0	2-4/2-6	URS – AB, CE, QK – LB (Level II) YB
8/21/2008	BNLL Survey #5 - Juvenile	0825-1020	25.5-30.2	0/0	1-2/2-6	URS – AB, CE, QK – LB (Level II) YB

Notes:
URS Staff: BB Brittany Benson, DM – Dennis Miller, RB – Rick Bailey, SA – Sundeep Amin, TM – Theresa Miller, TW – Tim Witman, JS – Jill Seed, PM – Patrick Mock, WV – Wayne Vogler, AB – Alyssa Berry, CE – Cletis England
QK Staff: CU – Curtis Uptain, LB – Lori Bono, WM – Woody Moise
YB - Yancey Bissonnette, Alphabiota

PLANT SPECIES OBSERVED

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Scientific Name	Common Name
ANGIOSPERMS (DICOTYLEDONS)	
ASTERACEAE	SUNFLOWER FAMILY
Ambrosia acanthicarpa	annual bursage
Baccharis salicifolia	mulefat
Centaurea melitensis	tocalote
Centaurea solstitialis	yellow star-thistle
Helianthus annuus	California sunflower
Hemizonia sp.	tarplant, tarweed
Lepidospartum squamatum	scale broom
Xanthium strumarium	common cocklebur
BORAGINACEAE	BORAGE FAMILY
Amsinckia menziesii	common fiddleneck
Cryptantha sp.	cryptantha
Plagiobothrys sp.	popcorn flower
BRASSICACEAE	MUSTARD FAMILY
Brassica nigra	black mustard
Capsella bursa-pastoris	sheperd's-purse
Hirschfeldia incana	short-podded mustard
Lepidium nitidum	shining peppergrass
CHENOPODIACEAE	GOOSEFOOT FAMILY
Atriplex polycarpa	common saltbrush
Salsola tragus	Russian thistle
CUCURBITACEAE	GOURD FAMILY
Cucurbita palmata	coyote melon
EUPHORBIACEAE	SPURGE FAMILY
Eremocarpus setigerus	dove weed
FABACEAE	LEGUME FAMILY
Astragalus sp.	astragalus
Lotus purshianus	Spanish clover
GERANIACEAE	GERANIUM FAMILY
Erodium cicutarium	red-stemmed filaree
MALVACEAE	MALLOW FAMILY
Malvella leprosa	alkali-mallow
PAPAVERACEAE	POPPY FAMILY
Eschscholzia californica	California poppy
POLYGONACEAE	BUCKWHEAT FAMILY
Eriogonum sp.	annual buckwheat
SOLANACEAE	NIGHTSHADE FAMILY
Datura wrightii	jimson weed
Nicotiana glauca	tree tobacco
TAMARICACEAE	TAMARISK FAMILY
Tamarix sp.	tamarisk

Scientific Name	Common Name
ANGIOSPERMS (MONOCOTYLEDONS)	
POACEAE	GRASS FAMILY
Avena sp.	wild oat
Bromus diandrus	ripgut grass
Bromus hordeaceus	soft chess
Bromus madritensis ssp. rubens	red brome
Horedum marinum ssp. *gussoneanum*	Mediterranean barley
*Lolium perenne**	perennial ryegrass
*Schismus barbatus**	Mediterranean schismus
Vulpia myuros var. *myuros**	Zorro annual fescue

WILDLIFE SPECIES OBSERVED AND TRANSMISSION CORRIDOR

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Scientific Name	Common Name
Birds	
Agelaius phoeniceus	red-winged blackbird
Aquila chrysaetos (CSSC)	golden eagle
Bubo virginianus	great-horned owl
Buteo jamaicensis	red-tailed hawk
Calypte anna	Anna's hummingbird
Carpodacus mexicanus	house finch
Cathartes aura	turkey vulture
Corvus corax	common raven
Eremophila alpestris (CSSC)	horned lark
Lanius ludovicianus (CSSC)	loggerhead shrike
Mimus polyglottos	northern mockingbird
Stelgidopteryx serripennis	northern rough-winged swallow
Sturnella neglecta	western meadowlark
Tyrannus verticalis	western kingbird
Tyto alba	barn owl
Mammals	
Canus latrans	coyote
Lepus californicus	black tailed jackrabbit
Lynx rufus	bobcat
Mustela frenata	long-tailed weasel
Spermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	cottontail rabbit
Taxidea taxus (CSSC)	American badger
Reptiles	
Cnemidophorus tigris	western whiptail lizard
Crotalus viridis	western rattlesnake
Masticophis flagellum	coachwhip
Mustela frenata latirostris	long-tailed weasel
Pituophis catenifer	gopher snake
Sceloporus occidentalis	western fence lizard
Uta stansburiana	common side-blotched lizard

CSSC = California Species of Special Concern

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BIOLOGIST'S QUALIFICATIONS

Areas of Expertise	Habitat Restoration and Mitigation Monitoring Sensitive Species Surveys and Habitat Assessment Vegetation Mapping and Botanical Surveys Biological Assessments Technical Report Writing
Total Years of Experience URS Other Firms	5 1 4
Education	BS/1998/Ecology, Behavior, and Evolution/University of California, San Diego
Supplemental Education/Training	Wetland Delineation Workshop by Wetland Training Institute (2008) Flat-tailed horned lizard Identification Training by the BLM (2008) Desert Tortoise Handling Workshop by Desert Tortoise Council (2007)
Registration/Certification	California Department of Fish and Game (CDFG) Scientific Collectors Permit #SC-009178 CDFG Rare, Threatened, and Endangered Plant Voucher Collecting Permit #09012.
Overview	Sundeep Amin is a biologist/restoration ecologist with over four years of professional experience working as a biologist, restoration ecologist, project manager, and/or project crew supervisor on an assortment of projects throughout Southern California, including projects in Nevada and Arizona. His main areas of expertise include habitat restoration, mitigation monitoring, botanical surveys, biological constraints analyses, and sensitive species surveys (floral and faunal). Mr. Amin is also experienced in technical report writing, client/agency interaction, and project management. He has worked on projects for a variety of clients including all branches of the military, private developers, utility companies, and local, State, and Federal agencies. He is familiar with State and Federal regulations such as the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Federal and California Endangered Species Acts (FESA and CESA), Migratory Bird Treaty Act (MBTA), and Natural Community Conservation Plans (NCCP).
Select Project Experience	**Habitat Restoration and Mitigation Monitoring** **Gregory Canyon Landfill, Pala, CA.** Restoration ecologist assisting with the preparation of a Habitat Resource and Restoration Management Plan for a 1,700 acre project site in northern San Diego County. **(2008-Present)** **San Onofre Nuclear Generating Station (SONGS) Steam Generator Replacement Project, San Onofre, CA.** Restoration ecologist responsible for the preparation of a Revegetation Plan as mitigation for impacts created by the transport of replacement steam generators along the northern San Diego County coastline on Marine Corps Base Camp Pendleton and San Onofre State Park property. **(2008-Present)** **City of San Marcos, U-Boot Parcel, San Marcos, CA.** Restoration ecologist responsible for preparing a Riparian Habitat Enhancement and Creation Plan

consisting of the creation/enhancement of eight total acres of riparian and wetland habitat. **(2008-Present)**

Marine Corps Air Station at Miramar, San Diego, CA. Restoration ecologist responsible for annual and semi-annual monitoring and annual monitoring report preparation for an erosion control and revegetation project at two sites located within Marine Corps Air Station Miramar grounds. Also responsible for client and landscape subcontractor coordination. **(2008-Present)**

Lakeside Land Development Co., Lakeside, CA. Restoration ecologist responsible for conducting qualitative and quantitative monitoring visits and preparing annual monitoring reports for a San Diego River Improvement Project consisting of a major floodplain restoration project on the San Diego River. **(2008-Present)**

Dana Point Headlands, Dana Point, CA. Restoration ecologist responsible for conducting qualitative and quantitative monitoring and reporting. Project consists of coastal sage scrub restoration along several coastal bluffs above Dana Point Harbor. Coastal California gnatcatchers have already been observed throughout the restoration/enhancement areas. **(2008-present)**

City of San Diego, Mira Sorrento Parkway, San Diego, CA. Restoration ecologist responsible for annual and semi-annual monitoring and reporting. This project involves the revegetation of several acres of coastal sage scrub along a newly created road on property managed by the City of San Diego. **(2008-Present)**

San Elijo Hills/County Dip, San Marcos, CA. Restoration ecologist responsible for annual and semi-annual monitoring and reporting. This project involves the restoration of several acres of newly created habitat (coastal sage scrub and riparian) that serves as partial mitigation for the construction of a new master planned community. **(2008-Present)**

Twin Oaks Valley Road, San Marcos, CA. Restoration ecologist responsible for annual and semi-annual monitoring and reporting. This project involves the restoration of cut slopes resulting from the widening and expansion of Twin Oaks Valley road. This project also includes the restoration of two off-site areas including wetland and coastal sage scrub habitat. **(2008-Present)**

San Diego Unified School District, Throughout the City of San Diego, CA. Restoration ecologist responsible for annual monitoring and reporting for several SDUSD sites throughout San Diego. Projects are typically mitigation for the construction of school facilities and consist of coastal sage scrub and ephemeral riparian restoration. **(2008-present)**

Caltrans, State Route 73, Costa Mesa, CA. Restoration ecologist responsible for monthly monitoring and reporting of the performance of bioretention basin. Project was water quality mitigation for the construction of SR-73. **(2008-Present)**

Ryland Homes, Oak Valley Gateway, Beaumont, CA. Restoration ecologist/project manager responsible for annual and semi-annual monitoring and

reporting. Other duties included client-agency easement coordination and landscape contractor oversight. Project involved the creation of two mitigation wetland/riparian water treatment swales to biologically hold up and treat run-off from the site associated housing development. Design included the creation of two swales each with a wetland, riparian, and ephemeral zone. **(2006-2008)**

Palmer Investments, Los Valles Country Club, Hasley Canyon, CA. Restoration ecologist/project manager involved from submission of proposal to implementation of mitigation. This project covers ~200 acres in the Santa Clarita area and involves the building of an Arnold Palmer Golf Course and associated housing pads. Mitigation requirements include nesting bird surveys, reptile relocation surveys, oak tree surveys and mitigation plan creation, and oversight of ephemeral riparian mitigation creation along Hasley Canyon Creek. **(2006-2008)**

Centex Homes, Sycamore Heights, Chino Hills, CA. Restoration ecologist/project manager responsible for annual monitoring and reporting, and agency coordination for permit compliance. Mitigation site consisted of a water quality wetland basin and a riparian scrub area that provided challenges due to the lack of appropriate soils and hydrology of the chosen restoration site. **(2006-2008)**

City of Lake Forest, Concourse Park, Lake Forest, CA. Restoration ecologist/project manager responsible for annual and semi-annual monitoring and reporting. This project was nearing completion and involved extensive correspondence with the USFWS, CDFG, and ACOE to facilitate site sign-off. **(2006-2008)**

HART Unified School District, Hasley Canyon, CA. Restoration ecologist/project manager providing consultation regarding appropriate site mitigation requirements. Duties included re-assessing the project site, preparing a conceptual habitat mitigation and monitoring plan, and inspecting and assessing several potential mitigation sites in northern Los Angeles County. **(2006-2008)**

Centex Homes, Hawks Pointe, La Mirada, CA. Restoration ecologist responsible for annual and semi-annual monitoring and reporting. Other tasks performed included site maintenance coordination with the landscape contractor and California gnatcatcher mapping throughout the restoration area. This project involved the creation of CSS in and around a housing development within an urban area. California gnatcatchers were routinely heard throughout the restoration site. **(2006-2008)**

KB Homes, The Cove, Hemet, CA. Restoration ecologist/assistant project manager responsible for oversight of vernal pool restoration on a housing development currently constructing homes. Other tasks included applying for assorted agency permits regarding the installation of water supply pipelines, and Native American artifact issues. **(2006-2008)**

K. Hovnanian Homes, Four Seasons, Murrieta, CA. Restoration ecologist conducting annual mitigation monitoring and annual report preparation. Mitigation sites included a wetland detention basing and two vegetated water quality swales/drainages. **(2006-2007)**

Riverwalk, Agoura Hills, CA. Restoration ecologist assisting with annual mitigation monitoring and preparation of the annual report. Site included oak woodland and native grassland restoration sites which presented opportunities for a variety of interesting restoration techniques. **(2007)**

D.R. Horton, Montrose, Wildomar, CA. Restoration ecologist providing vegetation mapping, biological assessment surveys, and a conceptual habitat mitigation plan for a disturbed parcel of land in Riverside County. **(2006-2007)**

Boulder Springs, Moreno Valley, CA. Biologist providing construction monitoring in order to assure digging for soil samples did not infringe upon jurisdictional waters. **(2007)**

Lennar Communities, Crowne Hill, Temecula, CA. Restoration ecologist conducting annual mitigation monitoring, including the preparation of annual reports for several mitigation sites resulting from the construction of a tract home development. **(2006)**

Vista Unified School District Rancho Guajome Wetlands Creation, Vista, CA. Restoration ecologist responsible for mitigation implementation and monitoring. The project involved the creation of an approximately five acre wetland complex to mitigate for the building of a nearby elementary school. **(2005-2006)**

MCAS Miramar Coastal Sage Scrub Restoration, San Diego, CA. Restoration ecologist in charge of crew supervision and monitoring. Work consisted of exotic species control and vegetation monitoring of over 150 transects in support of coastal sage scrub on MCAS Miramar. **(2004-2006)**

Fort Irwin Army Base Revegetation and Erosion Control, Fort Irwin, CA. Project biologist responsible for routine monitoring and plant/erosion control assessment. The project involved the revegetation of off-road areas on Fort Irwin Army base. A large portion of the project involved developing erosion control strategies using vegetation and other erosion control strategies. **(2005-2006)**

Organ Pipe National Monument Border Fence Installation Plant Salvage and Restoration, Lukeville, AZ. Restoration ecologist and assistant project manager responsible for quarterly monitoring of restoration sites along the US-Mexico border. Duties included Sonoran Desert plant species seed collection and dispersal, exotic plant control, inspection of salvaged plants, and creation of status reports. **(2004-2006)**

San Diego Gas and Electric (SDGE) Naval Weapons Station Restoration, Fallbrook, CA. Restoration ecologist/project manager in charge of quarterly monitoring and reporting. Project consisted of the restoration of sites impacted due to the installation of power poles on military land. (**2004-2006**)

Del Mar Bluffs Erosion Control and Revegetation, Del Mar, CA. Restoration ecologist/crew supervisor in charge of exotic plant removal, hydroseeding, planting, and routine monitoring of revegetation sites along an Amtrak right of way. **(2004-**

2006)

Las Vegas Valley Water District Native Plant Salvage, Pahrump and Las Vegas NV. Restoration ecologist and crew supervisor overseeing the salvage of western honey mesquite trees and several thousand native shrubs for transplant into the Las Vegas Springs Preserve. Over one hundred mesquite trees ranging from a few feet to over fifteen feet were successfully boxed and moved. Salvaged native shrubs included creosote bush, burrow brush, ephedra, and several cacti and yucca species. **(2005-2006)**

San Diego Metropolitan Waste Water District Mt. Elbrus Canyon Revegetation and Erosion Control Study, San Diego, CA. Restoration ecologist responsible for the revegetation/monitoring of a canyon impacted by the installation and subsequent inspection of sewer lines in the canyon bottom. Revegetation activities included hydroseeding the entire trail and quarterly inspection. **(2004-2006)**

Bureau of Land Management Las Vegas Buckwheat Salvage, Las Vegas, NV. Restoration ecologist and crew leader in charge of the salvage of one thousand sensitive Las Vegas buckwheat (*Eriogonum corymbosum*) shrubs. Salvage of shrubs was initiated in order to preserve a large population of Las Vegas Buckwheat that would otherwise have been lost to development. **(2005-2006)**

Seal Beach Naval Weapons Station Native Plant Windrow Installation and Monitoring, Seal Beach, CA. Restoration ecologist responsible for quarterly inspection of native species used to create a windrow on military lands leased to agriculture. **(2005-2006)**

Sempra Energy Riversidean Sage Scrub Restoration Line 6900, Paloma Valley, CA. Restoration ecologist responsible for crew supervision, monitoring and report writing. Project consisted of the restoration of a two acre previously agricultural site to Riversidean sage scrub as mitigation for the impacts created by the installation of an underground gas line. (**2005**)

Tamarack State Beach Bluff Restoration and Erosion Control, Carlsbad, CA. Restoration ecologist/supervisor in charge of seed collection, exotics removal, hydroseeding and planting and follow-up monitoring. Project consisted of the restoration of coastal bluff habitat, which had become over-run with exotic plant species. **(2005)**

SDGE NCCP Power Pole Revegetation, San Diego County, CA. Restoration ecologist and project manager responsible for assessing and restoring over one hundred power pole sites throughout San Diego county as part of permit compliance for emergency repairs due to fires. Duties also included reporting and maintain an online database to document progress. **(2005)**

Beale Air Force Base Dry Creek Restoration Plan, Lincoln, CA. Restoration ecologist responsible for creating a restoration plan to restore and stabilize a section of Dry Creek on Beale AFB. Topics covered included methods to stabilize the eroding bank, oak woodland restoration, and the utilization of volunteers to

assist in project implementation. **(2005)**

Sempra Energy Tucalota Creek Mitigation Sites, Temecula, CA. Restoration ecologist responsible for the monitoring of a variety mitigation sites, ranging from scrub to riparian habitat in the Temecula area. Duties included monitoring of vegetation, exotic species control, and reporting to the USFWS. **(2005)**

San Diego Metropolitan Waste Water District Chocolate Canyon Revegetation and Erosion Control Study, San Diego, CA. Restoration ecologist in charge of monthly maintenance oversight and monitoring. Project consisted of several experimental plots designed to determine the best method of revegetating a canyon after impacts caused by improvements to sewer lines in the canyon bottoms. **(2004-2005)**

City of San Diego Group 1 Canyon Access, San Diego, CA. Restoration ecologist/crew lead in charge of installation of erosion control measures to prevent erosion of trails due to work on sewer lines along the canyon bottom. **(2005)**

Sensitive Species Surveys and Habitat Assessments

Kinder Morgan California-to-Nevada (Cal-Nev) Pipeline, **Mojave Desert of California and Nevada.** Field biologist conducting desert tortoise presence/absence and rare plant surveys over several different sections of a 233-mile fuel pipeline project from Colton, CA to Las Vegas, NV. Other duties included leading desert tortoise survey crews, assisting with least Bell's vireo surveys, assisting with jurisdictional delineations, and assisting with preparation of associated technical documents. **(2008)**

Ausra Solar Thermal Energy Project AFC, San Luis Obispo County, CA. Field biologist/crew leader conducting focused presence/absence surveys for adult and juvenile blunt-nosed leopard lizards over roughly two (2) square miles of fallow agricultural land near the Carrizo Plains. Surveys are in support of an Application for Certification for an 180MW thermal generating facility located within San Luis Obispo County. **(2008)**

San Joaquin Solar Hybrid AFC, Coalinga CA. Field biologist/crew leader conducting focused presence/absence surveys for adult and juvenile blunt-nosed leopard lizards over three miles of a proposed transmission line route in support of an Application for Certification for a solar thermal and bio-fuels hybrid power plant project in Fresno County. **(2008)**

Solar Power Plant AFC, Imperial County, CA. Field biologist conducting rare plant and flat-tailed horned lizard surveys in support of an Application for Certification for an 800MW thermal generating facility covering 7,000 acres in Imperial County. **(2008)**

Boulder Ridge – Moreno Valley, CA. Biologist assisting with vegetation mapping, Phase I, II, and III Burrowing Owl (BUOW) surveys, and production of a MSHCP Phase I and II BUOW report for an approximately 220-acre project site in Western Riverside County. Also assisted with the completion of a Jurisdictional

Delineation. **(2007)**

City of Lake Forest, Lake Forest, CA. Biologist, conducting sensitive plant surveys, and performing California gnatcatcher surveys with a permitted biologist. Project included documenting natural resources on a parcel of land owned by the City proposed to be turned into a sports park. **(2007)**

Richland Communities, Avanti, Lancaster, CA. Biologist working as part of a team to conduct Phase III BUOW and clearance surveys on a 350-acre parcel of abandoned agricultural land. **(2006-2007)**

Lewis Operating Corporation, Apple Valley, CA. Biologist conducting Phase III burrowing owl surveys on an undeveloped parcel of land containing disturbed creosote bush scrub habitat. **(2007)**

California City, California City, CA. Biologist performing desert tortoise presence/absence and zones of influence surveys on three sections of land in the California City area. Other work included habitat assessments for rare plants that may potentially occur on-site and blooming season rare plant surveys. **(2006)**

Beazer Homes, French Valley, Murrieta, CA. Biologist conducting 30-day pre-construction BUOW surveys and preparing associated report per Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) guidelines. **(2006)**

Vegetation Mapping and Botanical Surveys

Lytle Creek RAFSS and AFSS Analysis, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties. Biologist responsible for the assessment of remaining Riversidean and regular Alluvial fan Sage Scrub (RAFSS and AFSS) along every major river and waterway alluvial fans complexes in search of potential off-site mitigation. Duties included searching for areas potentially containing alluvial fan scrub habitat, assessing potential areas (including extensive vegetation mapping), and creating a table describing areas that are both still hydrologically active and potentially purchasable. **(2006-2008)**

Lytle Creek Mitigation Surveys, **San Bernardino, CA.** Biologist providing support to the project small mammal biologist with regards to conducting vegetation surveys over k-rat mitigation islands in Lytle Creek Wash. Duties included performing modified point-intercept transects, keeping track of data by grid, and overlaying data on a map of the islands to be used in conjunction with small mammal trapping data to determine in any correlation exists between certain vegetation and k-rat abundance. **(2006-2007)**

Mammoth Mountain, Mammoth Lakes, CA. Biologist assisting with re-assessment of vegetation and potentially jurisdictional areas on Mammoth Mountain Ski resort. Work involved vegetation mapping of high altitude plant communities from Montane to alpine climate zones. **(2007)**

San Manuel General Plan, San Manuel, AZ. Biologist working as part of a team

to map the vegetation of over 25,000 acres of various Sonoran Desert habitat, including the identification of potentially jurisdictional water features for later assessment. Other duties included writing sections of a long-term river management plan to address issues with the x mile portion of the San Manuel River that crosses the site. The work was commissioned by BHP Billiton in anticipation of the closing of the local copper mine, and subsequent sale of land to expand the town of San Manuel, Arizona. **(2007)**

Canyon Crest, Chino hills, CA. Biologist conducting a series of sensitive plant surveys in chaparral and coastal sage scrub habitats during the various blooming periods of potentially occurring sensitive plant species. **(2007)**

Ortega PBR, Santa Ana Mountains, CA. Biologist assisting with sensitive plant surveys in dense chaparral and riparian communities over two seasons for a water pipeline project. **(2006-2007)**

Lennar Communities, Lytle Creek, San Bernardino, CA. Biologist responsible for focused scalebroom (*Lepidospartum squamatum*) surveys, scalebroom removal oversight, removal monitoring, and letter report preparation. Location and appropriate removal of scalebroom is essential prior to building homes due to the ability of scalebroom to grow into and crack foundations. **(2006)**

Camp Bloomfield, Malibu, CA. Biologist performing vegetation mapping, specifically mapping of all trees on the project site in order to determine potential impacts and appropriate mitigation. **(2006)**

West Valley Water District, San Bernardino, CA. Biologist assisting with the vegetation mapping and resource assessment of land needed for the installation of a water treatment plant, water reservoir, and associate pipelines near Lytle Creek Wash. **(2006)**

Biological Assessments

Hasley Canyon, Hasley Canyon, CA. Project manager/biologist/restoration ecologist responsible for writing winning proposal and subsequent supplemental proposals for a CEQA-level biological assessment, formal jurisdictional determination/delineation, oak tree survey, and full suite of sensitive species surveys (least Bell's vireo, southwestern willow flycatcher, arroyo toad, and California gnatcatcher) on a 275-acre relatively undisturbed project site in northern Los Angeles County. Biological work included assessing land, preparing the biological assessment, assisting with the oak tree survey, assisting with the jurisdictional determination, and survey coordination. Project management tasks included routine meetings with the client and other professionals hired to perform the due diligence work required to apply for the appropriate permits that would be required. **(2006-2008)**

Rancho Vistoso Xero-Riparian Habitat Assessment, Oro Valley/Tucson, AZ. Biologist providing a habitat assessment and technical report for a parcel of land owned by the client in order to determine the boundaries of various levels of xero-riparian habitat in accordance with city code to allow maximum use of the land.

(2007)

690 Laguna Beach, Laguna Beach, CA. Biologist providing a biological assessment and accompanying technical report for the permitting of a private home. Specific issues included dealing with stringent and time consuming reporting standards while still providing cost effective service. **(2007)**

RMC Lancaster, Lancaster, CA. Biologist responsible for the vegetation mapping along a proposed natural gas pipeline through developed and undeveloped areas. Duties also included identifying potential constraints, and the preparation of a biological constraints analysis. **(2007)**

Murrieta 180, Murrieta, CA. Biologist assisting with the implementation of the California Rapid Assessment Method (CRAM) analysis of an impacted disturbed wetland and potential vernal pool mitigation site. Application of the CRAM analysis results in each analyzed feature being assessed over a number of different criteria, with the ultimate goal of outputting a score, which can be compared to any other feature regardless of differences. **(2006)**

Technical Report Writing

SES Solar One Energy Project AFC, Barstow, CA. Biologist assisting with data analysis and report preparation in support of an Application for Certification for a solar power plant project in San Bernardino County. Project involved intensive surveys for desert tortoise, Mohave ground squirrel, and rare plants on a 16,000-acre project site and 100-mile transmission line. **(2008)**

Pacific Century Homes, Peppertree II, Hemet, CA. Biologist responsible for vegetation mapping and assisting with a jurisdictional determination/delineation. Other duties included preparing a Narrow Endemic Plant Species (NEPS) report in accordance with the Western Riverside MSHCP. **(2007)**

Robinson Ridge, Rancho Santa Margarita, CA. Biologist assisting with a jurisdictional determination/delineation and eventual report preparation of a 113-acre property that is currently a nursery. Specific issues involved the correct reporting of several potential jurisdictional features that have been lost and created due to long-term use of the site as a plant nursery. **(2007)**

Lake Matthews Golf and Country Club, Riverside, CA. Restoration ecologist responsible for preparing a conceptual habitat mitigation and monitoring plan for a 375-acre residential and golf course development. Specific issues addressed include suggested mitigation for impacts to jurisdictional waters and wetlands. **(2007)**

La Paz Park, City of Laguna Nigel, Laguna Nigel, CA. Restoration ecologist performing the analysis and preparation of an annual monitoring report for riparian and wetland mitigation. **(2007)**

Borel Road Improvement, Murrieta, CA. Biologist preparing a NEPS habitat assessment report per Western Riverside MSHCP guidelines. **(2007)**

Big Bear Lake Civic Center, Big Bear, CA. Assisted fellow biologists by analyzing field data and completing a formal jurisdictional delineation report and accompanying data sheets. **(2007)**

NPS Carlson, Santa Monica Mountains, CA. Biologist providing support by writing up biotic report with regards to a sensitive plant habitat assessment/survey conducted by a fellow biologist. **(2007)**

Jurupa Valley Spectrum, Riverside, CA. Assisted in the completion of the biological section of an Initial Study in support of planning staff. **(2007)**

Santa Ana Woollystar Report, San Bernardino, CA. Biologist assisting with the write-up of an un-submitted scientific paper detailing the findings of the subspecies of Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*) found on a project site near Lytle Creek Wash. **(2007)**

Richland Communities, Hathaway, Palmdale, CA. Biologist providing support by writing up a biological constraints report with data collected by a fellow biologist. **(2006)**

Professional Associations

California Native Plant Society, Member
Society for Ecological Restoration, California, Member
Wildlife Society, Member

Areas of Expertise	Endangered Species Surveys Construction Monitoring Biological Assessment
Total Years of Experience URS Other Firms	19 7 12
Education	BA / 1984 / Biological Sciences / California State University California Teaching Credential / 1986 / Life Science / California State University
Publications	Dispersal Capability of the California Gnatcatcher: A Landscape Analysis of Distribution Data. Western Birds 29:351-360, 1998. (P. Mock, coauthor). California Gnatcatcher Territorial Behavior. Western Birds 29:242-257, 1998. (M. Grishaver, K. Preston, P. Mock, and D. King, coauthors).
Endangered Species Recovery Permit	U.S. Fish and Wildlife Service Recovery Permit Number TE-101151-1. California Gnatcatcher; Presence/Absence Surveys, and Nest Monitoring.
Overview	Mr. Bailey has over 19 years of experience as an environmental biologist. His responsibilities include focused surveys for California gnatcatcher, least Bell's vireo, arroyo southwestern toad, and desert tortoise; vegetation mapping; and technical report preparation in conformance with CEQA, NEPA, and ESA.
Project Experience	**Endangered/Sensitive Species Surveys** **Kinder Morgan Energy Partners Arroyo Toad Exclusion, Camp Pendleton, California** Conducted surveys for arroyo toad in and around pipeline construction area over a two-year period. Maintained pit traps and exclusion fencing to prevent take of arroyo toad. Conducted bullfrog removal from portions of San Mateo Creek. **Wylie Construction Sewage Treatment Facility, Camp Pendleton, California** Conducted focused surveys for arroyo toad in and around construction site. Maintained pit traps and exclusion fencing to prevent take of arroyo toad. **Solar I Desert Tortoise Surveys, Barstow, California** Conducted focused surveys for desert tortoise. Recorded tortoise locations, health indicators, and scat/burrow locations for the project. **San Mateo Lagoon Exotic Predator Control, San Clemente, California** Conducted surveys for arroyo toad, southwestern pond turtle, and tidewater goby. Managed field task to remove non-native predators from the lagoon. Species removed include bullfrog, crayfish, and catfish. Prepared summary report for the project. **State Route 73 Water Quality Basins, Orange County, California** Conducted focused surveys for California gnatcatcher and monitored nest sites. Communicated with construction supervisors to avoid impacts to active nests. Prepared summary report for the project. **Multiple Species Conservation Plan (MSCP) California Gnatcatcher Population Census, San Diego, California** Conducted focused surveys for California gnatcatcher at conservation areas throughout San Diego County. Prepared final report of gnatcatcher population with discussion of the relative quality of the conservation areas. **Solar II Flat-tailed Horned Lizard Surveys, El Centro, California** Conducted focused surveys for flat-tailed horned lizard and desert horned lizard. Recorded horned lizard locations and scat locations for the project.

Saint Michael's School Construction, Poway, California
Conducted focused surveys for California gnatcatcher and delineated territorial boundaries relative to construction. Prepared project report detailing conservation efforts on-site.

Federal Emergency Management Agency (FEMA) Fire Fuel Control, San Bernardino and Glendale, California
Conducted focused surveys for California gnatcatcher at proposed fire fuel management sites. Prepared final report for the project.

Emergency Storage Project, San Diego County Water Authority, San Diego, California
Conducted focused surveys for California gnatcatcher and arroyo southwestern toad. Survey area included vicinity of Lake Hodges and San Vicente Reservoir. Prepared portions of the Environmental Impact Report for the project.

Effects of Aircraft Noise on Least Bell's Vireo at Marine Corps Air Station Camp Pendleton, U.S. Department of the Navy, San Diego, California
Recorded behavioral data of least Bell's vireo biweekly over five months. Behavioral data was compared to onsite noise data to test for possible effects on the species by aircraft noise.

Rancho San Diego California Gnatcatcher Study, Home Capital Corporation
Collected behavioral field data on California gnatcatchers throughout the breeding and non-breeding seasons. Assisted in mist netting and color banding of approximately 114 individuals. Analyzed territory size data for a gnatcatcher population of approximately 25 pairs.

Miramar Landfill General Development Plan, City of San Diego, California
Conducted focused surveys for California gnatcatcher, San Diego fairy shrimp, San Diego mesa mint, San Diego button celery, and willowy monardella. Contributed to the biological technical report and environmental impact statement for the proposed facilities.

South County Landfills, City and County of San Diego, California
Conducted comprehensive field surveys for sensitive species and focused surveys for California gnatcatcher and arroyo southwestern toad in six proposed landfill sites. Prepared constraints level report for each site.

Construction Monitoring

San Elijo Hills Open Space Management, San Marcos, CA
Implemented and managed conservation plan for natural areas of San Elijo Hills. Monitored fire fuel management task, invasive weed removal, habitat restoration, and prevention of unauthorized dumping. Conducted yearly on-site population census of California gnatcatcher to measure success of the conservation effort. Prepared yearly summary report.

Biological Construction Monitoring for Olivenhain Reservoir
Project biologist monitoring California gnatcatcher nesting locations in relation to construction activity. This information allowed client to avoid impacts to Federally-listed Threatened California gnatcatcher.

Biological Construction Monitoring for Dana Point Headlands
Project biologist monitoring California gnatcatcher nesting locations in relation to construction activity, public use areas, and conserved habitat. This information allowed client to avoid impacts to Federally-listed Threatened California gnatcatcher, and to measure the success of the project conservation effort.

Biological Construction Monitoring for VertRep Facility, U.S. Navy/Stronghold Electric
Project biologist monitoring construction of a helicopter landing facility. Vernal pools, coastal sage scrub, and California gnatcatchers were the resources being protected.

Biological Construction Monitoring of San Elijo Hills, San Elijo Hills, LCC
Implemented monitoring of wetlands permit conditions.

California Gnatcatcher Study, Skyline Wesleyan Lutheran Church
Collected field data to assess construction noise impacts on the species over three years. Mist netted and color banded gnatcatchers within the study area. Delineated territories on site and recorded breeding behavior, nesting success, and dispersal of young. Prepared a letter report detailing the breeding home range of each pair onsite prior to construction.

Kramer-Victor Powerline, Southern California Edison
Conducted surveys for desert tortoise, Mojave ground squirrel, and rare plants along the Kramer-Victor power corridor. Additionally, monitored construction crews to prevent take of desert tortoise.

Biological Assessment
Escondido Parks Master Plan, City of Escondido, Escondido, California
Conducted field surveys for sensitive biological resources in proposed park sites and conservation areas.

Upham San Marcos Project, Chester R. Upham, San Marcos, California
Participated in biological resources survey of 35-acre site. Collected vernal pool soil samples for a fairy shrimp re-hydration study. Contributed to biological technical report.

Biological Resource Inventory, City of Poway, California
Conducted focused surveys for California gnatcatcher throughout the city and sphere of influence. Mapped habitats and sensitive resources.

South Santa Fe Avenue Widening and Realignment, San Diego County Department of Public Works, San Diego, California
Conducted field surveys to determine the presence or absence of least Bell's vireo in the project area. Recorded faunal species list and provided photographic documentation of habitat quality.

Rancho Del Rey, City of Chula Vista, California
Participated in a vernal pool study that included floral inventory and soil sample collection for a fairy shrimp re-hydration study.

First San Diego River Improvement Plan, City of San Diego, California
Managed field task to collect data on a 20-acre revegetation site. Data used to determine whether the project met required standards for success.

Areas of Expertise	Biological Resources
Total Years of Experience	< 1
URS	< 1
Other Firms	0
Education	B.S./2007/Animal Science and Wildlife Conservation/University of Delaware
Registration/Certification	N/A
Overview	Brittany Benson is a biologist for URS in the San Diego office. While an undergrad, she participated in field projects in Costa Rica and Tanzania, Africa. She has a strong educational background in wildlife conservation.
Project Experience	**Study Abroad, Tanzania. 2007** Witnessed the unique challenges facing African Wildlife from the encroaching ecotourism and development of the land. Lived with various hunter-gatherer and pastoral societies to get a first-hand experience of how the aboriginal people conserve the wildlife and their vital natural resources. Biological data was collected and recorded on a daily basis. **AmeriCorps Community Service Program, Newark, Delaware. 2005** A Delaware State Parks field biologist that primarily assisted with the identification and eradication of invasive plant species in order to re-establish an old growth forest. Also aided with the restoration of the diamondback terrapin population. **Study Abroad, Costa Rica. 2005** Prior to the trip, formulated a hypothesis based on the species richness vs. the evapotranspiration index. Quantified and compared the field analyses data of the tropical biodiversity (specifically, mammals) for a cloud forest, rain forest, tropical forest, and deciduous forest and formulated a technical report.

Alyssa J. Berry

Staff Biologist

Areas of Expertise

Monitoring Threatened and Endangered Amphibians of California
Wildlife Surveys
Habitat Restoration GPS and GIS mapping

Years of Experience

With URS: < 1 Year
With Other Firms: 2 Year

Education

BA/Earth and Environmental Science/2004/Wesleyan University, CT

Overview

Mrs. Berry is a field biologist with over two years of experience monitoring California Threatened and Endangered species and restoring native habitat. Alyssa's survey work has covered areas of the central coast and northern high desert region of California, focusing on California red-legged frogs and arroyo toads in the Los Padres National Forest, and the Northern spotted owl in the Klamath National Forest. More recently, her conservation efforts have included ecological restoration, concentrating on the re-vegetation of disturbed habitat with genetically local, native plant species. Alyssa has propagated site specific grassland, chaparral, riparian and coastal dune species for ecological restoration. She has aided in the design and installation of several small-scale restoration sites.

Sensitive Species Experience

Blunt-nosed leopard lizard (*Gambelia sila*)

- California Valley, CA – Surveyed for Blunt-nosed leopard lizards using the CA Department of Fish and Game Protocol.

Desert Tortoise (*Gopherus agassizii*)

- Attended the Desert Tortoise Council's *Introduction to surveying, monitoring and handling techniques workshop.*

California Red-legged Frog (*Rana aurora draytonii*)
Over 20 positive contact hours

- Santa Maria, CA- Morning eye-shine surveys to clear soil remediation site.
- Guadalupe, CA- Evening eye-shine surveys to monitor presence/absence of CRLF in newly created wetlands within the Guadalupe Soil Remediation site.

- Los Padres National Forest - Surveyed for California red-legged frog egg masses, tadpoles, sub-adults and adults. Captured all life stages to measure morphological characteristics. Used Garmin GPS waypoints to map locations of individuals and areas of critical, potential and unsuitable habitat. Performed night surveys to monitor for breeding individuals, using eye-shine techniques.

Arroyo Toad (*Bufo californicus*)
Over 30 positive contact hours

- Los Padres National Forest - Surveyed for Arroyo toad egg strings, tadpoles, sub-adults and adults. Captured all life stages to measure morphological characteristics. Used Garmin GPS

waypoints to map locations of individuals and areas of critical, potential and unsuitable habitat. Performed night surveys to monitor for breeding individuals, using eye-shine techniques.

Northern Goshawk (*Accipiter gentilis*)
5 positive contact hours

- Klamath National Forest - Performed transect surveys while playing recorded vocalizations to solicit a response from Northern goshawks. Performed nest searches.

Swainson's Hawk (*Buteo swainsonii*)
20 positive contact hours

- Macdoel, CA – Performed nest searches to locate Swainson's hawk fledglings and pairs. Banded individuals and recorded band numbers of previously banded individuals.

Habitat Restoration Experience

- Composed annual restoration monitoring reports for the Santa Barbara Airport wetland restoration. Analysis included percent native a non-native cover, percent survival and percent cover by species.
- Assisted in the restoration of tidal wetlands at the Santa Barbara Airport by collecting local, California native plant seed and propagating native plants for re-vegetation.
- Assisted in restoration of disturbed coastal dunes by collecting genetically local, native plant seed.
- Assisted in the bluff's restoration at Nicholas Canyon State Park, Malibu by in-planting 2,000 native plants.
- Assisted in restoration of the Santa Barbara County landfill by installing irrigation systems, planning and planting 1,000 California native plants.
- Removed invasive weeds, including tamarisk, yellow/purple star-thistle and pampas grass from the Los Padres National Forest.

Vegetation Survey Experience

- Orcutt, CA- Conducted rare plant surveys throughout the Careaga oil field lease to document sensitive plant species within the property. Generated a report including maps of the observed species and recommendations for avoidance and conservation of identified species.
- San Bernardino NF, CA- Conducted vegetation surveys to map the presence/absence of the invasive weed: arrundo along river channels.

- Los Padres NF, Santa Barbara District, CA- Conducted vegetation surveys to map the presence/absence of yellow star thistle.
- Los Padres NF, Santa Barbara District, CA-Conducted rare plant presence/absence surveys for the Santa Ynez false-lupine (*Thermopsis macrophylla* var. *angina*), Late-flowered mariposa lily (*Calochortus weedii var. vestus*) and the Refugio Manzanita (*Arctostaphylos refugioensis).*

Contact Information

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Quad Knopf

Lori Bono

Biologist

AREAS OF EXPERTISE

- Small Mammal Trapping and Identification
- Bat Call Analysis

EDUCATION

- Bachelors of Science, California State University, Fresno, 2004
- Associate of Science, College of the Sequoias, 2000

PROFESSIONAL ORGANIZATIONS

- The Wildlife Society
- The Nature Conservancy
- World Wildlife Fund
- Sierra Club, Kern-Kaweah Chapter

AWARDS / RECOGNITION

- President's List, California State University, Fresno, 2007
- Faculty Sponsored Student Research Grant, $1,250 of the year, 2006
- Travel Grant, $1600 of the year, 2006
- Faculty Sponsored Student Research Grant, $940 of the year, 2005

CONTINUING EDUCATION

- Biology, California State University, Fresno, Master's Degree, 2007

Summary Paragraph – Lori Bono has been responsible for conducting wildlife surveys and assessments to determine the presence of Threatened and Endangered (T&E) species, special status species and their habitat. She has also participated in controlled burns, and botanical surveys. Lori is currently finishing her master's degree at California State University, Fresno and currently holds a bachelor's degree in biology with a minor in agricultural business from California State University, Fresno. She brings to us five years of experience in the field. Prior to joining us she served as a Field Biologist for the Ecology and Parasitology Laboratories at California State University, Fresno in Fresno, California and has volunteered with the Endangered Species Recovery Program and the Sequoia Riverlands Trust, James K. Herbert Prairie Wetland Preserve in Tulare, California.

PROFESSIONAL EMPLOYMENT

2007 – Present Quad Knopf
Biologist/Assistant Planner
2005 – 2007 California State University, Fresno,
Graduate Student Researcher
2005 – 2007 California State University, Fresno,
Teaching Associate
2004 – 2005 California State University, Fresno,
Research Assistant-Project Director

PROJECT EXPERIENCE

Yokohl Valley Ranch Project — Tulare County, California

Biologist. Scheduled and coordinated field research efforts among crew leaders and project staff. Performed Spring floristic surveys for special status plant species, vernal pool mapping, Swainson's hawk surveys, bat surveys and bat call analysis (via Sonobat), dry season fairy shrimp sampling, small mammal trapping and identification, valley elderberry longhorn beetle surveys, California tiger salamander spotlighting, and stream electro-shocking to determine presence/absence of native California lamprey and California roach.

Reedley Waste Water Treatment Plant-Fresno County, California

Biologist. Performed preconstruction surveys for nesting raptors and surveyed project and surrounding areas for valley elderberry longhorn beetles (*Desmocerus californicus dimorphus*). Responsible for construction crew supervision

and training, worker education and construction monitoring.

Dunmore Communities- Kings County, California

Biologist. Conducted preconstruction surveys for blunt-nosed leopard lizards, San Joaquin kit foxs and burrowing owls.

Sugar Plum Homes — Kings County, California

Biologist. Performed protocol level surveys for the San Joaquin kit fox. Included nightly monitoring of spotlighting routes and track stations.

NSF-EID Grant: Identifying the Flow and Control of Pathogens from the Land to the Sea: Tracking Toxoplasma from Cats to Sea Otters — California State University, Fresno, CA. *Graduate Student Researcher—Parasitology Laboratory*. Field assistant in entomological research of Toxoplasma gondii. Responsible for the collection of ectoparasites and blood samples, via retro-orbital bleeds, from rodent populations in Morro Bay, California.

Soil Moisture, Gap Analysis Experiment — California State University, Fresno, CA. *Graduate Research Assistant-Ecology Laboratory*. Assist in the installation and location of Gap plots and transects in the Sequoia National Forest. Responsible for collecting soil moisture measurements, taking hemispherical photos, and maintaining accurate data records. Involved extensive off-trail hiking carrying heavy loads.

Seed Rain Experiment at California State University Fresno — California State University, Fresno, CA. *Research Assistant Project Director-Ecology Laboratory*. Head assistant running experiment monitoring seed rain in the Sierra National Forest at the Teakettle Research Station. Involved organizing a team of researchers, locating plots with compass and topographic maps, emptying seed traps, counting, identifying and recording seed species, and analyzing seed data. Required intense off-trail hiking and maintenance and repair of seed traps.

Sequoia Riverlands Trust — James K. Herbert Prairie Wetland Preserve in Tulare, California. On May 5th, 2004 volunteered for a bird point survey, under the supervision of Bobby Kamansky, in which I walked transects and recorded point counts, which reflected frequency and species of birds observed. On August 3rd and 4th, 2004 volunteered for a prescribed burn, under the supervision of Bobby Kamansky, in which flares were used to ignite 83 acres of preserved habitat in an effort to assist native grass restoration.

Dennis Miller

Staff Biologist

Areas of Expertise

Wildlife Biology, Biological Monitoring, Biological Resource Assessment, Desert Tortoise Surveys, and Flora and Fauna Identification

Years of Experience

With URS < 1 Year

Education

MS Biology - California State University Long Beach (CSULB)

BS Ecology and Environmental Biology – CSULB

AA - Los Angeles Harbor College

Overview

Mr. Miller professional expertise includes: biological resource assessments (e.g., identification of flora and fauna, vegetation mapping, etc.) and biological monitoring.

AUSRA Blunt-nosed Leopard Lizard Presence/Absence Surveys, San Luis Obispo County, CA.

Conducted focused surveys for blunt-nosed leopard lizard over a roughly two (2) square mile fallow agricultural area in the Chorizo Plains.

Solar I Desert Tortoise Presence/Absence Surveys, San Bernardino County, CA.

Conducted a 15,000 acre desert tortoise survey for a proposed solar/thermal generating facility. Performed protocol desert tortoise surveys, vegetation community mapping, rare plant surveys, and an assessment of special aquatic resource areas.

Solar II Flat-Tailed Horned Focused Surveys, Imperial County, CA.

Conducted a 7000 acre Flat tail horned lizard survey for a proposed solar/thermal generating facility. Performed protocol Flat tail horned lizard surveys, vegetation community mapping, rare plant surveys, and an assessment of special aquatic resource areas.

References

Dr. Patrick Mock

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619-294-9400

Lenny Malo M.S.

URS Santa Ana Natural Resources Group Leader

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Santa Ana, Ca 92705

714-648-2762

Lincoln Hulse

URS Santa Ana Senior Biologist

2020 East 1st Street, Suite 400

Santa Ana, Ca 92705
714-648-2824

Areas of Expertise	Listed Species Surveys, Monitoring, Habitat Assessment and Research Wildlife Corridor Assessment Biological Impact Assessment ESA/Wetlands Permitting Vegetation Mapping and Botanical Surveys NEPA/CEQA Permitting and Environmental Analysis FEMA/NISTAC Hazard Mitigation Program NEPA Analysis Risk Assessment and Hazard Mitigation Planning Task Management
Total Years of Experience URS Other Firms	10.5 8.5 2
Education Supplemental Training	BA/1999/Biology/University of San Diego Flat-tailed horned lizard Identification Training by BLM (2007) Blunt-nosed leopard lizard Identification Training by The Wildlife Society (2007) California Fairy Shrimp Identification Class by Mary Belk (2006) Federal Wetland/Waters Regulatory Policy Training by Wetland Training Institute (2006) SW Willow Flycatcher Training By Mary J. Whitfield, Kern River Preserve, CA (2002) Desert Tortoise Survey and Handling Workshop by HDR (2001) Wetland Delineation Training by Richard Chan (2001)
Registration/Certification	U.S. Fish and Wildlife Service Recovery/Permit No. TE-135968-1 • California Gnatcatcher (Presence/Absence Surveys) • California Fairy Shrimp Blunt-nosed leopard lizard - Level II Surveyor
Overview	Ms. Theresa Miller is a USFWS-permitted wildlife biologist with more than 8 years of experience and expertise in California sensitive species, especially in San Diego County. She conducts biological surveys with a focus on birds, reptiles and amphibians, and mammals, and develops technical reports and planning documents. Specializing in environmental projects, she has participated in and managed many aspects of focused wildlife and habitat surveys and written many biological resources evaluations for NEPA/CEQA documents. Her project experience has involved task management, agency coordination, GIS/GPS analyses, GIS modeling, database development, and risk assessments for hazard mitigation planning for numerous public and private agencies.
Project Experience	**BIOLOGY/ ENVIRONMENTAL PLANNING PROJECTS** **Ausra, Inc. 180MW Solar Power Plant AFC, San Luis Obispo County, CA.** Biology Task Manager for biological surveys in support of Application for Certification for an 180MW solar power generating facility located within San Luis Obispo County. Coordinated and led field team of over 14 biologists from several offices to conduct surveys for blunt-nosed leopard lizard and san Joaquin antelope squirrel, rare plant surveys and vegetation mapping of the 1,300 acre site. Wetland/Waters of the U.S. delineation and coordination with the ACOE to obtain a 404 Permit, and coordinated directly with Agencies to obtain ESA Section 7 and CDFG Incidental Take Permits.

Solar One Energy Facility AFC and EIS, San Bernardino County, CA. Biologist/team leader on survey team in support of an Application for Certification for an 800MW thermal generating facility located within San Bernardino County. The project will cover 15,000 acres and will include over 36,000 solar dishes. Desert tortoise, Mohave ground squirrel, Mojave fringe-toed lizard, vegetation mapping, and rare plant surveys were conducted over majority of project area.

Solar Two Energy Facility AFC and EIS, Imperial County, CA. Biologist/team leader for biological surveys in support of an Application for Certification for an 800MW thermal generating facility located within Imperial County. The project will cover 7,000 acres and will include 12,000 – 36,000 solar dishes. Project included flat-tailed horned lizard focused surveys, vegetation mapping, and rare plant surveys.

Kinder Morgan California-to-Nevada Pipeline. Biologist and task/team leader for pipeline project from Colton, CA to Las Vegas, NV. Tasks include vegetation, jurisdictional waters, and sensitive species surveys and impact assessments. Coordinated and led over 25 biologists in desert tortoise, Mohave ground squirrel, vegetation mapping and jurisdictional delineations along a 500-and 1000-foot buffer of 234 miles of pipeline ROW.

Solar Power Plant Fatal Flaw Studies, LightSource Renewables, Calironia/Arizona. Task Manager for Fatal Flaw studies relative to five sites that were previously chosen (3 in CA, 2 in AZ). A complete GIS analysis and subsequent desktop review by a variety of specialists (including water, geotechnical engineering/geology, cultural resources, biological resources, and land use) were performed. A write-up of potential fatal flaws and conclusions by each resource area, in addition to the environmental constraints map generated by the GIS system were included in the deliverables.

SANDAG On-Call Environmental Services/I-805 Widening Project, San Diego County, CA. 2005-ongoing. Conducted wildlife and sensitive species surveys (including least Bell's vireo, California gnatcatcher) and wetland delineations along a 1000-foot buffer of the alignment for expansion of I-805 from the Mexican Border to the 805/I-5 merge. Co-coordinated team effort for sensitive species surveys and wetland delineations, and prepared wetland delineation report and mapping of delineated jurisdictional waters. Also conducted least Bell's vireo surveys.

Cavallo Farms Wildlife Corridor Study, City of San Diego, CA. 2006. –Field team leader for a wildlife corridor assessment of an 8-acre horse farm/training property located within an existing MSCP wildlife corridor linkage in Del Mar, California. Checked and maintained 24 passive tracking stations and 5 camera stations within and surrounding the property for 8 weeks in August and September 2006 to identify tracks and scat of large mammal species, including mountain lion, bobcat, coyote, and southern mule deer. Conducted California gnatcatcher protocol surveys and identified territories throughout study area.

Canyon Crest, City of Brea, California. 2002. - Field Coordinator for field

surveys with a particular emphasis on identification of the local movement patterns of large mammals (*i.e.*, coyote, mule deer, gray fox, bobcat, and mountain lion). Field activities included construction and maintenance of tracking stations and identification of mammal scat, tracks, and game trails. Prepared wildlife corridor assessment.

CSS Monitoring Program, City of San Diego, CA - Coordinated team effort and performed protocol sensitive species surveys for the coastal California gnatcatcher MSCP Reserve Habitat Monitoring project. Supplied City of San Diego with updated sensitive species location data to use in updating the MSCP.

Colorado River Aqueduct Operations and Management Habitat Conservation Plan, MWD of Southern California 2004-2006. - GIS Specialist, field coordinator and field biologist on team performing 2 seasons of desert tortoise and rare plant surveys along the length of the Colorado River Aqueduct from western Riverside County, California to Parker, Arizona. Created GIS field maps and species locations maps for use in determining conservation areas for the HCP within MWD ownership. Field coordinator for 12 biologists and subcontractors from several offices during second year of surveys which focused on rare plant surveys for 41 sites. Observed tortoise and identified tortoise burrows and sign. Compiled and analyzed several years of data collection including 2 years of survey data, and prepared HCP document and appendices.

Otay Mountain/Kuchamaa Cooperative Planning Area Biological Monitoring Plan, GIS Database Development, and Cultural Resources Study, BLM. URS prepared a complete GIS Database, Biological Monitoring Plan, and Cultural Resources Study for the Otay/Kuchamaa Cooperative Planning Area managed by the Bureau of Land Management in San Diego County, Ca. The objective of this task order was the development of the baseline database – developed as GIS data layers – needed to conduct the planning process and EIS analysis, including development of a reasonable range of land management alternatives. The focus of the baseline conditions was related directly to the biological and cultural resources for the management area. This project received a Merit Award from the San Diego AEP.

Metropolitan Water District, Upper Feeder-Santa Ana River Embankment Protection. 2006. Biology task leader to assist FEMA with CEQA/NEPA compliance. Conducted least Bell's vireo surveys along the Santa Ana River in Riverside County to determine impacts from project implementation as part of FEMA HMGP mitigation/restoration project.

Whitewater Mutual Water Company, Irrigation Water Intake / Storage Structure Repair. 2006. Biology task leader to assist FEMA with CEQA/NEPA compliance. Conducted arroyo southwestern toad and southwestern willow flycatcher surveys to determine biological impacts of restoring the irrigation water intake and water storage facilities to pre-disaster condition. Part of FEMA HMGP program.

State Route 56/Interstate 5 Interconnections, City of San Diego, California. 2005-ongoing. Conducted least Bell's vireo surveys and vegetation mapping of study site for the "connectors" project for Interstate 5 and State Route 56. Prepared

biotechnical report. Connections from southbound Interstate 5 to eastbound State Route 56 as well as the connection from westbound State Route 56 to northbound Interstate 5 were not completed as part of the initial State Route 56 project.

Oak Valley Substation & Transmission Line Project, Southern California Edison, Riverside County, California. 2006. Conducted sensitive species surveys (including least Bell's vireo and southwestern willow flycatcher) of project area for the installation of a new substation, re-conductoring of several transmission lines and new installation of several transmission lines in Riverside County (including the cities of Beaumont, Banning, and Calimesa).

Mira Sorrento Place Road Extension, City of San Diego, California.2005. Conducted biological construction monitoring of during implementation of road extension.

Professional Associations

Association of Environmental Professionals, Member, (2000–Present)
Women's Environmental Council, Member, (2002 - Present)
Ecological Society of America Member, (2002-Present)
Wildlife Society Member, (2001 – Present)
Desert Tortoise Council Member, (2002-Present)

Areas of Expertise	Wildlife Biology Biological Impact Assessment ESA/Wetlands Permitting Habitat Conservation Planning Wildlife Corridor Assessment Habitat Restoration Planning and Monitoring Biology Group Management
Years of Experience URS Other Firms	29 10 19
Education	PhD/1990/Biology/University of California, Los Angeles CPh/1983/Biology/University of California, Los Angeles BS/1979/Wildlife Biology/University of California, Davis
Registration/Certification	Certified Senior Ecologist/Ecological Society of America Certified Wildlife Biologist®/The Wildlife Society Training in ACOE Wetland Delineation Methods & Regulatory Policy OSHA Hazardous Waste Operations and Emergency Response Training/Section 1910.120 Training in Use of ArcView and Auto Cad R14 Software
Overview	Dr. Mock has over 29 years of professional experience as a wildlife biologist and environmental consultant. He has served as principal investigator for studies of endangered wildlife, directing and participating in field investigations, data analysis, and preparation and review of technical reports and mitigation plans. Dr. Mock has extensive national and international experience in the assessment of impacts on biological resources, especially in relation to wetland ecosystems, coastal sage scrub, and endangered species. Dr. Mock has produced environmental impact assessments of various development projects throughout western US and the Pacific Rim in conformance with NEPA, CWA, and ESA. His specific area of expertise is in the ecology, management, and monitoring of vertebrate populations. He has conducted investigations of several sensitive bird species, including California least tern, brown pelican, least Bell's vireo, California gnatcatcher, coastal cactus wren, and bald eagle. He is experienced in landscape scale habitat evaluation modeling, preserve design, wildlife corridor assessment, and population viability analysis. He is certified as a Senior Ecologist by the Ecological Society of America and as a Certified Wildlife Biologist® by The Wildlife Society. Dr. Mock participates in all aspects of project management, including client liaison, budgeting, field investigations and research, supervision of field biologists, regulatory permitting assistance, agency liaison, report preparation and review, public presentations, and expert testimony. Dr. Mock has also served as a Lecturer at the University of San Diego and University of California, San Diego, where he has taught courses on biological assessment, principles of ecology, and wildlife management. Dr. Mock has thirteen publications in peer-reviewed science journals related to wildlife ecology, ornithology, and habitat conservation topics.

Project Experience

ECOLOGICAL RESEARCH

Ecological Studies of California Gnatcatcher (*Polioptila californica*), Home Capital Corporation, Weingarten, Siegel, Fletcher Group, Inc., and Skyline Wesleyan Presbyterian Church. Served as project manager/principal investigator for a comprehensive ecological study of over 40 pairs of California gnatcatchers in the Rancho San Diego area in order to document home range size, habitat preferences, dispersal behavior, breeding/population biology, and effects of development.

Foraging Ecology of California Least Tern (*Sterna antillarum browni*), Mission Bay, Department of Parks and Recreation, City of San Diego. Served as project manager/principal investigator, responsible for documentation of least tern foraging habitats within Mission Bay Park.

Habitat Characterization of Ephemeral Watercourses Receiving Treated Wastewater Effluents in the Arid Western U.S., Wastewater Management Department, Pima County, Arizona/EPA. Served as project coordinator for the research team assigned to gather data at two southern California sites and acted as the lead wildlife biologist for the overall program.

Behavioral Study of the Effects of Military Helicopter Activity on Breeding Least Bell's Vireo, U.S. Navy. Served as the principal investigator for an intensive behavioral study of least Bell's vireo breeding adjacent to Camp Pendleton Marine Corps Air Station. This empirical study verified a theoretical model of noise impacts to breeding vireos.

Study of the Effects Associated with Modification of Sand Grain-size on Shorebird Foraging Behavior, Department of Parks and Recreation, City of San Diego. Project manager/principal investigator for an impact assessment of proposed modification of sand grain-size as an erosion-control measure in Mission Bay Park. Study involved documentation of changes in shorebird foraging behavior associated with erosion-control methods.

San Diego Bay Waterbird Survey, U.S. Navy. Project Director of a three-year study of waterbird use of north and central San Diego Bay. Involved weekly boat surveys of waterbirds and other sensitive species. This study allowed for a detailed analysis of spatial and temporal variation of waterbird abundance and habitat use within San Diego Bay.

Behavioral Study of the Effects of Military, Fixed-wing Aircraft Activity on Idaho Bighorn Sheep, U.S. Air Force. Dr. Mock participated in the experimental design and statistical analysis of this intensive behavioral study of bighorn sheep in the Owahee Range of western Idaho.

Wildlife Corridor Study of the 23,000-Acre Otay Ranch, San Diego County, City of Chula Vista. Project director responsible for documentation of wildlife corridors on Otay Ranch and the Miramar-Peñasquitos area of San Diego, made recommendations for the retention and protection of regionally significant corridors within and throughout the ranch.

Wildlife Corridor Assessment for Canyon Crest Development Project, Brea California. City of Brea. Senior biologist for a detailed, wildlife corridor assessment for the project vicinity around a proposed residential development project in the City of Brea, California. Landscape-scale wildlife movement routes

between open space areas associated with Carbon Canyon Road were identified and redundant routes through the project site were conserved as part of the project design.

Cavallo Farms Wildlife Corridor Study, City of San Diego, CA. 2006. – Sr. biologist for a wildlife corridor assessment of an 21-acre horse farm/training property located within an presumed MSCP wildlife corridor linkage in Del Mar, California. Study monitored 24 passive tracking stations and 5 camera stations within and surrounding the property for 8 weeks to identify tracks and scat of large mammal species, including mountain lion, bobcat, coyote, and southern mule deer. California gnatcatcher protocol surveys and identified territories were conducted throughout study area.

Raptor Ecology and Management Study on Otay Ranch, City of Chula Vista. Project director responsible for documenting nesting, roosting, and foraging areas of sensitive bird-of-prey species using radio telemetry methods. Species studied included golden eagle, northern harrier, black-shouldered kite, Cooper's hawk, and burrowing owl.

Analysis of Brown Pelican Migration Patterns from Band Recovery Data, Los Angeles County Natural History Museum. Principal investigator. Dr. Mock also assisted Dr. R.W. Schreiber in his field studies of the reproductive ecology of pelicaniform birds on Johnston Atoll, Central Pacific Ocean.

Study of Growth Energetics and Food Intake of Nestling Thick-billed Murre (*Uria lomvia*) Pribilof Islands, Bering Sea, Alaska, Department of Ecology and Evolutionary Biology, University of California, Irvine. Principal investigator for a study that included use of isotopically labeled water and body composition analysis. Dr. Mock was a member of a large research team led by Dr. G.L. Hunt, which studied the effects of colony size on the reproductive ecology and energetics of colonial seabirds.

Comprehensive Studies of the Reproductive Energetics and Ecology of the Western Bluebird (*Sialia mexicana*), Department of Biology and Laboratory of Biomedical and Environmental Sciences, University of California, Los Angeles. As a doctoral candidate, Dr. Mock's studies included comparative growth energetics of nestling western bluebird and ash-throated flycatcher (*Myarchus cinerascens*), use of the doubly-labeled water method, time-activity budget analysis, nestling growth analysis, laboratory measurement of animal metabolism, body composition analysis, bird banding methods, and statistical analysis.

Development of an *in vivo* Method to Estimate Lipid Reserves of Vertebrates, Laboratory of Biomedical and Environmental Sciences, University of California, Los Angeles. As a research associate in Dr. Ken Nagy's Lab, Dr. Mock participated in validation studies of the cyclopropane methods to estimate lipid reserves of vertebrates.

San Diego County Breeding and Wintering Bird Atlas Project, San Diego Natural History Museum. A principal participant in the design and implementation of 6-year atlas project. Providing GIS mapping support and assistance in data analysis.

REGIONAL NATURAL RESOURCE PLANNING

Multiple Species Conservation Program, City of San Diego Clean Water Program. Principal wildlife biologist directing the gap analysis, preserve design, wildlife corridor analysis, and resource assessment to delineate a network of potential preserve areas for a 900-square mile area in southwestern San Diego County. The objective of this three-year program is to develop a plan for the conservation and management of self-sustaining, viable populations of federally listed species and key candidate species and their habitats. Included in this program is the development of population viability analyses for California gnatcatcher and coastal cactus wren, a comprehensive GIS-based habitat evaluation model to aid in the relative valuation of habitat areas and identification preserve planning areas, and a long-term monitoring plan of conserved habitats and selected target species. This project received numerous citations and awards for excellence in resource planning.

Carlsbad Subarea Habitat Conservation Plan/NCCP, Department of Planning, City of Carlsbad. A principal participant in the evaluation of habitat and target species evaluations for proposed city-wide preserve system.

California Gnatcatcher Management Plan for Fallbrook Detachment, Seal Beach NWS, U.S. Navy. Dr. Mock participated in the development of a management and research plan to aid in the relative valuation of habitat areas and assignment of habitat management priorities within the study area.

San Marcos Subarea Habitat Conservation Plan/NCCP, Department of Planning, City of San Marcos. Providing technical assistance to City staff regarding habitat and target species evaluations for proposed city-wide preserve system; Technical review of subarea plan document.

Rancho Palos Verdes Natural Communities Conservation Program Subarea Habitat Conservation Plan and EIR, City of Rancho Palos Verdes. Project Manager and Technical Lead for program assisting the City of Rancho Palos Verdes in the first phase of a NCCP subarea plan for coastal sage scrub habitats. Phase I involves the following tasks: (1) assemble and review existing information on biological resources, land uses, and land-use constraints, (2) perform reconnaissance and focused biological surveys, (3) refine current vegetation mapping and assess the restoration/enhancement potential of disturbed habitats and non-native vegetation, (4) develop three preliminary preserve design alternatives being evaluated in Phase II of the program, and (5) interact with resource agencies, landowners, and local working group of interested parties to incorporate their concerns into the preserve design process. Phase II involved the preparation of the HCP document for public review and Phase III involved the preparation of the EIR and Implementing Agreement documents. Key sensitive species evaluated in the plan include Palos Verdes Blue and El Segundo Blue butterflies, California gnatcatcher, coastal cactus wren, and bright green dudleya.

Desert Lands Habitat Conservation Plan, Metropolitan Water District. Project Manager for HCP and CEQA/NEPA process to address potential incidental take associated with the operation and maintenance of the Colorado River Aqueduct. Program included sample plot assessments across 97,000 acres of MWD owned lands.

North County Multiple Habitat Conservation Program, San Diego Association of Governments. Principal member of a team of biologists formulating a regional

preserve design for a 1,000-square-mile area in northwestern San Diego County. This program is similar to the City of San Diego's MSCP program (see above).

Key Deer Habitat Conservation Plan (HCP), Florida Department of Transportation and Monroe County. A principal participant in habitat and target species assessments and the development of a conservation plan for Big Pine Key and No Name Key encompassing over 5,000 acres of potential Key Deer habitat.

Adaptive Management Research Program for Sweetwater Reservoir Least Bell's Vireo Population, Sweetwater Authority. Dr. Mock provided technical assistance in the development of testable hypotheses, including statistical power analyses for the habitat and population monitoring of the large least Bell's vireo population associated with the reservoir.

Chevron Lokern HCP EIR, Chevron Oil Corporation. Senior biologist overseeing EIR assessment of proposed HCP for over 14,400 acres of sensitive habitats and 31 sensitive species within Kern County.

Santa Monica Mountains National Recreation Area General Development Plan EIS, National Parks Service. Senior biologist overseeing biological assessment of the master plan for the 150,000-acre NRA in coastal Los Angeles County.

California Gnatcatcher Sweetwater River HCP, Home Capital Corporation/San Diego Association of Governments. Project manager and principal author of the first HCP developed for the California gnatcatcher. This HCP presented a program designed to ensure the continued existence of the California gnatcatcher in the Rancho San Diego/Sweetwater River Drainage and proposed to merge the management of the upland habitats with the riparian habitat proposed for management of the least Bell's vireo. This document presented information on the status and biology of the gnatcatcher, including a population viability analysis of the Sweetwater River gnatcatcher subpopulation as an isolate. The plan set guidelines for the conservation and management of coastal sage scrub designated as Conserved Habitat. Management actions were identified in a structured program within the Sweetwater River Drainage through preservation and active management of sage scrub habitat, specifically applied land use controls, and local private and public agreements.

City-wide Biological Resource Assessment and Environmental Planning for the City of Poway, San Diego County, Department of Planning, City of Poway. Task manager for a city-wide California gnatcatcher survey encompassing over 8,000 acres of suitable habitat and development of habitat assessment for coastal sage scrub habitats. Suitable California gnatcatcher habitat within Poway and its Sphere of Influence was identified and recommendations for habitat acquisition priorities and management of biological open space to sustain viable California gnatcatcher populations were made. This project won an Orchid award in the Orchids and Onions Community Awareness Program.

Otay Mountain/Kuchamaa Cooperative Planning Area Biological Monitoring Plan, GIS Database Development, and Cultural Resources Study, BLM. URS prepared a complete GIS Database, Biological Monitoring Plan, and Cultural Resources Study for the Otay/Kuchamaa Cooperative Planning Area managed by the Bureau of Land Management in San Diego County, Ca. The objective of this task order was the development of the baseline database – developed as GIS data

layers – needed to conduct the planning process and EIS analysis, including development of a reasonable range of land management alternatives. The focus of the baseline conditions was related directly to the biological and cultural resources for the management area. This project received a Merit Award from the San Diego AEP.

BLM Resource Management Plan Revision, and EIS, and Biological Assessment, Socorro, New Mexico. Biology task manager for impacts analyses on special status species, vegetation, wildlife and livestock grazing sections for an EIS and BA.

Oceanside Subarea Habitat Conservation Plan/NCCP, Department of Planning, City of Oceanside. A principal participant in habitat and target species assessments and the evaluation of a regional California gnatcatcher movement corridor between San Marcos and Camp Pendleton through Carlsbad and Oceanside.

Point Loma Habitat Management Plan, U.S. Navy. Participated in the development of a habitat evaluation model to aid in the relative valuation of habitat areas and assignment of conservation and habitat management priorities within the study area.

Escondido Master Plan of Parks, Trails, and Open Space/EIR, Department of Planning, City of Escondido. Task manager for identification of regionally significant wildlife corridors throughout the City of Escondido. Regional and site-specific analyses of Escondido's biological resources were made as part of the city's commitment to expand park and recreation facilities, establish long-term open space, and identify mitigation priorities. The regional analysis identified a primary wildlife corridor system to be retained within the city, and concentrations of high quality biological resources recommended for protection through open space easements or for use as mitigation.

Wetlands Management Plan for the Island of Saipan, Coastal Resource Management Office, Commonwealth Government of the Northern Mariana Islands. Project manager/zoologist for a comprehensive wetlands management plan for the island of Saipan. Study involved habitat evaluation and assessment. Recommendations for habitat acquisition priorities and management were made for the conservation of significant wetland resources on Saipan.

The Oasis Project, U.S. Air Force, Air Combat Command. Senior wildlife biologist involved in landscape level evaluation of biodiversity on two Air Force training ranges (in Idaho and North Carolina) compared to adjacent areas where land use patterns differ from the training ranges.

DeLuz Habitat Mitigation Bank, The Eadington Companies. Biological consultant assisting the formation and wildlife agency approval of a 141-acre San Diego County mitigation bank dominated by riparian and oak woodlands.

San Elijo Hills Open Space Management, San Marcos, CA
Oversaw implementation of habitat management plan for 1000 acres of natural open space in the San Elijo Hills community. Monitored fire fuel management task, invasive weed removal, habitat restoration, and prevention of unauthorized dumping. Included a population census of California gnatcatcher to measure success of the conservation effort. Prepared yearly summary reports.

FEMA/CDF and FEMA/City of San Bernardino Prescribed Burn Program - Prepared Programmatic Biological Assessments for proposed prescribed burns in San Bernardino County.

FEMA/City of San Diego Vegetation Management Program - Sr. Reviewer of Biological Assessment for proposed $3M vegetation reduction projects in San Diego.

BIOLOGICAL ASSESSMENT/MITIGATION

Department of Defense

SEA for MCAS Miramar Housing Project, U.S. Navy. Sr. Biologist overseeing the biological impact assessment for a SEA document. Provided technical support to ESA Section 7 consultation through the delineation of historically occupied gnatcatcher habitat.

USMC BEQ Housing Siting Studies – NEPA and Operational Constraints, MCB Camp Pendleton. US Navy. Provided senior technical review of biological constraints assessments.

Biological Assessment/EIS of BRAC Actions at MCAS Camp Pendleton, U.S. Navy. Principal Investigator for an intensive behavioral ecology study of potential effects of helicopter overflight activity on the vocalization behavior of the endangered least Bell's vireo. This study also included a statistical analysis of vireo breeding success in relation to CNEL noise contours for the MCAS. Senior Biologist overseeing preparation of NEPA/EIS documents that focused on indirect effects to least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher.

Biological Assessment/EIS of BRAC Actions at NAS Miramar, U.S. Navy. Senior Biologist overseeing biological assessment of realigning NAS Miramar as MCAS Miramar. NEPA/EIS documents that focused on potential adverse effect to vernal pool habitat and associated sensitive species, wetlands, California gnatcatcher, and regional wildlife corridors.

Programmatic EIS for Testing and Operations at Pt. Mugu Air Warfare Center, U.S. Navy. Senior Biologist overseeing biological assessment of testing and operation programs. Emphasis was on associated biological effects on sensitive waterbirds and marine mammals within the 36,000 square mile Sea Test Range in the Southern California bight.

Biological Assessment/EA of Helicopter Outlying Landing Field, MCB Camp Pendleton, U.S. Navy. Senior Biologist overseeing preparation of NEPA/ESA documents for proposed HOLF facility. Biological issues included potential impacts to vernal pool habitat and associated sensitive species, Stephen's kangaroo rat, arroyo southwestern toad, and indirect effects to California gnatcatcher and least Bells' vireo.

Construction Biological Monitoring Program for VertRep Project, Camp Pendleton, Stronghold Electric/U.S. Navy. Project manager for implementation of construction monitoring and environmental awareness program for contractor staff for a construction of a helicopter landing facility at a coastal bluff site. Sensitive resources protected included vernal pools, coastal sage scrub, and California gnatcatcher.

Homeporting Project EIS, San Diego Bay, U.S. Navy. Senior Biologist assessing impacts on wildlife associated with dredging and site improvements for the homeporting of two aircraft carriers in San Diego Bay.

San Nicolas Island Barge Landing EA, U.S. Navy. Principal biologist for the biological assessment of existing barge landing activities and evaluation of alternative landing sites on the island. EA focused on potential impacts to marine mammals, snowy plover, seabird colonies and sensitive plants.

Preconstruction Survey for Micronesian Megapode at the Saipan Radar Installation, Commonwealth of the Northern Marian Islands, U.S. Air Force. Principal investigator that conducted focused surveys for the sensitive Micronesian megapode and recommended mitigation to minimize impacts to this species.

Transportation Projects

Mammoth Lakes Airport Expansion EIS, FAA. Senior biologists overseeing the biological assessment of new commercial service at regional airport. Issues included indirect impacts to breeding grounds of sage grouse.

Port of San Diego/Airport Authority Demolition EIR, San Diego, CA. Biology Task Manager for the EIR for the proposed demolition of existing aviation manufacturing facilities located on North harbor Drive in San Diego, CA. Wildlife agency coordination, and least tern nesting BMP measures are key issues.

Natural Environment Study, Interstate 805 Widening Project, SANDAG. Task Manager overseeing NES assessment, vegetation mapping, and T&E species surveys for 25-mile freeway widening project. Species included least Bell's vireo, San Diego fairy shrimp, and California gnatcatcher.

Coastal Rail Trail EIR/CE, San Diego, California. Biology Task Manager for an EIR/CE for a proposed trail that would start near Del Mar and run south to connect to the existing Rose Canyon bike path. Three proposed Class I bike path areas are the focus: Sorrento Valley Road between Carmel Valley Road and Carmel Mountain Road, Roselle Street to Eastgate, and Genesee (Nobel Drive) to Gillman Drive. The project includes multiple agency review including Caltrans/FHWA, City of San Diego and others.

Carmel Valley Road Improvement Project EIR, City of San Diego. Biology task manager.

Construction Monitoring and Burrowing Owl Removal Program for SR 7, El Centro, Caltrans. Project Manager.

Exotic Predator Removal Program, San Mateo Creek and Lagoon, Caltrans. Project Manager for an exotic predator control program at San Mateo Creek in San Diego County. Removed exotic species including bullfrogs, crayfish, and mosquito fish using gigs and seines to benefit native rare tidewater gobies and arroyo toads.

Natural Environment Study (NES) of SR 11, East Otay Mesa Border Crossing, Caltrans. Project manager for biological assessment of a 1,000-acre study area.

Endangered Species Surveys for Interstate 5 Widening Project, Caltrans.

I-5/SR-56 Interchange Improvement Project EIR/EIS, Caltrans and City of San Diego. Project manager for biological assessment and CEQA process.

Biological Surveys for SR 52 Widening Project, Caltrans. Project manager for biological assessment.

Construction Monitoring for SR 73 Water Quality Facilities Upgrade Project, Caltrans.

Biological Assessment, Cajon Pass Triple Track Project, BNSF Railroad

Construction Monitoring and Burrowing Owl Mitigation Program for Union Pacific Track Removal Project, Union Pacific Railroad.

Wetland Mitigation Planning and Permitting Assistance for Light Rail Transit (LRT) Projects in San Diego County, Metropolitan and North County Transit Development Boards. Project manager responsible for impact assessment, mitigation planning, and permitting assistance for several proposed commuter rail projects whose alignments must cross wetland habitat.

North County Light Rail Transit Project EIR, North County Transit Development Board. Principal wildlife biologist assessing potential biological impacts associated with a light rail transit line between Oceanside and Escondido.

Biological Assessments of Four Road Widening Projects, County of San Diego. Senior biologist overseeing the biological assessment of four road-widening projects in southeastern San Diego County. Sensitive species included least Bell's vireo and California gnatcatcher.

Biological Assessments of Proposed Widening and Extension of San Elijo Road, Twin Oaks Valley Road, Rancho Santa Fe Road, and Melrose Drive, City of San Marcos. Senior biologist and author of biological assessments for four critical regional road projects in San Marcos. Key biological issues included California gnatcatcher and regional wildlife corridors.

Biological Assessment and EIR for Scripps-Poway Parkway, City of Poway. Senior biologist for this major roadway project through the undeveloped portion of south Poway that provides a regional linkage between SR 167 and I-15. Major issues included California gnatcatcher, wildlife corridors, and potential conflicts with the City's habitat conservation plan.

Sorrento Valley Road Improvement Project EIR, City of San Diego. Senior biologist providing biological assessment for road project directly adjacent to Los Peñasquitos Lagoon. Sensitive resources included saltmarsh and riparian wetlands, clapper rail, Belding's Savannah sparrow, and California gnatcatcher and two regional wildlife corridors.

Construction Monitoring and Burrowing Owl Mitigation Program for Union Pacific Track Removal Project, Union Pacific Railroad. Project manager for implementation of biological monitoring program for track removal between Holtville and El Centro, Imperial County, California.

Las Pilitas Bridge Replacement Project, County of San Luis Obispo. Senior biologist providing technical review of Natural Environment Study documents.

Rigel Street Bridge Replacement Project, City of San Diego. Provided biological assessment and assistance in processing streambed alteration agreement.

Atchinson Avenue Bridge Replacement Project, City of Roseville. Senior biologist overseeing the preparation of Natural Environment Study document and

wetlands delineation for wetlands permitting process. Sensitive species include Coho salmon, steelhead, and valley oak

Ford Avenue Bridge Replacement Project, Alameda Corridor Project Team. Provided wetlands permitting assistance.

Energy Projects

Wind Implementation Monitoring Program (WIMP IV), County of Riverside Planning Department. Biology Task Manager and lead consultant for the Planning Department to evaluate the ongoing and potential future impacts of Wind Farm Development within the San Gregornio Wind Resource Area. Document assessed visual, noise assessment, air quality, communication systems, navigation element study, fire protection, police services, retrofit and biological resources elements of an ongoing monitoring program.

Phase I Avian Risk Assessment of Wind Energy Projects in Brisco County TX, RES America Developments. Provided technical peer-review of consultant siting assessment for risk to avian mortality.

Horizon Wind Energy Project, Barstow CA. Biology task manager overseeing biological surveys for rare plants and desert tortoise within a 43,000-acre study area.

CHEVRONTEXACO de MEXICO Onshore LNG Receiving Terminal, Baja California. Senior biologist overseeing biological assessment of an offshore LNG terminal located near the Coronado Islands, Baja California, Mexico. Key issues included assessment of potential impacts to seabirds.

Kinder Morgan California-to-Nevada Pipeline. Biology Task Manager for 233-mile fuel pipeline project from Colton, CA to Las Vegas, NV. Task includes vegetation, jurisdictional waters, and sensitive species surveys and impact assessments.

Niland Proposed Power Plant, Small Power Plant Exemption (SPPE), Imperial County, CA. Imperial Irrigation District Peaker Development Project. Biological Construction Monitoring Task Manager for a 30-acre generating station, Imperial County.

Starwood Midway Peaker Power Plant AFC. Senior biologist overseeing biological assessment and ESA permitting of power plant project in Kern County.

Panoche Peaker Power Plant AFC. Senior biologist assisting in biological assessment and ESA permitting of power plant project in Kern County.

Ausra Solar Thermal Energy Project AFC. Senior biologist overseeing biological assessment and ESA permitting of solar thermal power plant project in San Luis Obispo County. Project involved intensive surveys for blunt-nosed leopard lizard on a 1000-acre project area.

SES Solar One Energy Project AFC. Senior biologist overseeing biological assessment and ESA permitting of power plant project in San Bernardino County. Project involved intensive surveys for desert tortoise and Mohave ground squirrel on a 16,000-acre project site and 100-mile transmission line.

SES Solar Two Energy Project AFC. Senior biologist overseeing biological

assessment and ESA permitting of power plant project in Imperial County. Project involved intensive surveys for desert tortoise and Mohave ground squirrel on a 8,000-acre project site and 8-mile transmission line.

Bethel Solar Thermal Hybrid Power Project, Niland, Imperial Co. CA. Senior biologist overseeing biological assessment of solar thermal and biofuels hybrid power plant project.

San Joaquin Solar Hybrid, Coalinga CA AFC. Senior biologist overseeing biological assessment of solar thermal and biofuels hybrid power plant project.

CalEnergy Salton Sea Unit 6 Geothermal Power Plant AFC. Project manager overseeing AFC document preparation. The California Energy Commission processed the licensing for construction and operation of the Salton Sea Unit 6 Geothermal Power Project, a proposed 185 net megawatt power plant in Imperial County, near the southern extent of the Salton Sea. Geothermal projects from the Salton Sea Known Geothermal Resource Area rarely come to the commission for action as most of these are much smaller, ranging from 10 to 45 megawatts, not requiring Energy Commission licensing. The Salton Sea Unit 6 project was unique based upon the size of the proposed plant, the location of the project near environmentally sensitive habitat, and the Sonny Bono Salton Sea National Wildlife Refuge. In addition, Imperial County has unique socioeconomic and geographic conditions. These factors provide the complex context within which this project was evaluated. Most CEC technical staff were not initially familiar with the area, or the unique aspects of a geothermal power facility deriving steam flashed directly from produced hot brine. The AFC document prepared by URS for the project provided an excellent platform for the CEC analysis, clearly presenting the necessary technical information. The complex information was presented in a format and context that highlighted the unique aspects of geothermal power production, and the environmental and socioeconomic conditions of the project area and this region. Notably, the CEC deemed the AFC "data adequate" within nine months of initial project application.

Meadow Valley Generating Plant EIS, Southern Nevada. Biology Task Manager overseeing desert tortoise and rare plant surveys and biological assessment for a 1,000 MW gas-fired combined cycle power plant proposed north of Las Vegas.

Larkspur Power Facility AFC Amendment, San Diego County, CA. Sr. Biologist for the Post-Certification Amendment to modify the Existing Larkspur Energy Facility in Otay Mesa, San Diego, to add a third generator.

Infrastructure Facility Projects

Big Tujunga Dam Seismic Rehabilitation and Spillway Modification Project. Senior Biologist assisting FEMA and Los Angeles County Department of Public Works in the CEQA/NEPA compliance for the proposed seismic retrofit of Big Tujunga Dam, near Sunland, Los Angeles County. URS is conducting biological surveys of the project area and is preparing CEQA/NEPA and Section 7 documents. Key issues include construction and dam operational impacts to Santa Ana Sucker and Arroyo Toad Designated Critical Habitat.

Miramar General Development Plan EIR/EIS, City of San Diego Waste Management Department. Participant in the evaluation of plan proposing a variety of landfill-associated facilities. Sensitive species, habitat, and wildlife

corridors were issues of concern.

Biological Assessment of Proposed International Airport at Maj Po Mash, Shenzhen, China, City of Shenzhen. Principal investigator that evaluated potential impacts to biological resources at wetlands and bay adjacent to a proposed airport site.

Emergency Water Storage Project, San Diego County Water Authority. Principal author of Biological Assessment that included detailed estimation and justification of incidental take and habitat values of endangered species and their habitats expected to be impacted by the proposed reservoir project. Assessment was used in ACOE 404 permitting and ESA Section 7 consultation with the wildlife agencies. This project received an AEP planning award.

Evaluation of Biological and Water Quality Monitoring Program of the Shanghai River, China, Shanghai Sewerage Authority. Principal investigator responsible for assessment and recommendations for biological and water quality monitoring program for the Shanghai Sewerage System.

Alvarado Water Filtration Plant Project, City of San Diego. Senior biologist overseeing construction monitoring impacts to coastal sage scrub and California gnatcatchers. The gnatcatcher population within the project vicinity was monitored for 3 breeding seasons during project environmental review and implementation.

Chandler Landfill Water Recharge Basin Demonstration Project, Rolling Hills, CA, Water Replenishment District of Southern California. Senior biologist overseeing wetlands delineation and permitting assistance.

Gilroy Landslide Remediation Evaluation, Santa Clara Valley Water District. Senior biologist overseeing biological assessment and permitting for remediation of a landslide threatening a major water aqueduct. Sensitive species include red-legged frog, California tiger salamander, San Joaquin kit fox, and valley oak.

SMUSD Administration Office Complex, San Marcos Unified School District. Senior biologist overseeing biological assessment of vernal pool site proposed for a school district office complex.

Nursery Products Composting Facility Initial Study (IS)/Mitigated Negative Declaration (MND)/Environmental Impact Assessment (EIR), San Bernardino, CA. Biology Task Project for the CEQA assessment development of a 160-acre biosolids/green waste composting facility near Hinckley, San Bernardino County.

Mountain Pass Mine Expansion Project, Molycorp, Inc. Senior biologist overseeing biological assessment and wetland delineation for the 30-year expansion plan for an existing rare earth element mine in San Bernardino County. Sensitive species included desert tortoise and three rare deserts plant species.

Residential Development Projects

EIR/Mitigation Monitoring Program for San Elijo Ranch Development, City of San Marcos. EIR biologist and project manager for development and implementation of a mitigation monitoring program for the approved 2,100-acre San Elijo Ranch development. Tasks included evaluating potential impacts to sensitive plant and animal species and negotiating mitigation measures deemed acceptable to all concerned parties. Sensitive plant and animal surveys were conducted and format mitigation plans were prepared. Habitat restoration plans and 404/1603

permit applications for impacts to wetlands, coastal sage scrub, and native grassland were prepared.

Biological Assessment and Mitigation Planning, Calavera Heights Development, Carlsbad, Lyon Communities. Project manager overseeing assessment of biological impacts and development and implementation of mitigation monitoring program. Also provided permitting assistance and resource agency liaison services.

Otay Ranch Programmatic EIR, City of Chula Vista/County of San Diego. Participated in biological assessment of proposed development and preserve design of 23,000-acre Otay Ranch in southern San Diego County. Major issues included potential impacts to wildlife corridors and a multitude of sensitive wildlife species and their habitats.

On-call Consulting Services for Otay Land Company, Otay Land Co., LLC. Senior biologist overseeing on-call environmental consulting services contract for 4,800-acre ownership within Otay Ranch planning area. Projects are listed below

- **OLC Otay River Parcel C EUC Soil Storage Project**
- **OLC Otay River Parcel C Development Project**
- **OLC Otay River Parcel B Development Project**
- **OLC Proctor Valley Parcel D Sensitive Resource Surveys**

Skeet Range Redevelopment Project, Flat Rock Land Company, Chula Vista, CA - Project manager for the biological assessment and ESA Phase I reports.

Otay River Parcel A Development, Flat Rock Land Company, Chula Vista, CA. Project manager for the biological assessment report.

University Commons EIR and Mitigation Plan, City of San Marcos. Biological assessment of a residential/commercial development and preparation and implementation of a biological mitigation monitoring program. Services included resource agency liaison and permitting assistance.

Salt Creek Ranch EIR, City of Chula Vista. Principal wildlife biologist assessing residential/commercial development and preparation of a biological mitigation monitoring program. Services included resource agency liaison and permitting assistance.

Fanita Ranch EIR, City of Santee. Participated in the biological assessment of a 5,600-acre specific plan area. Impacts to sensitive habitats, species and wildlife corridors were the primary issues of concern.

Development Constraints Assessment for Tom Dyke Ranch, Saint Vincent De Paul Society. Project manager overseeing detailed development constraints assessment for a proposed children's camp and conference center facility.

San Marcos Highlands Biological Assessment, City of San Marcos. Project manager overseeing assessment of biological impacts for a proposed residential development on a 250-acre site.

Hampton Heights Project EIR, County of San Bernardino. Provided assessment of biological impacts for a proposed residential and golf course development on a 470-acre site near Redlands, California.

Willows Development Project, Temecula, Willows Investment Group. Senior

biologist for wetlands delineation and permitting program for a 32-acre residential development.

Vista Palisades Estates Project, Capital Pacific Homes. Senior biologist for assessment of biological impacts for a proposed residential development on a 390-acre site near Vista, California.

Benicia Specific Plan EIR, City of Benicia. Principal wildlife biologist assessing a residential/commercial development within a 2,500-acre specific plan area. Impacts to sensitive habitats, species, and wildlife corridors were the primary issues of concern.

East Otay Mesa Biological Assessment, County of San Diego. Participated in the biological assessment of a 5,300-acre specific plan area. Impacts to sensitive habitats, species and wildlife corridors were the primary issues of concern.

Santa Fe Valley/4S Ranch Biological Assessment, County of San Diego. Participated in the biological assessment of two specific plans areas encompassing about 6,000 acres. Developed a habitat evaluation model to aid in the relative valuation of habitat areas.

Coastal Development, Recreation Projects

ESPN X-Games, Mission Bay San Diego, ESPN. Biological consultant providing technical support of California Coastal Commission permitting process. Provided biological assessment and proposed mitigation program for potential impacts to California least tern breeding colony.

Mission Bay Park Shoreline Stabilization and Restoration Project and Natural Resource Management Plan EIR, City of San Diego. Principal wildlife biologist in the biological evaluation of methods proposed for shoreline stabilization/restoration and the proposed long-term maintenance/enhancement plan for natural resources. Primary issues of concern included impacts to wetlands, least tern foraging habitat, and shorebird foraging habitat.

The Headlands, Dana Point, Headlands Reserve, LLC. Assisting with the processing of the development plan and California Coastal Commission coastal permit process for this 121-acre coastal property that supports California gnatcatcher, Pacific pocket mouse and several rare plants.

Convair Lagoon Remediation Project EIR, San Diego Port Authority. Principal biologist assessing impacts of hazardous waste remediation project on waterbird species using the lagoon.

National City Marine Terminal Wharf Expansion Project EIR, San Diego Port Authority. Principal biologist assessing impacts of wharf expansion project on mariner resources, including waterbird species.

Biological Resource Inventory and Environmental Assessment of Proposed Marina at Ballona Lagoon, Marina del Rey, California, Silver Strand Marina Association. Principal investigator for a comprehensive assessment of potential impacts to biological resources from a proposed marina at a 13-acre lagoon. Studies included documentation of California least tern and shorebird use of the lagoon.

Biological Assessment of the Ormond Beach Area Concept Plan, City of Oxnard. Principal investigator for an evaluation of proposed resource management and development plan for coastal dune and wetland habitats of Ormond Beach.

Biological Assessment of Elsinore Lake Management Plan, Lake Elsinore, California, Elsinore Water Authority. Project biologist that evaluated impacts to biological resources of Elsinore Lake from a proposed water-level control facility.

Poway Amphitheater EIR, City of Poway. Principal biologist assessing impacts of proposed amphitheater. Impacts to sensitive plants, California gnatcatcher and a regional wildlife corridor were key issues addressed in the EIR.

Habitat Restoration

Dr. Mock has produced habitat restoration plans and overseen the monitoring of plan implementation and maintenance for several projects, including Dana Point Headlands, San Elijo Hills, San Elijo Road, Twin Oaks Valley Road, Mira Sorrento Place, San Marcos Universal Boot, MCAS Miramar erosion control.

Other Relevant Experience

California Department of Fish and Game Biologist. Prepared bird and mammal sections of the Department's biannual report to the State Legislature on the status of California's endangered wildlife; Conducted surveys for wintering bald eagles and riparian birds.

Teaching

Principles of Ecology for Natural Resource Management, University of California, San Diego. Dr. Mock taught a course for three years on ecology that emphasizes the application of ecological knowledge toward solving problems in conservation biology and regional land use planning.

Wildlife Management, University of California, San Diego. Dr. Mock taught a course for three years on wildlife ecology/management that emphasizes techniques for conservation of wildlife population and their habitats.

Biological Assessment, University of San Diego. Dr. Mock taught a course on Biological Assessment that emphasized the requirements of CEQA, NEPA and ESA. Project case histories were used to provide students with real world examples of the types of environmental issues, which typically need to be addressed in a biological assessment.

Masters Thesis Committee Member, Geography Department, San Diego State University. Dr. Mock served as an adjunct member of a thesis committee of a biogeography graduate student, who evaluated the umbrella species concept as it applied to the conservation of the California gnatcatcher. Dr. Mock advised the student on habitat reserve design and population viability analysis.

Teaching Fellow, Biology Department, University of California, Los Angeles. Dr. Mock taught laboratory sessions for various biology courses while a graduate student. Courses included ornithology, comparative physiology, cell physiology, animal behavior, and introductory biology.

Technical Reviewer

Dr Mock provided peer review for manuscripts submitted to Conservation Biology, The Auk, Ecology, Condor, Ecological Monographs, Western Birds, *Ornis Scandinavica*,

- Proceedings of Symposium on Wildlife Habitat Restoration and Management
- Proceedings of a Symposium on Wildlife Habitat Restoration
- Proceedings of the Wildland Interface II Symposium
- Reviewer of Partners-in-Flight conservation plan for Southern California shrubland habitats
- Natural Communities Conservation Planning (NCCP) Core Group Reviewer of the Research Agenda
- Reviewer for selected sections and species accounts of *San Diego Bird Atlas*
- Reviewer of draft CDFG report on Bird Species of Special Concern

Professional Societies

Ecological Society of America
The Wildlife Society
Pacific Seabird Group, past Southern California Representative
Society for Conservation Biology
Association of Field Ornithologists
California Native Plant Society

Publications

At the Crossroads 1980: A report on California's endangered and rare fish and wildlife. California Department of Fish and Game report to the California Legislature. 1982. Dr. Mock contributed sections pertaining to endangered birds and mammals.

Christmas bird counts as indices of population status of brown pelicans and three gull species in Florida. American Birds 41: 1334-1339, 1987. R.W. Schreiber co-author.

Eastern brown pelicans: what does sixty years of banding tell us? Journal of Field Ornithology 59: 171-182, 1988. R.W. Schreiber co-author.

Energetics of growth and maturation in sympatric passerines that fledge at different ages. The Auk 108: 34-41, 1991. M. Khubesrian and D.M. Larcheveque co-authors.

Daily allocation of time and energy by adult western bluebirds feeding nestlings. Condor 93: 598-611, 1991.

Energetic constraints to the distribution and abundance of the California gnatcatcher. Western Birds 29:413-420.

California gnatcatcher territorial behavior. Western Birds 29:242-257. K. Preston, M. Grishaver, E. Bailey, and D. King co-authors.

California gnatcatcher vocalization behavior. Western Birds 29:258-268. K. Preston and M. Grishaver co-authors.

Dispersal capabilities of the coastal California gnatcatcher: a landscape analysis of distribution data. Western Birds 29:351-360. E. Bailey co-author.

Is the California gnatcatcher a good umbrella species for habitat reserve design? Western Birds 29:453-467. S. Fleury and J. O'Leary co-authors.

Breeding behavior of the California gnatcatcher in the vicinity of Rancho San Diego, California. Western Birds 299-322. M. Grishaver and K. Preston,

co-authors.

California Gnatcatcher – Dr. Mock contributed the species account in Partners-in-Flight conservation plan for Southern California shrubland habitats.

California Gnatcatcher – Dr. Mock contributed the species account in the *San Diego Bird Atlas*, authored by Phil Unitt in 2004.

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CURTIS UPTAIN
Senior Associate Wildlife Biologist

Mr. Uptain specializes in conducting biological resource inventories and studies in the southwestern United States. He has over 20 years experience working with federally- and state-listed endangered species and over 5 years of experience with restoration of arid lands. Mr. Uptain has been involved in a wide variety of projects that include housing developments, pipeline and transmission line corridors, cogeneration plants, solar and geothermal installations, mining and waste treatment facilities, and restoration and management of retired farmlands. Mr. Uptain has been responsible for documenting the results of research and surveys in numerous technical reports such as Environmental Assessments (EA's), Environmental Impact Reports (EIR's), Environmental Impact Statements (EIS's), Biological Opinions, Mitigation and Monitoring Plans, Habitat Management Plans, and Habitat Conservation Plans (HCP's).

Education
California State University, Fresno
B.A. in Biological Sciences - 1978
M.A. in Zoology - 1983

Certifications/Registrations
Certified Associate Wildlife Biologist by The Wildlife Society, 1983
Certified in Habitat Evaluation Procedures by the USFWS, 1986
Certified instructor – Human Impact Evaluation Procedures for the Mojave Ground Squirrel by the California Department of Fish and Game, 1992
NEPA certification, UC Davis, 1998
CEQA certification, UC Davis, 1999
Certified in fairy shrimp identification by the USFWS, 2001

Areas of Expertise
Endangered Species Surveys and Research
Environmental / Biological Documentation
State and Federal ESA Consultations
Restoration of Arid Lands

Professional Employment

2005 – Present	Senior Associate Wildlife Biologist, Quad Knopf
1997 – 2005	Assistant Director and Project Coordinator, California State University Stanislaus, Endangered Species Recovery Program
1983 – 1997	Sole proprietor and Lead Biologist, Consultants in Wildlife and Environmental Services Agency

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Endangered Species Research Projects

Endangered Species Recovery Program. Mr Uptain assisted in conducting a long-term demographic study of blunt-nosed leopard lizards at Pixley National Wildlife Refuge and on the Elkhorn Plains, CA.

Endangered Species Recovery Program. Mr Uptain assisted in conducting a long-term demographic study of giant kangaroo rats on the Elkhorn Plains, CA.

Endangered Species Recovery Program. Mr. Uptain assisted in conducting a long-term demographic study of Tipton kangaroo rats at Pixley National Wildlife Refuge, CA.

Endangered Species Recovery Program. Mr. Uptain coordinated trapping studies to determine the distribution and abundance of Tipton kangaroo rats on Kern National Wildlife Refuge, Kern County, CA.

Endangered Species Recovery Program. Mr. Uptain conducted a 6-year population monitoring study of the Doyen's dune weevil at the only known locality for this species and searched for additional populations. Kings County, CA.

United States Fish and Wildlife Service. Mr. Uptain conducted research and studies to determine the absolute and relative density of the blunt-nosed leopard lizard on six sites at the Pixley National Wildlife Refuge located in Tulare County, CA.

California Department of Fish and Game. Mr. Uptain researched and documented the distribution and relative abundance of the Stephens' kangaroo rat throughout its range.

Wetlands Projects

United States Bureau of Reclamation and The Foothill Conservancy Vernal Pool Surveys, Mr. Uptain was Project Coordinator for Vernal Pool Surveys on the 2,730 acre Blasingame Property, south of Friant in Fresno County, California. The surveys consisted of locating , mapping, and characterizing vernal pools, sampling pools for the presence of vernal pool branchiopods, California tiger salamanders, and spadefoot toads. Fresno County, CA.

United States Bureau of Reclamation Vernal Pool Surveys - Mr. Uptain was the Project Coordinator for the vernal pool surveys of the Friant Kern Canal. Surveys consisted of locating and mapping vernal pools and sampling pools for the presence of vernal pool branchiopods, California tiger salamanders, spadefoot toads, and other sensitive species located within the Canal right-of-way. Fresno, Madera, and Tulare counties, CA.

United States Bureau of Reclamation Annual Census'- Mr. Uptain was Project Coordinator for 5 years of annual census' of California red-legged frogs and monitoring of construction activities at San Justo Reservoir near Hollister, San Benito County, CA.

Endangered Species Recovery Program and the Smithsonian Instiution. Mr. Uptain coordinated trapping studies throughout the southern San Joaquin Valley to collect tissue samples of the endangered Buena Vista Lake shrew for a genetics analysis of the species.

Endangered Species Recovery Program and Ducks Unlimited. Mr. Uptain coordinated a trapping survey for Buena Vista Lake shrews at Goose Lake to determine impacts associated with wetlands enhancement on the site. Kern and Tulare counties, CA.

Restoration and Habitat Management Projects

Endangered Species Recovery Program, Land Retirement Demonstration Project. Mr. Uptain coordinated a five-year research project on wildlife use of retired and restored farmlands and the development of restoration technologies. Wildlife was monitored on 20, 10 acre plots that were subjected to various restoration prescriptions. Wildlife monitoring included invertebrates (annual pitfall and sweep surveys), amphibians and reptiles (transect surveys, pitfall trapping, coverboard surveys), birds (quarterly point counts and transect surveys), and small mammals (quarterly trapping). He also conducted quarterly night spotlighting and track station surveys and annual raptor census'. Selenium in plants and wildlife (invertebrates, small mammals) were monitored over the five-year period. Mr. Uptain also was responsible for coordinating the installation and management of a 4-acre native plant nursery which was used to amplify local stock of native plant seed, conduct research on native plant propagation and harvest techniques. He installed and managed the operation of a 1600 sq. ft. facility that was devoted to seed cleaning, processing, and storage. He coordinated data entry, statistical analysis, preparation of annual reports and a final five-year report for multiple research studies that were conducted to develop restoration techniques that could be applied to large scale restoration projects and presented findings at numerous professional conferences. Fresno and Tulare counties, CA.

California State Farmer's Fair Riverside County. Mr. Uptain assisted in a habitat restoration study for the Stephens' kangaroo rat on mitigation land for the Farmer's Fair in Riverside County, CA.

Endangered Species Recovery Program and the Department of the Navy. Mr. Uptain assisted with a habitat management (effects of fire and grazing) and demographic study for Tipton kangaroo rats at Lemoore Naval Air Station, Tulare County, CA. He prepared the final report for the study and made recommendations for appropriate land management.

California Department of Fish and Game, Region 4. Mr. Uptain coordinated field work and reviewed and edited text for Habitat Management Plans for the Buttonwillow Ecological Reserve

(Kern County), Big Table Mountain Ecological Reserve (Fresno County), and Hog Wallow Ecological Reserve (Tulare County).

California Department of Fish and Game, Region 4. Mr. Uptain coordinated, reviewed, and edited Land Acquisition Evaluations for three sites (Buena Vista Lake, Bena Landfill, and Comanche Point) and a Conceptual Area Plan for one site (?).

Habitat Conservation Planning Projects

Tulare County Habitat Conservation Plan. Mr. Uptain assembled information on sensitive species distribution and densities, developed a field survey protocol, and reviewed the conservation strategy for sensitive small- to medium-sized mammals.

California Department of Corrections North Kern Prison Site. Mr. Uptain was responsible for performing the initial surveys for sensitive biological resources on the North Kern Prison site at Delano, Kern County. Mr. Uptain was involved in developing/implementing the habitat conservation plan, a Tipton kangaroo rat relocation program, and a habitat restoration plan. He completed a five-year monitoring effort to determine the effects of habitat manipulations on Tipton kangaroo rat, blunt-nosed leopard lizard, and San Joaquin kit fox populations. Tulare County, CA.

San Joaquin Division of the California Aqueduct, Habitat Conservation Plan. Mr. Uptain compiled and analyzed field data collected by California Department of Water Resources and California Department of Fish and Game biologists and presented this data in the Habitat Conservation Plan for the San Joaquin Division of the California Aqueduct.

Fresno County, Pleasant Valley Habitat Conservation Plan. Mr.Uptain assisted with the preparation of the Pleasant Valley Habit Conservation Plan by organizing and conducting field investigations for sensitive species, analyzing field data, and preparing the biological portions.

Kern County Blackwells Corner Habitat Conservation Plan. Sensitive species surveys and a draft report was prepared by Mr. Uptain for a Habitat Conservation Plan for the water filtration system near Blackwells Corner, Kern County, CA.

Cogeneration, Hydroelectric, and Electrical Transmission Line Projects

La Paloma Generating Plant- As lead Biologist, Mr. Uptain conducted initial and focused surveys for sensitive plant and wildlife species for the La Paloma Cogeneration Plant and associated transmission lines and pipelines. He prepared the biological assessment and assisted with preparation of the environmental impact statement (EIS), application for certification to the California Energy Commission, California Department of Fish and Game 2081 Agreement, and the biological resources mitigation and implementation of the monitoring plan. He was the

coordinating biologist for the construction monitoring and employee training programs. Kern County, CA.

US Generating Company's Fellows Cogeneration. Mr.Uptain conducted field surveys, prepared progress reports, assisted in preparing an application for certification to the California Energy Commission. Mr. Uptain also supervised construction monitoring for the US Generating Company's Fellows Cogeneration which included a 17 acre power generation site, approximately 80 miles of transmission line, and associated water and natural gas pipelines in Kern County, CA.

South Belridge Cogeneration Project Application for Certification. Mr. Uptain performed habitat evaluations and density estimations of the San Joaquin antelope ground squirrel, and the Tipton kangaroo rat. He also performed relative density estimations and the distribution/abundance of the San Joaquin kit fox and their prey base, and the blunt-nosed leopard lizard that was needed for the application for certification for the California Energy Commission in Kern County, CA.

Haas-Kings Hydroelectric Project. Mr. Uptain assisted in a wintering deer survey and a recreation traffic survey for the Haas-Kings Hydroelectric Project in Fresno County, CA.

SCE Devers - Paloverde Transmission Line II. Mr. Uptain recovered sensitive biological species for mitigation and described the distribution of sensitive flora and fauna along the SCE Devers – Paloverde Transmission Line II in Riverside County, CA.

LADWP Sylmar Transmission Line. Mr. Uptain described the distribution of sensitive flora and fauna along the LADWP Sylmar Transmission Line in Kern, Inyo, and Mono counties, CA.

LADWP IPP 500 Kv Transmission Line. Mr. Uptain recovered sensitive biological species and monitored construction activities for mitigation of the LADWP IPP 500 Kv Transmission Line in Utah, Nevada and California.

SCE Victorville-Kramer Junction Transmission Line. Mr. Uptain determined the presence and abundance of the Mohave ground squirrels along the SCE Victorville-Kramer Junction transmission line in San Bernadino County, CA.

SCE Valley Substation-Serrano Transmission Line. Mr. Uptain determined the distribution of Stephens' kangaroo rat along the SCE Valley Substation-Serrano Transmission Line in Riverside County, CA.

LADWP McCollough-Victorville/Adelanto Transmission Line. Mr. Uptain performed habitat surveys and determined the distribution of sensitive flora and fauna along the LADWP McCollough-Victorville/Adelanto Transmission Line located in Riverside County, CA and Clark County, Nv.

Kings River Conservation District's Hydroelectric Development/Construction Projects. Collected baseline population data on fish in Dinky Creek and in Kings River, and monitored stream turbidity on Kings River below Pine Flat Dam in relation to hydroelectric development/construction projects in Fresno County, CA.

Gas, Oil, and Water Delivery System Projects

Mobil Oil Company, Kern and Monterey County, CA. Mr. Uptain was responsible for conducting field surveys that included a 30 mile long pipeline, 4 miles of oil delivery pipeline at their San Ardo facility in Monterey County, and preparing appropriate reports for project permitting through CDFG and USFWS. Mr. Uptain also performed construction monitoring/employee training for approximately 80 miles of oil pipeline in Kern County.

Unocal Platform Irene Project, Environmental Quality Assurance Program. Mr. Uptain performed biological monitoring for implementation of the Environmental Quality Assurance Program for the Unocal Platform Irene Project in Santa Barbara County, CA.

Mojave Pipeline, Tulare County, CA. Mr. Uptain performed verification trapping for Tipton kangaroo rats along the Mojave Pipeline northern expansion route in Tulare County, CA.

Mojave Pipeline Surveys for the Biological Opinion and Environmental Impact Report(EIR). Mr. Uptain was project manager for biological surveys for threatened and endangered species on approximately 400 miles of the Mojave Pipeline that were needed for the biological opinion report and the environmental impact report (EIR). Threatened and endangered species that were surveyed included the Mohave ground squirrel, desert tortoise, blunt-nosed leopard lizard, San Joaquin kit fox, San Joaquin antelope ground squirrel, giant kangaroo rat, Tehachapi slender salamander, and the Tipton kangaroo rat. Mr. Uptain then assisted with preparation of the project's reports and he prepared the RFP for protection of biological resources during construction.

Mobil Oil Company, Kern County, CA. Mr. Uptain performed surveys for sensitive species, and conducted construction monitoring for a proposed 17 mile long pipeline for Mobil Oil Company in Kern County, CA.

Elk Hills Naval Petroleum Preserve #2. Mr. Uptain conducted field surveys to determine the impact of various levels of oil and gas development on the blunt-nosed leopard lizard and the San Joaquin kit fox at Elk Hills Naval Petroleum Preserve #2 located in Kern County, CA.

California Aqueduct, Fresno, Kings and Kern Counties. Mr. Uptain performed surveys for sensitive species along the San Joaquin Field Division of the California Aqueduct to determine impacts from canal dredging operations and assisted with the preparation of the biological assessment.

Quad Knopf

Solar and Geothermal Projects

LUZ Solar Energy Facility, Kern County, CA. Mr. Uptain performed CHIEF surveys for Mohave ground squirrel habitat for the LUZ solar energy facility in Kern County, CA.

Harper Lake Solar Cogeneration Facility's Application for Certification. Mr. Uptain performed habitat evaluations and density estimates for the desert tortoise and Mohave ground squirrel that were to be included in the application for certification to the California Energy Commission. Kern County, CA.

Kramer Junction Solar Cogeneration Facility's Application for Certification. Mr. Uptain performed habitat evaluations and density estimates of the desert tortoise that were to be included in the application for certification to the California Energy Commission. Kern County, CA.

Solar Energy Production Facility, San Diego County, CA. Mr. Uptain determined factors influencing the distribution and abundance of Stephens' kangaroo rat in Warner Springs Valley in relation to the development of a solar energy production facility in San Diego County, CA.

Beowawe Geothermal Area. Mr. Uptain assisted in a small mammal inventory of five habitat types in the Beowawe Geothermal Area in Lander and Eureka counties located in North Central NV.

Mining Projects

Shumake Mine Expansion Project, Kern County, CA. Mr. Uptain was responsible for performing the habitat evaluation and relative abundance study of Mohave ground squirrels for the Shumake Mine expansion project in Kern County, CA.

Queenstake Mine project, Inyo County, CA. Mr. Uptain was responsible for performing the habitat evaluations and relative abundance study of Mohave ground squirrels for the proposed Queenstake Mine project located in Inyo County, CA.

Sonora Mining Corporation's Jamestown Goldmine, Tuolumne County, CA. Mr. Uptain performed quarterly sampling over a 5 year period for an aquatic and riparian survey of Woods Creek in relation to the Sonora Mining Corporation's Jamestown Goldmine, Tuolumne County, CA.

Urban Development Projects

Riverside County Surveys. Mr. Uptain performed 10 surveys ranging in size from 1 to 7300 acres, some including live trapping, for Stephens' kangaroo rats in Riverside County for various development projects.

Off-Road Vehicle Park Project in Kern County, CA. Mr. Uptain determined the relative abundance of desert tortoise in relation to a proposed off-road vehicle park that will be located in Kern County, CA.

Kern County Planning Department Zone Changes. Mr. Uptain was responsible for describing sensitive flora and fauna at North Edwards and Inyokern locations in Kern County, CA for use in evaluating zoning changes.

1280 Acre Housing Development at Rosamond, Kern County, CA. Mr. Uptain performed a biological survey for sensitive plants and wildlife at Rosamond for a proposed 1280 acre housing development located in Kern County, CA.

Business Park Surveys. Mr. Uptain surveyed for the presence of San Joaquin kit fox at a proposed business park near Tracy, CA.

Spice Processing Plant Surveys. Mr. Uptain surveyed for the presence of threatened and endangered wildlife at a proposed spice processing plant in Tulare County, CA.

Other Projects

Endangered Species Recovery Program and State Parks and Recreation. Mr. Uptain coordinated surveys for a vegetation mapping effort, sensitive plant surveys, and herpetological surveys of the Millerton Lake State Recreation Area, Fresno County, CA.

Endangered Species Recovery Program. Mr. Uptain assisted with extensive small mammal trapping on the Madera Ranch to determine presence of Fresno kangaroo rats for a proposed water banking project, Madera County, CA.

Endangered Species Recovery Program and California Department of Transportation. Mr Uptain coordinated field surveys, assisted with biological surveys, and prepared the final report for the Highway 165 Natural Environmental Study Report, Fresno and Mariposa counties, CA.

Endangered Species Recovery Program and California Department of Transportation. Mr Uptain coordinated field surveys, assisted with biological surveys, and prepared the final report for the Highway 41 Natural Environmental Study Report, Fresno County, CA.

Endangered Species Recovery Program and California Department of Transportation. Mr Uptain coordinated field surveys, assisted with surveys, and prepared reports for monitoring of

kit foxes and kit fox use of highway crossing structures along Highway 152, Merced County, CA.

Chemical Waste Management, Inc., Environmental Surveys. Mr. Uptain conducted various environmental surveys and conducted the mitigation procedures training for the Kettleman Hills Toxic Waste Facility. He also conducted a five-year monitoring study at their Bakersfield Facility.

Edwards Air Force Base Endangered Species Research. Mr. Uptain researched and studied the relative abundance of Mohave ground squirrels on Edwards Air Force Base in relation to impacts from a gravity wave detector.

Bakersfield Cellular Telephone Endangered Species Survey. Mr. Uptain performed a survey for the San Joaquin kit fox on cellular telephone tower sites located in Kern County, CA.

Harris Ranch Expansion Project Endangered Species Survey. Mr. Uptain conducted a San Joaquin kit fox survey and habitat assessment for the proposed Harris Ranch Expansion Project located in Fresno County, CA.

Propeace, Inc. Habitat Surveys. Mr. Uptain performed habitat surveys and assessed sensitive biological resources along I-15 and the IPP Transmission Line in relation to the Propeace Peace March.

Valley Nitrogen Producers, Inc. Biological Assessment. Mr. Uptain assessed the response of birds to an acoustical aversion system and bird mortality in a low pH evaporative waste pond located in Fresno County, CA.

J. Wayne Vogler

Biologist

Areas of Expertise

Wetland Delineations
Construction Monitoring
Flora/Fauna Surveys
Mapping Services
HAZWOPER Trained

Years of Experience

With URS: 1 Year
With Other Firms: 11 Years

Education

BS/Biological Sciences/1994/
University of California, Irvine

Registration/Certification

1997/U.S. Army Corp of Engineers Wetland Delineation Certification Program
1997/Lead Related Construction Supervisor (#S2112) and Project Monitor (#M2112), California Department of Health Services
1995/Asbestos Certified Site Surveillance Technician, #95-1831, California Department of Occupational Safety and Health

Chronology

06/06-present: URS Corporation, Santa Maria, CA
10/02-06/06: $(sd)^2$ ecology, Grover Beach, CA
06/95-09/02: LFR, Inc., Irvine and Santa Maria, CA

Contact Information

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Fax: 805. 739.1135
wayne_vogler@urscorp.com

Overview

Mr. Vogler is a biologist with a well balanced understanding of biological resources and project planning. Wayne has proved to be an asset in the planning of complex field efforts; developing strategies for performing surveys and collecting data while maintaining critical data acquisition targets. Wayne's project experience has included working with federal, state, and local agencies to find consensus among several parties, often with conflicting interests, toward the successful completion of the project. Wayne developed and instituted monitoring protocols, developed restoration plans, and monitored one of the largest hydrocarbon remediation projects along the U.S. Western Coast. Wayne has maintained compliance with Health and Safety training requirements, including some specialized training, since 1996; he is fully-versed and indoctrinated in the health and safety culture.

Project Specific Experience

Sensitive Species Survey Experience

California Red-legged Frog (*Rana aurora draytonii*)

- San Luis Obispo and Santa Barbara County – Conducted presence/absence surveys for California red-legged frogs and mapped habitats. 1999 through present.
- Chevron Guadalupe Restoration Project - Permitted to survey, capture, handle, and relocate California red-legged frogs. Includes pit-tagging and radio-tracking of individuals to monitor relocation efforts. Survey efforts for tadpoles, including dip-netting and use of minnow traps. 1999 through present.

Desert Tortoise (*Gopherus agassizii*)

- Mojave Desert – Completion of the Desert Tortoise Council Annual Surveying, Monitoring, and Handling Techniques Workshop. Training included survey techniques for individuals and their sign, assessment of habitat, handling techniques, and burrow construction. 2003.
- Mojave Desert – Habitat evaluation and presence surveys within several thousand acres for potential solar energy site, including several miles of transmission line corridors. Identified signs of desert tortoise habitation including locating live tortoises, scat, and former burrow sites. 2006.

Wetland Delineations and Restorations

- Performed the initial survey and subsequent update surveys to identify and delineate wetlands according to federal definitions at the 2,800-acre Guadalupe Restoration Project. Employed both routine and comprehensive survey methods with findings reviewed by ACOE and NRCS. 1997 and 2004.
- A contributing author and editor to an encompassing wetland restoration and mitigation plan at the Guadalupe Restoration Project.

Plan elements included the satisfaction of both federal and state resource agencies. Designed wetland habitat elements for the enhancement of both California red-legged frogs and La Graciosa thistle. Plan was approved by several federal and state resource agencies with accommodation by the U.S. Army Corp of Engineers describing the Plan as an example for future plans to ascribe toward. 2004 through 2006.

- Guadalupe-Nipomo Dunes – Conduct an identification survey of wetland habitats throughout the entire dunes complex. Developed identification and screening criteria, classification and descriptive identifiers, and survey methodology. Employed aerial photography interpretation for initial target identification. Mapped wetland habitats with sub-meter GPS unit for data to be incorporated into an existing GIS project. 2004 to present.
- Administrative Hearing with the Army Corp of Engineers for the Santa Maria Airport District. Presented to Hearing Officer in support of District's opinion that wetlands unfairly identified by ACOE personnel. Hearing resulted in no action taken by ACOE against District.

General Vegetation Surveys, Wildlife Surveys, and Habitat Assessment

- Conducted regimented surveys and mapping efforts for La Graciosa thistle (*Cirsium loncholepsis*), surf thistle (*Cirsium rhothopilum*), and beach spectacle-pod (*Dithyrea maritima*). Initial survey and mapping of presence. Annual censusing of populations. Monitoring of construction activities to ensure avoidance of disturbance to individuals and habitat. Summer 1998 to present.
- Habitat Inventory and Ecological Database (HIED) development for the 2,800-acre Guadalupe Restoration Project. Scope included the initial mapping of sensitive flora, sensitive fauna, weed infestation, habitat quality, and several other parameters. Data developed from aerial photograph interpretation, qualitative and quantitative surveys, and specific presence/absence surveys per species. Updated annually. 2002 to present.

Specialized Training

- Annually/8-Hour HAZWOPER Annual Refresher
- 2006/Loss Prevention System Training, a Behavior Based Safety Program
- 2006/Smith System Advanced Driving Traffic Safety
- 2003/PADI Certified Open Water Diver
- 2001/Stormwater Pollution Prevention on Construction Sites, California State Water Resources Control Board
- 1999/Certified Beer Master, Anheuser-Busch, Inc.
- 1996/40-Hour Hazardous Waste Workers' and 24-Hour First Responder Health and Safety Training

Timothy R. Witman

Ecologist

Areas of Expertise

Wetland Delineations
Erosion and Sediment Control
Construction Monitoring

Years of Experience

With URS: Less than 1 Year
With Other Firms: 3 Years

Education

BS/2003/Environmental Studies/Geology
St. Lawrence University

Registration/Certification

2007/Certified Professional in Erosion and Sediment Control

Overview

Mr. Witman serves as an Ecologist for the URS Salt Lake City Office. His work experience includes wetland delineations, overview and compliance of construction activities, and federal and state permitting. He is experienced with federal agencies such as U.S. Army Corps of Engineers (ACOE), and the EPA National Pollutant Discharge Elimination System (NPDES) permitting program. Mr. Witman has applied these skills to a wide range of projects including, residential and commercial developments, transportation projects and utility projects.

Mr. Witman has prior experience conducting wetland delineations and permitting under the Massachusetts Wetlands Protection Act and local regulations. He routinely works with Global Positioning System (GPS) data collection units, and is familiar with GPS associated software such as Pathfinder Office©. Mr. Witman also incorporates GPS data into AutoCAD© in order to create plans and maps.

Project Specific Experience

Temple Mountain Energy/Ames Construction, Vernal, Utah: Mr. Witman assisted with conducting a baseline ecology survey at the Asphalt Ridge #1 tar sands mine site. The baseline survey included vegetation transects, wildlife survey, a review for threatened and endangered species, soil sampling and a delineation of waters of the United States. Upon the completion of field work he prepared a baseline report for submittal to UDOGM in order to complete a NOI filing and to compile a post-mining reclamation plan.

William Gas Pipeline, La Plata County Colorado: Mr. Witman assisted with completing and submitting Jurisdictional Determination forms to the United States Army Corps of Engineers for the maintenance and repair of a gas pipeline. These forms were based on the Corps Arid West Supplement and were used to determine the jurisdiction of streams and wetlands impacted by the project. He took existing field data, interpreted aerial photos and topographic maps in order to determine if the sites along the pipeline would or would not be jurisdictional. The work resulted in the Corps issuing a Nationwide Permit 12 for this pipeline project.

National Grid/Massachusetts Electric Company, Salem, Massachusetts: Mr. Witman performed coastal wetland resource area delineation and conducted research for existing Massachusetts Chapter 91 Licenses and plans. He assisted with the preparation of the Massachusetts Chapter 91 License Application and Notice of Intent as well as the Army Corps of Engineer Section 10 and Section 404 permit applications for the implementation of insitu bio-remediation projects within the coastal beach, tidelands and waters of Collins Cove, Salem.

Weymouth Naval Air Station, Weymouth, Massachusetts: The Phase I redevelopment project was the first phase for the construction of a mix use development project at the former Weymouth Naval Air Station. Mr. Witman was responsible for conducting wetland resource area delineation and reviewing previously delineated wetland areas within the site. In addition, he prepared wetland permits and documentation which included the Notice of Intent, Invasive Species Control Plan, and Wetland Replication Monitoring Plan.

National Grid, A53 & B54 Refurbishment Project Worcester, Massachusetts: Mr. Witman was the task lead responsible for organizing wetland delineation teams and conducting the delineation along a 10 mile stretch of electrical transmission line. He collected and managed GPS data in order to prepare and modify National Grid Plans. Mr. Witman prepared the Watershed Determination of Applicability Permit Application and coordinated with state agencies for approval. He also coordinated with National Grid Engineers and contractors to assist with the preparation of construction documents.

NEEWS, Transmission Line Reinforcement Project, Massachusetts to Rhode Island: Mr. Witman was responsible for leading and coordinating vernal pool and wetland delineation teams along a 17 mile section of electrical transmission right of way. Mr. Witman prepared background information packages of the route including aerial photos, topographic maps, wetland maps, soil maps, and Natural Heritage and Endangered Species maps. He managed and organized GPS data, wetland datasheets, wetland summary forms, and photographs for future preparation of permit applications.

Olin Chemical, Wilmington, Massachusetts: This is a contaminated site with ongoing remediation activities. Mr. Witman would visit the site each month to visually monitor changes in runoff, stream flow and water quality from the site to bordering vegetated wetlands. Weekly reports, prepared by Olin, were reviewed and Mr. Witman prepared a monthly letter report to the state and EPA. Mr. Witman also prepared a vegetation analysis report within the wetland mitigation areas and assisted with the preparation of a watershed analysis. This analysis proved under the Massachusetts Wetlands Protection Act that the stream was not a perennial stream.

Central Artery/Tunnel Project, Boston, MA: Mr. Witman was responsible for preparation of permit packages in order to receive Certificates of Compliance for Orders of Conditions from the Cities of Boston, Cambridge, and Revere; and Waterways Licenses from the Department of Environmental Protection. Additional responsibilities included providing permit support to the South Boston and East Boston permit manager and acquiring street numbers from the City for new structures.

Coastal Zone Management Statewide Chapter 91 Jurisdictional Mapping Project, Massachusetts: The project goal was to map the historical shoreline of Massachusetts in order to create a presumptive historic shoreline as it relates to Chapter 91 jurisdiction in Massachusetts. Mr. Witman organized and conducted research in local municipal offices, libraries, The State House, state agencies and various private repositories. Relevant historical materials were obtained and digitized.

Route 3 Roadway Widening & Culvert Extension, Burlington, Massachusetts: Mr. Witman was responsible for construction monitoring and oversight of the wetland mitigation while work occurred within and adjacent to wetland resource areas. Violations to the Order of Conditions by the contractor, prior to Mr. Witman's involvement, nearly resulted in an Enforcement Order. Mr. Witman provided mitigation measures and weekly reports to the local agency in order to allow the work to continue.

Preparation of EPA NPDES SWPPPs for Multiple Development Projects, Massachusetts: Mr. Witman has prepared numerous Notice of Intents and Storm Water Pollution Prevention Plans for a variety commercial and residential construction projects. This work included coordinating with engineers to prepare Erosion and Sediment Control Plans and conducting weekly site inspections to ensure that the contractors are adhering to the plan or to modify the plan if necessary.

Professional Societies/Affiliates

Society of Wetland Scientists

Training

U.S. Army Corps of Engineers Arid West Supplement, Wetland Training Institute, Boise, ID

OSHA 10-Hour Construction Safety

U.S. Army Corps of Engineers Wetland Delineator 40-Hour Course, University of New Hampshire, Durham, New Hampshire

Wetlands Ecology, University of Massachusetts Lowell, Massachusetts

U.S. Army Corps of Engineers Highway Methodology, New Hampshire

Delineating Hydric Soils in Human Disturbed Sites, University of New Hampshire, Durham, New Hampshire

Chronology

08/2007 – Present: URS Corporation, Salt Lake City, Utah

10/2003 – 6/2007: Environmental Planner, BSC Group Inc., Boston, Massachusetts

Summary of Experience

Mr. Bissonnette has more than 8 years of combined experience in the biological and geotechnical consulting industry. He has led teams in the survey of rare and endangered plants. He has assessed sites for natural resources, and conducted protocol surveys for state and federally listed species. He has conducted wetland delineations, and consulted on Army Corp of Engineers 404 Clean Water permits, both Individual and Nation-Wide. He has applied for and consulted on California Department of Fish and Game Lake and Streambed Alteration Agreements.

Mr. Bissonnette has experience working with Geographic Information Systems (GIS), and has experience using Global Positioning Systems (GPS). He has used GIS on projects to help evaluate potential impacts, research location information, analyze relationships of location resources, and produce products for reports such as maps, charts, and tables.

Mr. Bissonnette's project experience includes federal, state, transportation, residential, commercial, and private projects.

Education

Bachelors of Science: Biology with an emphasis in Botany, Humboldt State University, 2003

Minor Degree: Native American Studies, Humboldt State University, 2003

Registrations / Continuing Education

Member of the California Native Plant Society (CNPS)

Trained in the Mapping and Identification of California Vegetation, CNPS 2006

Trained in Plant Taxonomy and Identification of Vernal Pool Plant species, 2007

Registrations / Continuing Education (continued)

Trained in CNPS / CDFG Protocols for Botanic Surveys, 2007

Trained in the identification of *Eriogonum species*, Jepson Herbarium, 2007

Course work in ESA Regulation and Protection, U.C. Davis Extension, 2007

Trained Wetland Delineator, Wetland Training Institute, 2005

Trained in the Handling of Desert Tortoise, Desert Tortoise Council, 2007

Trained in the identification of "Fairy Shrimp" and "Tadpole shrimp", 2006

Trained in the identification of California Tiger Salamander and their larvae, 2005

HAZWOPER, 24 and 16 hour training, ABAG (Association of Bay Area Governments), 2005: 8 hour Refresher Courses in 2006, and 2007.

Select Project Experience

The following is a representative selection of Mr. Bissonnette's project experience.

Van Tol Dairy Development, Glenn County California - 2007-2008

Mr. Bissonnette conducted a reconnaissance level habitat assessment of an approximately 315-acre parcel for the development of a dairy facility and supporting agricultural lands. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and habitat suitability for use by state and / or federally listed special status species. Mr. Bissonnette authored the report and managed the project.

Gross Property Assessment, Johnson Valley, San Bernardino County California – 2007

Mr. Bissonnette conducted a reconnaissance level habitat assessment and reconnaissance level survey for desert tortoise for an approximately 10-acre parcel in the unincorporated town of Johnson Valley. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants. The assessment emphasized habitat suitability for use by state and / or federally listed special status species, specifically desert tortoise. Mr. Bissonnette authored the report and managed the project.

Hay Ranch-Coso Operating Company, Little Lake (Gill Station), California – 2007

Mr. Bissonnette helped conduct a wetland delineation of an approximately eight and half mile proposed water pipeline easement. Coso Operating Company proposed to install a linear water pipeline extending from inside the China Lake, Naval Weapons Base east to a site formally known as the Hay Ranch. Mr. Bissonnette helped conduct an assessment of the easement for potential jurisdictional features. The easement was assessed for potential jurisdictional wetland features as defined by the USACE. The easement was secondarily assessed for potential impacts to natural resources. Mr. Bissonnette co-authored authored the wetland assessment report and helped perform consultation with State and Federal agencies.

Quay Valley Environmental Impact Report, Kings County California – 2007

Mr. Bissonnette helped to evaluate and author the biological sections of an Environmental Impact Report for the proposed development of an “environmentally green” planned city development project.

Clovis Avenue and Herndon Avenue Commercial Retail Development Project, Clovis, California – 2007

Mr. Bissonnette conducted mitigated pre-construction surveys for western burrowing owls and conducted consultations with FWS regarding observed vernal pool fairy shrimp. Paytner Realty and Investments, Incorporated were required to provide pre-construction surveys for western burrowing owls as an EIR mitigation requirement prior to ground disturbing activities within the project site boundaries. The project was also required to consult with the FWS regarding fairy shrimp species observed on the project site. Mr. Bissonnette implemented the requested procedures set forth by the FWS and CDFG prior to ground disturbance activities.

Westside Parkway Freeway Alignment, Bakersfield, California – 2007

Mr. Bissonnette conducted a reconnaissance level habitat assessment and pre-construction survey for the presence of San Joaquin kit fox at the request of the Bureau of Reclamation. The assessment helped to provide application information for exploratory geo-technical drilling along an irrigation canal embankment within the Bureau of Reclamations jurisdiction. Mr. Bissonnette conducted these surveys to help assess the potential for impacts to kit fox and kit fox habitat. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and the potential for kit fox to occur at the site. Mr. Bissonnette also characterized and assessed the project area for natural resources with focus on identification of observed habitat, wildlife presence, and identification, and preliminary assessment of the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette authored the assessment report.

North Coast Railroad Authority, Northern California – 2007

Mr. Bissonnette conducted reconnaissance level habitat assessment surveys of the railroad right-a-way easement and adjacent properties for the California Department of

Transportation and the North Coast Railroad Authority. Mr. Bissonnette conducted these surveys to help assess the potential for impacts to the natural resources along the railroad easement between the towns of Cloverdale and Hopland, and between the towns of American Canyon and Novato, and along a section of easement near the town of Calpella, California. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands that may be affected by the project. Mr. Bissonnette characterized and assessed the project area for natural resources with focus on identification of observed plants, wildlife presence, and identification, and preliminary assessment of the habitat's suitability for use by state and / or federally listed special status species.

Red Apple Ranch Development, Calaveras County, California – 2007

Mr. Bissonnette conducted FWS protocol level day and night surveys for California Red-Legged frog. Mr. Bissonnette performed sight and auditory surveys of red-legged frogs at an approximately 139-acre site located near the town of Murphy's in the county of Calaveras.

DSL Service Company-Lowe's HIW project, Rancho Cordova, California – 2007

Mr. Bissonnette assisted DSL Services Company with the remedial assessment of a parcel in the city Rancho Cordova in response to a United States Fish and Wildlife issue and United States Army Corps of Engineers request for assessment of a previously impacted and rough graded site. Mr. Bissonnette conducted a biological assessment and performed a wetland delineation for an approximately 17 acre site where Lowe's Home Improvement Warehouse was in the processes of developing a new retail warehouse and supporting infrastructure. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands within the site. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing

the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette also helped to conduct a wetland delineation of the site to assess for potential jurisdictional wetland features as defined by the USACE. Mr. Bissonnette has authored the assessment report and helped perform consultation with State and Federal agencies on behalf of the client.

Costco Retail Warehouse, California – 2007

Mr. Bissonnette has performed habitat risk assessments, pre-construction raptor and migratory bird surveys, and wetland assessments for sites in Manteca, Chico, and Visalia California. Mr. Bissonnette characterized and assessed the project sites for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette also assessed the site for wetlands and or indications of wetlands as defined by the Army Corps of Engineers. Mr. Bissonnette authored the assessment reports.

Department of General Services – Sierra Conservation Center, Jamestown, California – 2007

Mr. Bissonnette consulted on biological and botanical resources for the replacement of a water line for the California Department of Corrections inmate facility located in Jamestown. Mr. Bissonnette conducted field assessments and reported on potential impacts to resources with respect to state and federal regulations. Mr. Bissonnette has authored the assessment report and helped to perform consultation with state and federal agencies on behalf of the client.

JCPenney's Incorporated, Manteca, California – 2007

Mr. Bissonnette conducted biological and wetland assessments for the JCPenney's corporation. Mr. Bissonnette conducted reconnaissance surveys to assess potential

impacts to the natural resources on a proposed development site. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands within the site. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette also assessed the site for wetlands and or indications of wetlands as defined by the Army Corps of Engineers. Mr. Bissonnette authored the assessment report and performed consultation with State and Federal agencies on behalf of the client.

Darco Group - Avenue 12 Housing Development, Madera, California - 2006.

Mr. Bissonnette assisted the Darco Group, Inc. in the assessment of approximately 210-acres for a proposed high-density housing development project in the city of Madera, California. Mr. Bissonnette conducted a biological assessment of the proposed project site. Mr. Bissonnette assessed and characterized habitat, vegetation structures, and potential wetlands within the site. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette has authored the assessment report and is currently helping to perform consultation with State and Federal agencies on behalf of the client.

Department of Fish and Game, California - 2006

Mr. Bissonnette conducted biological and environmental assessments of two separate communications towers and equipment vault locations near the towns of Oakhurst and Columbia in the western Sierra Nevada mountains. Mr. Bissonnette assessed approximately 40-acres, of remote ridge top land at each location, for the presence of natural resources, wildlife, vegetation, and habitat suitability for use by state and / or

federally listed special status species. Mr. Bissonnette also assessed existing communications equipment vaults for potential environmental concerns that may exist or may occur during the demolition or remodel of existing facilities or which may occur during the construction of new facilities. Mr. Bissonnette helped to author individual sections of a site assessment questionnaire used by the Department of General Services to evaluate State funded projects.

Rockville Hills Park, Fairfield, California - 2006

Mr. Bissonnette conducted a secondary biological reconnaissance assessment of approximately three acres of the northwest portion of the Rockville Hills regional park, where a proposed redevelopment of an existing parking facility is located. Mr. Bissonnette visited the site to assess the reported vegetation classifications and structures, and also to assess the reported habitat types and conduct a reconnaissance level investigation for natural resources in the reported habitat types. These investigations focused on wildlife presence, identification of plants observed, and assessing the habitat's suitability for use by listed species. Mr. Bissonnette helped in the identification of on site wetlands as outlined by the U.S. Army Corps of Engineers 1987 wetlands manual.

Parriera Dairy project, Hanford, California - 2006

Mr. Bissonnette authored the report for this project. Mr. Bissonnette reviewed and analyzed field data collected by another biologist who conducted a biological assessment of an approximately 120-acre dairy facility and supporting agricultural lands. Mr. Bissonnette assessed reported characterized habitat, vegetation structures, and potential wetlands. Mr. Bissonnette authored the report and managed the report production under the supervision of a senior project manager.

Mattos and Sons Dairy project, Hanford, California - 2006

Mr. Bissonnette conducted a biological assessment of an approximately 800-acre dairy facility and supporting agricultural lands. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette authored the report and managed the project.

Mattos Brothers Dairy project, Hanford, California - 2006

Mr. Bissonnette conducted a biological assessment of an approximately 900-acre dairy facility and supporting agricultural lands. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette authored the report and managed the project.

Four-Star Dairy project, Hanford, California - 2006

Mr. Bissonnette along with one other biologist conducted a biological assessment of an approximately 720-acre dairy facility and supporting agricultural lands. Mr. Bissonnette assessed and / or characterized habitat, vegetation structures, and potential wetlands. Mr. Bissonnette characterized and assessed the project site for natural resources with focus on wildlife presence and identification, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed special status species. Mr. Bissonnette authored the report and managed the project.

Ferguson project, Rough and Ready Island, Port of Stockton, California - 2006

Mr. Bissonnette conducted a biological assessment and wetland delineation to be used in the planning and permitting process for the development of an approximately 100 acre site. Mr. Bissonnette characterized the site's habitat and conducted a reconnaissance level investigation for natural resources. These investigations focused on observable wildlife presence, identification of observed plants, and assessing the habitat's suitability for use by state and / or federally listed species. Mr. Bissonnette helped in the identification and delineation of on site wetlands as outlined by the U.S. Army Corps of Engineers 1987 wetlands manual.

Terminal Project, North Edwards, California - 2006

Mr. Bissonnette conducted a biological assessment to be used in the planning and permitting process for a unique project combining art and natural history with the burial of the fuselage of a jet airplane. The project site consisted of an approximately 10-acre parcel of desert land. Mr. Bissonnette analyzed the site by dividing it into habitat types and conducting a reconnaissance level investigation for natural resources in each habitat type. These investigations focused on wildlife presence, identification of plants observed, and assessing the habitat's suitability for use by listed species.

Mr. Bissonnette conducted a protocol survey for desert tortoise (*Gopherus agassizzii*), as well as a preliminary survey for the threatened species of the Mojave ground squirrel (*Spermophilus mohavensis*). A number of desert tortoises were observed, which included both genders and juvenile tortoises. Mr. Bissonnette authored the report and managed the project.

Preservation Ranch, Sonoma County, California – 2005-2006-2007

Mr. Bissonnette has assisted PPV LLC, in the assessment, permitting, and development of an exceptionally comprehensive project that involves environmental services related to an approximately 22,000-acre site for the proposed development of vineyards,

conservation lands, timber production, housing, and parcel re-development. The project is comprised of 18 tasks. The services Mr. Bissonnette was involved with include, but are not limited to, regulatory agency interaction, biological support services, biological monitoring, biological assessments, biological surveys, and on-site watershed, stream and wetlands assessments with water quality monitoring.

Mr. Bissonnette led tasks in the evaluation of botanical species as they relate to federal and state regulations. Mr. Bissonnette managed small teams in the gathering, review, and presentation of data of the botanical species within the site.

Mr. Bissonnette participated in the biological assessment of proposed vineyard sites, for the development of a site EIR document. As part of the biological assessments he led field teams in the observations of biologically significant resources, use of GPS, and collection of field data. Mr. Bissonnette participated in the task of the evaluation of road-stream crossings as their relevance pertains to the California Department of Fish and Game Code 1602 and section 404 of the Clean Water Act. Mr. Bissonnette helped to develop the survey protocols and forms to capture and represent conditions at each crossing for a Streambed Alteration Agreement and agency review. He has coordinated a small team in the gathering, review, and presentation of data for the first two phases of the project, consisting of approximately 300 crossings. He coordinated these efforts with the California Department of Fish and Game. He used GPS mapping and GIS analysis in support of data that will be implemented in permitting agreements. He also assisted in the preparation of the 404 individual permit applications, and coordination with USACE.

Armona sub-division Development, Kings County, California – 2006.

Mr. Bissonnette expedited biological services for Mr. Jerry Irons and Mr. Barry Notolli for the proposed sub-division and development of an approximately 40-acre parcel in the city of Armona, California. Mr. Bissonnette conducted an integrated protocol survey

methodologies for raptors at the project site and with in a half mile radius of the site. Mr. Bissonnette authored the report and managed the project.

Red Apple Ranch Development, Calaveras County, California – 2005-2006.

Mr. Bissonnette assisted in a secondary evaluation of wetland features of a 139-acre site in the Sierra foothills, using GPS mapping and GIS to integrate delineation data with construction plans. Mr. Bissonnette conducted field evaluations of natural resources on the site. He prepared permits for Clean Water Act Sections 401 and 404, as well as California Department of Fish and Game Code 1602. Mr. Bissonnette evaluated the project's impacts for use within a Nation Wide Permit (NWP 39).

Sommerfeld Ranch, Stanislaus County, California – 2005.

Mr. Bissonnette expedited biological services for Frances Sommerfeld in the sub-division of an existing approximately 130-acre parcel of organic agricultural land. Mr. Bissonnette conducted a biological assessment of the site. He conducted a general botanical survey, and authored the report. He also conducted a general avian survey and an initial assessment for California tiger salamanders (*Ambystoma californiense)*.

Vista Plaza Development, Valley Springs, California - 2005.

Mr. Bissonnette assisted in conducting a wetland delineation and permitting review of the Clean Water Act Sections 401 and 404, as well as California Department of Fish and Game Code 1602. He integrated GPS mapping and GIS to help evaluate delineation data.

Geotechnical experience – 1989-1992; 2003-2005.

Mr. Bissonnette has previous experience with materials testing, and on site field management of mass and minor grading projects. He has managed and consulted on road construction, home development, and commercial development projects, and has developed extensive client relations experience.

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