

APPENDIX 8

Victorville 2 Hybrid Power Project

QUALIFICATIONS OF INDIVIDUALS CONDUCTING STUDIES



Michael D. Wilcox

Wildlife Biologist / Ecologist

Professional Summary

Mr. Wilcox has over 13 years of professional biological consulting experience throughout California and the Southwest. During that time, Mr. Wilcox has conducted biological and environmental assessment work throughout Imperial, Inyo, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, and Ventura counties in California, as well as in the states of Arizona and Nevada. In addition to professional work experience, Mr. Wilcox has maintained a life-long personal interest in biology and ecology which has resulted in observations and studies of wildlife and ecology in Arizona, Florida, Louisiana, Kansas, Montana, New Mexico, Virginia, Wyoming, the Yucatan (Mexico), Baja California, Belize, Guatemala, Costa Rica, Peru and Bolivia. Professional experience includes serving as the lead biologist, supervising and managing biological compliance monitoring and sensitive species survey efforts for a variety of large-scale projects, as well as conducting focused surveys and monitoring of a variety of endangered, threatened, and/or otherwise sensitive species, conducting USACOE Section 404 wetlands/waters of the U.S. delineations and determinations, CDFG 1601-3 stream and riparian habitat assessments and jurisdictional determinations, environmental and biological assessments, habitat conservation plans, habitat suitability evaluations for sensitive species, mitigation and revegetation plans, and comprehensive field inventories of flora and fauna for use in EIR and EIS documents for federal, state, and local jurisdiction agency CEQA and NEPA environmental review.

Mr. Wilcox has been authorized by the U.S. Fish and Wildlife Service to perform focused surveys for the federally endangered Delhi Sands Flower-loving Fly, Quino Checkerspot Butterfly, and threatened California Gnatcatcher. Mr. Wilcox has also been authorized to assist other permitted biologists with focused surveys for the Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, and Mojave Ground Squirrel. He has also received both federal and state agency authorization for specific projects to capture, handle, process, and relocate the Desert Tortoise; and to capture, handle, and release the Mountain Yellow-legged Frog, Panamint Alligator Lizard, and sensitive salamander species. Mr. Wilcox has also received Bureau of Land Management certification for conducting focused surveys for the Flat-tailed Horned Lizard.

Other protected species Mr. Wilcox has worked with include the Arroyo Toad, California Red-legged Frog, Coachella Valley Fringe-toed Lizard, Gila Monster, San Diego Coast Horned Lizard, Belding's Orange-throated Whiptail, Southwestern Pond Turtle, Two-striped Garter Snake, Southern Rubber Boa, Least Bell's Vireo, hibernating bat species, and various sensitive plant species.

Mr. Wilcox also works part-time as an adjunct biology instructor at Victor Valley Community College, teaching Biology 128: "Identification and Study of the Amphibians and Reptiles of the Mojave Desert and Adjacent Mountains" and has served as an assistant instructor for "Jungles and Peaks: Ecology of Belize and Guatemala" and "Natural History of Peru" travel courses. He has also served as a field instructor and technical advisor for several symposia and workshops including the Desert Tortoise Council Survey Techniques Workshop and the Riverside Land Conservancy's Land Stewards School. Additionally, Mr. Wilcox has also participated in the annual U.S. Forest Service Lake Silverwood Winter Bald Eagle

Michael D. Wilcox

Census and several annual Fourth of July San Bernardino Mountains Butterfly Counts sponsored by the North American Butterfly Association.

Professional Qualifications

United States Fish and Wildlife Service Endangered Species Permit (PRT-836491-4) to take the Delhi Sands Flower-loving Fly and Quino Checkerspot Butterfly.

Bureau of Land Management certified Flat-tailed Horned Lizard surveyor # 6840 (CA-067.20).

California Department of Fish and Game Memorandum of Understanding (MOU) authorizing take of the Desert Tortoise (Permitted to capture, handle, and relocate Desert Tortoises for the Southern California Gas Company Kramer Line 6905 Project).

Lead Biologist for California Department of Fish and Game 2081 Incidental Take Permit No. 2081-2001-008-6 authorising incidental take of the Desert Tortoise, Mojave Ground Squirrel, and Burrowing Owl for the Southern California Gas Company Kramer Line 6905 Project.

California Department of Fish and Game Memorandum of Understanding (MOU) authorizing take of the Mountain Yellow-legged Frog (Permitted to capture, handle, and release tadpoles, juvenile, and adult frogs for identification purposes).

California Department of Fish and Game Scientific Collectors Permit # 801024-03, amended to allow the capture of the Panamint Alligator Lizard and salamander species in Pleasant Canyon, Panamint Mountains, CA.

Authorized Individual for various Desert Tortoise studies (Authorized to monitor, handle, process and relocate Desert Tortoises when necessary for specific project implementation).

Authorized Individual for United States Fish and Wildlife Service Endangered Species Permit (TE-804203-5) to conduct activities with the California Gnatcatcher, Southwestern Willow Flycatcher, Stephens' Kangaroo Rat, and San Bernardino Kangaroo Rat (Permitted to conduct focused gnatcatcher and flycatcher surveys, and assist with trapping, handling, and processing for the kangaroo rats under the direct, on-site supervision of Stephen J. Myers).

Authorized Individual for United States Fish and Wildlife Service Endangered Species Permit (PRT-836517-4) to assist with focused surveys of the California Gnatcatcher (Permitted to conduct focused gnatcatcher surveys under the direct, on-site supervision of Chet McGaugh).

Authorized Individual for California Department of Fish and Game Memorandum of Understanding dated April 30, 1997 regarding studies of the Mojave Ground Squirrel (Authorized to trap, handle, and process trapped squirrels).

Authorized Individual for California Department of Fish and Game Memorandum of Understanding dated July 29, 1998 regarding studies of Stephens' Kangaroo Rat and San Bernardino Kangaroo Rat (Authorized to assist permitted biologist, Stephen J. Myers, with trapping, handling, and processing of trapped specimens).

Education

Bachelor of Arts, University of Redlands, Redlands, 1991

University of California, Riverside, 1994-1995

Relevant extension course work included: Methods of Habitat Restoration and Ornithology: A Field Study of Birds.

Michael D. Wilcox

Crafton Hills College, Yucaipa, 1996
Course work included: Psychology.

San Bernardino Valley College, San Bernardino, 1996
Course work included: Child Development

Victor Valley Community College, Victorville, 2000-Present
Course work included: 1) Jungles & Peaks; A Study of the Ecology of Costa Rica (2000), 2) Belize and Guatemala (2003)*, and 3) Natural History of Peru (2006)*. *Served as assistant instructor.

Additional training

Mojave Ground Squirrel Workshop. 4/16-17; Ridgecrest, CA.

Biology of the Rattlesnakes Symposium. 1/15-18/05; Loma Linda University, Loma Linda, CA

28th annual Southern California Botanists Symposium: Rare Plants of Southern California. 10/19/02
California State University, Fullerton, CA

27th Annual Western Field Ornithologists Conference. 10/12/02; Costa Mesa, CA

3rd North American Ornithological Conference. 9/24-28/02; Tulane University, New Orleans, LA

South Coast Missing Linkages Projects: Restoring Connectivity to California's South Coast Ecoregion.
8/07/02; University of Redlands, Redlands, CA

27th Annual Southern California Botanists Symposium: Shifting Sands - Conservation and Biology of California's Dune Habitats. 10/20/01; California State University, Fullerton, CA

Wetland Delineation & Management Training Seminar & Workshop. 2/5-10/01; San Diego, CA

Arroyo Toad Symposium (*Bufo californicus*): Natural History and Management Practices. 10/5/00; Marine Corps Air Station, Camp Pendleton, CA

Planning for Biodiversity: Bringing Research and Management Together. 2/29-3/2/00; Pomona, CA

Workshop on Year 2000 Draft Quino Checkerspot Butterfly Survey Protocol. 11/30/99; Carlsbad, CA

Current Research on Herpetofauna of the Sonoran Desert. 4/9-10/99; Phoenix Zoo, Phoenix, AZ

Status and Biology of the Quino Checkerspot Butterfly. 12/3/98; Carlsbad, CA

Herpetology of the Californias: First Annual Symposia in honor of Lawrence Klauber. 5/15/98; San Diego Natural History Museum, San Diego, CA

Desert Tortoise Council Symposium. 3/94-95,4/98; Las Vegas, Nevada and Tucson, AZ

Declining Amphibians and Reptiles in California II. 3/13/98; San Diego Natural History Museum, San Diego, CA

Quino Checkerspot Butterfly Seminar. 1/6/98; Temecula, CA

The Quino Checkerspot/Butterfly Identification Workshop. 11/15/97; Riverside Land Conservancy, Riverside, CA

Declining Amphibians and Reptiles in California. 3/14/97; San Diego Natural History Museum, San Diego, CA

Empidonax trailii extimus in California: The Willow Flycatcher Workshop. 11/95; San Diego, CA

Desert Lands Rehabilitation Workshop. 11/95; Barstow, CA

Michael D. Wilcox

Desert Tortoise Council Techniques Workshop. 10/93-99; Ridgecrest, CA (Training included survey methods, handling procedures for tortoises and eggs, burrow excavation, and artificial burrow construction)

Biology and Management of Sensitive Amphibians and Reptiles of Central and Southern California. 6/11-12/94; Goleta, CA

Second Annual Horned Lizard Conference. 6/1/94; San Diego, CA

Second Annual Tropical Deciduous Forest Symposium. 5/22-23/94; Tucson, AZ

Memberships

The Wildlife Society– Member: 2005-present

Southwestern Herpetologists Society, Inland Empire Branch – Member: 2001-present, Secretary: 2001-2004

National Audubon Society, Inland Empire Branch – Member: 1999-present

Friends of the University of California, Riverside Entomological Research Museum – Member: 1998-present

California Botanical Society - Member: 1996-present

Riverside Land Conservancy - Land Stewards School Instructor/Technical Advisor: 1995-1997

Society for the Study of Amphibians and Reptiles - Member: 1994-present

Desert Tortoise Council - Member: 1993-present

American Federation of Herpetoculturists - Member: 1988-1995

Inland Empire Reptile and Amphibian Society – Member: 1985-2000, President: 1996-1998, Vice President: 1992-1996, Secretary: 1990-1992

Summary of Core Skills

Experience with Sensitive Amphibian and Reptile Species

Has managed, supervised, and conducted general herpetological inventories, as well as focused field surveys, habitat assessments and/or mitigation monitoring for the following Threatened, Endangered, and sensitive herpetofauna: California Red-legged Frog, Mountain Yellow-legged Frog, Arroyo Toad, Western Spadefoot, Slender Salamanders, Desert Tortoise, Southwestern Pond Turtle, Flat-tailed Horned Lizard, San Diego Coast Horned Lizard, Belding's Orange-throated Whiptail, Coachella Valley Fringe-toed Lizard, Panamint Alligator Lizard, Gila Monster, and Southern Rubber Boa.

Experience with Sensitive Invertebrates

Has managed, supervised, and conducted general entomological inventories, as well as focused field surveys and habitat assessments for the following Threatened, Endangered, and sensitive invertebrates: Delhi Sands Flower-loving Fly, Quino Checkerspot Butterfly, Coachella Valley Jerusalem Cricket, and Mojave Desert Spring Snails. Has also co-authored and participated in Habitat Conservation Plans for the Delhi Sands Flower-loving Fly as well as participated in a life history study of the species.

Experience with Sensitive Bird Species

Has assisted with focused field surveys and conducted habitat assessment and mitigation monitoring for the following Threatened, Endangered, and sensitive avifauna: Bald Eagle, Coastal California Gnatcatcher, Least Bell's Vireo, Southwestern Willow Flycatcher, Le Contes' Thrasher, Burrowing Owl,

Michael D. Wilcox

raptors, and various riparian-nesting bird species. Has assisted permitted biologists with mist netting and color-banding of California Horned Larks for Bird Air-Strike Hazard (BASH) studies and common raven capture, pit-tagging, and release at Edwards Air Force Base. Has also participated in passive relocation and artificial burrow construction for Burrowing Owls.

Field Experience with Sensitive Mammals

Has conducted focused field surveys, habitat assessments and/or mitigation monitoring for the following Threatened, Endangered, and sensitive mammals: Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, Los Angeles Pocket Mouse, Palm Springs Pocket Mouse, Pacific Pocket Mouse, Mojave Ground Squirrel, Palm Springs Round-tailed Ground Squirrel, and various large carnivores. Has also assisted with live trapping surveys for Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, Mojave Ground Squirrel, Palm Springs Pocket Mouse, and Los Angeles Pocket Mouse. Has also assisted with focused bat surveys.

Field Experience with Sensitive Plants

Has conducted general botanical inventories, habitat assessments and focused field surveys for the following Threatened, Endangered, and sensitive plant species: Coachella Valley Milk Vetch, Booth's Evening Primrose, and Mojave Monkeyflower. Has also assessed the health, selection of, and supervised the transplantation of Joshua trees, Mojave Yucca, and various species of cacti for various desert restoration projects. Has also participated in the restoration of riparian, wetlands, and coastal sage scrub vegetation communities.

Detailed Core Skills by Project

Renewable Energy Resources

Whitewater Wind Energy Conversion Systems, Shell Oil Corporation, San Geronio Pass, Riverside Co., CA. Conducted general and focused (for Desert Tortoise, Burrowing Owl, and sensitive plant species) biological surveys; Desert Tortoise burrow excavation, artificial burrow construction, processing, and relocation; Burrowing Owl burrow excavation, artificial burrow construction, and passive relocation; mitigation monitoring; personnel awareness training for the development, installation, and implementation of a wind energy park located in the San Geronio Pass area, on the northwestern outskirts of the Coachella Valley.

Cabazon Wind Energy Conversion Systems, Cannon Power, Cabazon, CA. Conducted general and focused biological surveys (for Desert Tortoise, Burrowing Owl, and Coachella Valley Fringe-toed Lizard), mitigation monitoring, and biological resources awareness training for the development, installation, and implementation of a wind energy park located in the San Geronio Pass area for the life of the project.

Domestic Water Development and Supply

Coachella Canal Lining Project, Coachella Valley Water District, Niland, CA. Conducted and prepared detailed assessments of wildlife (specifically Desert Tortoise) accessibility for a 36-mile segment of the Coachella Canal in support of the preparation of FEIS/R, ESA Section 7 Informal Consultation, NEPA Record of Decision, and CEQA Finding of Fact and Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program processes and document preparation; Imperial and Riverside counties; Coachella Valley Water District, Bureau of Reclamation, and the San Diego Water Authority. Conducted preconstruction and clearance surveys for special-status species (i.e., Desert Tortoise, Burrowing Owl, Flat-tailed Horned Lizard) prior to site disturbance and served as lead biological monitor during the canal construction phase. Other duties included biological awareness training to on site personnel, performing ecological values assessments, preparing mitigation monitoring plan, environmental protection plan, and construction monitoring plan.

Lake Skinner Filtration Plant Expansion Project, Metropolitan Water District, Riverside Co., CA. Conducted general biological surveys, prepared Biological Assessment and authored the Biological Resources Section of an EIR in support of ESA Section 7 Formal Consultation, Section 404 and 1601 permits, NEPA Record of Decision, and CEQA Finding of Fact and Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program processes and document preparation. Significant biological issues included nesting Bald Eagle, California Gnatcatcher, Stephens' Kangaroo Rat, Quino Checkerspot Butterfly, and jurisdictional wetlands and waters of the U.S.

Morongo Basin Pipeline Project, Joshua Basin Water District, Mojave Desert, CA. Conducted general biological surveys, focused surveys for sensitive species (i.e., Desert Tortoise, LeConte's Thrasher, Burrowing Owl), mitigation monitoring, revegetation, conducting biological resources awareness training for a 68-mile pipeline installation project in the Mojave Desert. Significant biological issues included Desert Tortoise, Burrowing Owl, LeConte's Thrasher, and native cacti and yucca.

Mojave River Pipeline, 1994. Conducted focused surveys for the Desert Tortoise from Adelanto to Helendale for the development of the Mojave River Pipeline Project, San Bernardino County, CA

Oil and Gas Development and Supply

Kramer Junction Line 6905 Expansion Project, Southern California Gas Company, Adelanto-Kramer Junction, San Bernardino County, CA. Served as lead biologist, supervising a team of 30+ biologists and biological monitors, for the installation and development of a 33-mile natural gas pipeline project in the Mojave Desert. Conducted general and focused biological surveys (for Desert Tortoise, Burrowing Owl, and sensitive plant species); Desert Tortoise burrow excavation, artificial burrow construction, processing, and relocation; Burrowing Owl burrow excavation, artificial burrow construction, and passive relocation; mitigation monitoring; personnel awareness training, yucca and cacti transplantation, and vertical mulching.

Kinder Morgan Energy Partners On-call Biological Services, Kinder Morgan Energy Partners, Victorville CA to Jean NV. Conducted, managed and supervised others conducting focused preconstruction/clearance surveys and mitigation monitoring for two different multiple product pipeline anomaly repair projects, CalNev 14" and 8", from the vicinity of Victorville, CA north to Jean, NV.

Habitat Conservation Plan for Delhi Sands Flower-loving Fly, SFPP, L.P., Operating Partnership for Kinder Morgan Energy Partners and CalNev Pipeline Company, L.L.C., Colton to Ontario, San Bernardino Co., CA. Developed and co-authored a draft HCP for the Delhi Sands Flower-loving Fly at the Colton Terminal and associated pipeline facilities totalling approximately 50 miles of linear pipeline easements in Colton, Rialto, and Ontario. Managed and conducted focused surveys for the Delhi Sands Flower-loving Fly, general biological assessments, mitigation monitoring, and habitat restoration activities for SFPP, L.P.'s facilities located at the Colton Terminal and within the Colton Dunes.

All American Pipeline Project, All American Pipeline Company, San Bernardino Co., CA. Coordinated and managed general and focused biological surveys and mitigation monitoring for the Desert Tortoise for exploratory geotechnical drilling activities in support of the All American Pipeline Project; San Bernardino County; All American Pipeline Company.

Electrical Power

SCE Habitat Conservation Plan, Southern California Edison Company, Inland Empire, San Bernardino and Riverside Counties, CA. Supervised and managed a team of up to 12 biologists for a two-year period conducting habitat assessments and focused surveys for the Delhi Sands Flower-loving Fly in support of the development of a multi-species HCP for Southern California Edison's transmission line easements and associated properties throughout the Colton Dunes in the Inland Empire.

Otay Mesa Generating Plant, San Diego Gas and Electric Company, Otay Mesa, San Diego County, CA. Conducted habitat assessments and focused surveys for the Quino Checkerspot Butterfly the proposed generation plant site and throughout the associated transmission line easements on Otay Mesa from the U.S./Mexican border north to Chula Vista.

Valley to Auld Electrical Substation and Transmission Line Upgrade Project, Southern California Edison Company, Riverside County, CA. Conducted mitigation monitoring for the Valley to Auld transmission line and electrical substation upgrade project. Significant biological issues included the California Gnatcatcher, Burrowing Owl, Stephens' Kangaroo Rat, Quino Checkerspot Butterfly, Belding's Orange-throated Whiptail, San Diego Coast Horned Lizard, and Southwestern Pond Turtle.

U.S. Forest Service

GST and Level 3 Fiber Optic Installation Project, U.S. Forest Service, San Bernardino Ranger District, San Bernardino Co., CA. Authored a comprehensive Environmental Assessment (EA) and a Biological Assessment/Biological Evaluation (BA/BE) for a joint GST/Level 3 fiber optic conduit installation project throughout a 13-mile segment of the San Bernardino National Forest. Also conducted habitat assessments for the San Bernardino Kangaroo Rat, Quino Checkerspot Butterfly, Least Bell's Vireo, Southwestern Willow Flycatcher and participated in focused surveys for the California gnatcatcher.

Angeles National Forest Arroyo Toad Surveys, U.S. Forest Service, Angeles National Forest Ranger District, Los Angeles County, CA. Conducted habitat assessments and focused surveys for the Arroyo Toad throughout 9 drainage systems containing potentially suitable and in historically occupied habitat within the Angeles National Forest. The focused survey efforts resulted in the detection of the species in one of the drainages surveyed and the discovery of a previously unknown population of the California Red-legged Frog.

San Bernardino National Forest Mountain Yellow-legged Frog Surveys, U.S. Forest Service, San Bernardino Ranger District, San Bernardino County, CA. Conducted habitat assessments and focused surveys for the Mountain Yellow-legged Frog throughout 14 drainage systems in historically occupied habitat within the San Bernardino National Forest resulting in the rediscovery of the species in the San Bernardino Mountains where they had been previously reported to be extirpated.

San Bernardino National Forest Arroyo Toad Surveys, U.S. Forest Service, San Bernardino Ranger District, San Bernardino County, CA. Conducted habitat suitability assessments and protocol focused surveys for the endangered arroyo toad in selected drainages, totaling approximately 6 miles, in the San Bernardino National Forest, San Bernardino County, California. Methodologies employed included diurnal and nocturnal eye-shine visual encounter surveys, diurnal larval and egg mass searches, and periodic silent listening for calling individuals. The survey efforts resulted in the detection of arroyo toads within several of the focused survey areas and the rediscovery of the species in the Mojave River.

Department of Defense

Vandenberg Air Force Base Missile Transport Bridge Project. Participated in focused surveys, capture, and relocation of California Red-Legged Frogs and Two-striped Garter Snakes, seine netting and relocation of the Unarmored Three-spine Stickleback, exclusion fence construction and maintenance, construction monitoring, environmental compliance training for the construction of a Missile Transport Bridge over an environmentally sensitive creek, wetlands, and riparian habitat.

Edwards Air Force Base Inventory of Reptiles and Amphibians, Edwards Air Force Base, CA. Participated in a two-year base-wide inventory of the reptiles and amphibians of Edwards Air Force Base. Survey methodologies included diurnal visual encounter surveys, cover boards, night driving, and nocturnal eye-shine searches for amphibians, Edwards Air Force Base.

Camp Pendleton Marine Corps Air Station Road Improvement Project, Kinder Morgan Energy Partners, Camp Pendleton, CA. Provided biological monitoring for the improvement of base road infrastructure. Sensitive biological resources monitored included the Pacific Pocket Mouse and California Gnatcatcher.

March Air Force Base Wetland Mitigation Project, March Air Force Base, Moreno Valley, CA. Designed, implemented, and monitored the development of a wetland (pond 6B') as mitigation for impacts to other on-base wetlands.

Leuhman Ridge Rocket Test Site, Edwards Air Force Base, San Bernardino County, CA. Conducted focused surveys, handling, processing, artificial burrow construction, and relocation of Desert Tortoises at Edwards Air Force Base, San Bernardino County, CA.

Transportation and Infrastructure

CalTrans State Route 138, Segments 10 & 11, CalTrans District 7, Los Angeles County, CA. Coordinated and conducted biological monitoring of the widening of two different, approximate 3-mile sections of State Route 138 in the vicinity of Pearblossom, Los Angeles County, CA. Duties included scheduling monitoring activities, conducting focused preconstruction/clearance surveys for Desert Tortoise and Mojave Ground Squirrel, monitoring, supervision and inspection of exclusion fence installation. Other duties included meeting, communicating, and coordinating with CalTrans inspectors, Granite Construction Company personnel, and revegetation contractors.

Ontario Airport Master Plan, P&D, Ontario, CA. Conducted habitat assessments, mapping, and focused surveys for the Delhi Sands Flower-loving Fly on vacant lands owned and operated by Los Angeles World Airports in support of the Ontario Airport Master Plan, Ontario, San Bernardino County, CA.

CalTrans On-call Biological Services, CalTrans, District 8, Riverside and San Bernardino Counties, CA. Conducted habitat suitability assessments and protocol focused surveys for the Arroyo Toad, Mountain Yellow-legged Frog, California Red-legged Frog, Southern Rubber Boa, and Desert Tortoise for various CalTrans projects throughout portions of Riverside and San Bernardino counties, California. Projects included SR-138 realignment project between I-15 and Summit Valley (Arroyo Toad), I-15 bridge widening project at the Mojave River crossing near Victorville (Arroyo Toad, Red-legged Frog), SR-18 seismic retrofit at the Mojave River crossing in Apple Valley (Arroyo Toad, Red-legged Frog), Opah Ditch Mining Reclamation Project near Baker (Desert Tortoise), I-40 widen project between Barstow and Newberry Springs (Desert Tortoise), and Big Bear Dam/SR-18 realignment (Mountain Yellow-legged Frog, Southern Rubber Boa). Methodologies employed included diurnal and nocturnal eye-shine visual encounter surveys, diurnal larval and egg mass searches, periodic silent listening for calling individuals, and linear transects. Sensitive species detected during the course of the contract included the Arroyo Toad, Southwestern Pond Turtle, Desert Tortoise, Silvery Legless Lizard, San Diego Coast Horned Lizard, Belding's Orange-throated Whiptail, and Coastal Western Whiptail.

Bautista Canyon Road Widening Project, Riverside County Transportation Department, Hemet, CA. Supervised, managed, and conducted habitat suitability assessments for sensitive herpetofauna and the Quino Checkerspot Butterfly, conducted a general herpetological inventory, and protocol focused surveys for the Arroyo Toad and Quino Checkerspot Butterfly throughout the suitable areas of the project site, a 13-mile segment of Bautista Canyon Road for a proposed road paving and improvement project. The surveys resulted in the positive detection of the Arroyo Toad and Quino Checkerspot Butterfly throughout various areas of the site.

Parks and Recreation

Arroyo Seco Master Plan General Herpetological Inventory and Focused Sensitive Species Surveys, City of Pasadena Parks & Recreation District, Pasadena, CA. Supervised, managed, and conducted habitat suitability assessments for sensitive herpetofauna, a general herpetological inventory, and protocol focused surveys for the Arroyo Toad, Mountain Yellow-legged Frog, California Red-legged Frog, Southwestern Pond Turtle and San Diego Coast Horned Lizard within the Arroyo Seco, a tributary of the Los Angeles River, Los Angeles County, California. Methodologies employed included diurnal and nocturnal eye-shine visual encounter surveys, diurnal larval and egg mass searches, periodic silent listening for calling individuals, and night driving. Although the survey efforts for the target species ended with negative results, a total of 14 species including 3 sensitive species (i.e., Coast Range Newt, Coastal Western Whiptail, and Two-striped Garter Snake) have been detected on the project site.

San Bernardino National Forest/California State Park Parcel Exchange Project, The Wildlands Conservancy, San Bernardino National Forest, San Bernardino Co., CA. Conducted comprehensive wildlife surveys and habitat evaluations of several parcels considered for exchange from/to the U.S. Forest Service and California State Parks system.

Private Sector

Rio Vista Specific Plan, Albert A. Webb Associates, Rubidoux, Riverside Co., CA. Conducted, supervised and managed a comprehensive general biological resources assessment, habitat suitability assessments, and follow-up focused surveys for the Delhi Sands Flower-loving Fly, Burrowing Owl, and delineation of jurisdictional areas for the above referenced 909.4-acre project site proposed for residential and commercial development. Documents were submitted in coordination and compliance with U.S. Fish and Wildlife, California Department of Fish and Game, Western Riverside County Multiple Species Habitat Conservation Plan, and the U.S. Army Corps of Engineers.

Desert Dunes Development Project, Terra Nova Planning and Research, Inc., Desert Hot Springs, Riverside Co., CA. Coordinated, managed, and conducted a general biological resources assessment and follow-up focused surveys for Desert Tortoise, Flat-tailed Horned Lizard, Burrowing Owl, Le Conte's Thrasher, Crissal Thrasher, and Coachella Valley Milk Vetch for the proposed residential development of a 450-acre project site located in the Colorado Desert. A delineation and mapping of jurisdictional areas throughout the site was also conducted.

Santa Fe Ranch Biological Resources Inventory and Assessment, Santa Fe Ranch Conservancy, Riverside Co., CA. Conducted, supervised and managed a comprehensive general biological resources assessment, habitat suitability assessments, and follow-up focused trapping surveys for rodents, focused bat surveys, a general wildlife inventory and vegetation mapping for a 2,845.36-acre site.

Religious Center for the Carmelite Sisters of the Most Sacred Heart, Lake Los Angeles, CA. Conducted a general biological assessment, habitat suitability assessments, and follow-up focused surveys for the Desert Tortoise and trapping for the Mojave Ground Squirrel for the proposed development of the above referenced project near Lake Los Angeles, Los Angeles County, CA

World Beater Mine Herpetological Inventory, and Focused Sensitive Herpetological Species Surveys, World Beater Mine, Panamint Mountains, Inyo Co., CA. Conducted a general herpetological inventory and focused surveys for the Panamint alligator lizard and salamander species throughout Pleasant Canyon in the Panamint Mountains, Inyo County, California. Methods used for the survey included diurnal visual encounter surveys, the use of cover boards, and cover plastic stations. Sensitive species detected during the course of the contract included the Panamint Alligator Lizard and Chuckwalla.

Employment History

Wildlife Biologist / Ecologist– **AMEC Earth & Environmental, Inc.:** December 2000 – present

Prepares habitat conservation plans (HCP), environmental assessments (EA), biological assessments (BA), and focused sensitive species' surveys and habitat assessments for both the public and private sectors. Conducts focused presence/absence surveys for rare and endangered flora and fauna including the Desert Tortoise, Southwestern Pond Turtle, Arroyo Toad, California Red-legged Frog, Mountain Yellow-legged Frog, Western Spadefoot, Coast Horned Lizard, Delhi Sands Flower-loving Fly, Quino Checkerspot Butterfly, California Gnatcatcher, and Southwestern Willow Flycatcher. Participates in habitat restoration projects and mitigation monitoring programs for the California Gnatcatcher, Least Bells' Vireo, Stephens' Kangaroo Rat, Desert Tortoise, Flat-tailed Horned Lizard, and California Red-legged Frog.

Adjunct Faculty– **Victor Valley Community College:** March 2002 – present

Serves as part time, adjunct instructor for Biology 128: Identification and Study of the Amphibians and Reptiles of the Mojave Desert and Adjacent Mountains.

Wildlife Biologist / Ecologist– **Ogden Environmental & Energy Services:** March – December 2000

Prepared HCPs, EAs, BAs, and focused sensitive species' survey reports for a variety of projects for both the public and private sectors. Conducted focused presence/absence surveys for rare and endangered flora and fauna including the Desert Tortoise, Arroyo Toad, Delhi Sands Flower-loving Fly, and Quino Checkerspot Butterfly. Participated in mitigation monitoring programs for the California Gnatcatcher, Least Bells' Vireo, Stephens' Kangaroo Tat, Desert Tortoise, and Flat-tailed Horned Lizard. Assisted permitted biologists with focused surveys for the California gnatcatcher.

Wildlife Biologist - **Tierra Madre Consultants, Inc.:** 1993 – March 2000

Prepared biological and environmental assessments, evaluations, and other documents for both the public and private sectors. Performed focused presence/absence surveys for rare and endangered fauna and flora; including the Desert Tortoise, Southwestern Pond Turtle, Southern Rubber Boa, Flat-tailed Horned Lizard, San Diego Coast Horned Lizard, Orange-throated Whiptail, Coachella Valley Fringe-toed Lizard, Panamint Alligator Lizard, California Red-legged Frog, Mountain Yellow-legged Frog, Arroyo Toad, Western Spadefoot, Mojave Ground Squirrel, Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, Los Angeles Pocket Mouse, hibernating bats, Burrowing Owl, Delhi Sands Flower-loving Fly, and Quino Checkerspot Butterfly. Assists in the preparation of Habitat Conservation Plans; field studies of the California Gnatcatcher; habitat restoration projects, rare plant surveys; small mammal trapping; and wetland delineations.

Wildlife Biologist - **Thomas Olsen Associates, Inc.:** 1995

Performed focused Delhi Sands Flower-loving Fly presence/absence surveys daily at 15 different locations within the City of Fontana. Also performed mitigation monitoring and behavioral studies of the Delhi Sands Flower-loving Fly for San Bernardino County Medical Center throughout the duration of the species' activity period.

Science Teacher - **Shandin Hills Middle School:** 1993

Long-term substitute science teacher, replacing former instructor mid-term, teaching natural sciences (biology, astronomy, geology, etc.) to approximately 250 eighth grade students. Responsible for creating class/home assignments and projects, examinations, parent conferences, disciplinary actions, grading and a variety of other educational activities.

Presentations/publications

Wilcox, M.D. 2006. *Snakes of Hesperia and Adjacent Areas*. OSHA training provided to the City of Hesperia on 9 August 2006, Hesperia, CA.

Michael D. Wilcox

- Wilcox, M.D. 2006. *Snakes of Cismontane Southern California*. OSHA training provided to the Cities of Norco, Corona, and Riverside on 8 August 2006, Norco, CA.
- Van Dam, M., A. Van Dam, and M.D. Wilcox. 2006. **Description of the 3rd Instar Larva and Adult Male of *Megasoma sleeperi* Hardy** (Scarabaeidae: Dynastinae). *Coleopterists Bulletin* 60(1), p.59-67.
- Goodward David M., B. Cummings and M. D. Wilcox. 2005. **Geographic Distribution: *Hemidactylus turcicus* (Mediterranean House Gecko)**. *Herpetological Review*. 36 (2):199.
- Wilcox, M.D. 2004. *Reptiles and Amphibians of Kansas*. Lecture presented to the California Turtle and Tortoise Club, San Bernardino Chapter on 15 October 2004.
- Wilcox, M.D. 2004. *Herpetofauna of the Mojave Desert and Adjacent Mountains*. Lecture presented to the Mojave Desert Bird Club on 10 June 2004.
- Wilcox, M.D. 2003. *Reptiles and Amphibians of Kansas*. Lecture presented to the Southwestern Herpetologists Society, Inland Empire Branch on 1 October 2004.
- Wilcox, M.D., D.A. Wilcox, K.R. Beaman, and C. Painter. 1999. **Geographic Distribution: *Tantilla yaquia***. *Herpetological Review* 31(3), p.187.
- White, S.D., A.C. Sanders, and M.D. Wilcox. 1996. **Noteworthy Collections: California**. *Madrono* 43(2), p. 334-338.
- Wilcox, M.D., S.J. Myers, K.R. Beaman, and R. McKernan. 1995. **Geographic Distribution: *Xantusia henshawi***. *Herpetological Review* 26(2), p.109.
- Wilcox, M.D. (Ill.) 1991. **The ABC's of Geography**. Slofoot Publishing, San Bernardino, California.

Thomas Brian Egan

Senior Biologist

Professional summary

Mr. Egan is a Wildlife Biologist with a strong natural resource management background who specializes in project planning, coordination and environmental analysis. Biological & botanical site assessment skills and land use regulatory compliance knowledge form the cornerstones of his background; which is based on a 16 year career as a Wildlife Management Biologist in two public land management agencies: the U.S. Forest Service and the Bureau of Land Management. He has experience with a wide range of State and Federal laws pertaining to natural resource management in California, including application of the California Fish and Game Code and the National Environmental Policy Act (NEPA) process; the Clean Water Act; the State and Federal Endangered Species Acts (CESA/FESA); and the Federal Land Policy and Management Act (FLPMA).

Mr. Egan has extensive experience in environmental document preparation, public and private land use project analysis, affected agency coordination and in regulatory permitting. He has conducted Carbonate Endemic Plant, Desert Tortoise, Mojave Ground Squirrel, Amargosa Vole, Bighorn Sheep and Least Bell's Vireo habitat assessments and completed associated consultation and conference regulatory requirements for proposed projects affecting Federal land. He has considerable experience in large linear right-of-way permitting actions and has implemented several large scale habitat restoration and re-vegetation efforts. He has written several site disturbance rehabilitation plans, conducted rare plant surveys and designed/implemented land use monitoring projects throughout the Mojave Desert. He also has extensive experience in desert bat management, monitoring and impact mitigation development. Further, he has participated in the collaborative development of several bioregional management plans for public lands in the Mojave Desert; several public land vehicle route designation efforts; and the development of vehicle use area management plans/monitoring efforts.

Professional qualifications

BLM Section 7 ESA Management & Consultation
Measuring/Monitoring Vegetative Communities
Desert Lands Rehabilitation Workshop
Mohave Ground Squirrel Habitat Evaluation
BLM Mine Assessment for Bats
CA Scientific Collection Permit
BLM Riparian Interpretation/PFC Trainer

BLM Multiple Use Management in Wilderness
BLM Inventory/Monitoring Sp. Status Plants
Restoration of Disturbed Wildlands Workshop
BLM Conservation of Neotropical Migratory Birds
OSHA Mine Safety/Haz. Abate. Tunnels Permit
Basic 32 Firefighting/Resource Advisor Training
Instructor-DTC Report Writing/Survey Workshop

Education

1984, Humboldt State University, Bachelor of Science in Wildlife Management; with Emphases in Animal Behavior, Botany and Range Management; and Academic Minors in Biology, Natural Resources and Psychology.

Memberships

California Native Plant Society
Desert Tortoise Council

California Exotic Pest Plant Council
The Wildlife Society

Location

Tehachapi California

Employment history

5/2002 - Present	AMEC Earth & Environmental, Senior Biologist, Tehachapi, CA
1-5/2002	TNT Biological Consulting, Wildlife Biologist, Helendale CA
1990 - 2002	USDI Bureau of Land Management, Wildlife Management Biologist, Barstow Field Office, California Desert District, Barstow, CA
1988 - 1990	USDI Veterans Administration, Washington Medical Center, Biological (Veterinary) Technician, Seattle WA
1984 - 1988	USDA Forest Service, Wildlife Biologist/Raptor Specialist, Scott River Ranger District, Klamath National Forest, Fort Jones CA

Summary of details by project

2002 Surprise Canyon Vehicle Route Designation EIS Project: Biologist responsible for biological expertise and oversight in developing an EIS addressing vehicle route designation within an Area of Critical Environmental Concern on BLM-managed public lands.

2002 Biological Assessment/Streambed Alteration Permitting, Sunset Hills Memorial Park Phase II Expansion, Mojave Desert, California: Biologist responsible for assessing the presence and habitat use by desert tortoises at a cemetery site and preparing a survey/assessment report. Review of documentation needed for special status species regulatory permitting and development of a Streambed Alteration Agreement with California Dept. of Fish & Game.

2002 Site Permit Compliance Monitoring, High Desert Power Plant Project, Mojave Desert, California: Biologist responsible for ensuring site monitoring compliance with Federal Clean Water Act and State Streambed Alteration Agreement permitting.

Field Assessments and Biological Assessments, BLM Projects, California: Biologist responsible for completing field inventories and preparing soil, water, plant and wildlife biological assessments in support of finalizing National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) requirements on land use activities (rights-of-way, mineral extraction, recreation activities, livestock use, military projects) occurring within the Barstow Field Office BLM jurisdiction. Provided technical reviews of Biological & Environmental Assessments submitted to the Bureau by private contractors and internal staff. Reviewed proposed actions in a manner intended to ensure adequacy under NEPA/ESA. Mentored two to three biological staff. Species of concern included 6 threatened, 10 endangered, and 35 BLM Sensitive plant/animal species occurring in a public land area exceeding 2.5 million acres. Primary species of concern included desert tortoise, Mojave ground squirrel, Amargosa vole, Least Bells Vireo and five carbonate endemic plant species. Provided wildlife and botanical support during NEPA scoping meetings, often developing strategies with other team members. Developed/implemented several large scale upland/riparian and weed control restoration projects.

Field Assessments and Biological Assessments, USFS Projects, California: Biologist responsible for completion of field inventories and preparing plant and wildlife biological assessments in support of finalizing NEPA/ESA requirements on timber sale, mining and recreational use activities in the Scott River Ranger District of the Klamath National Forest jurisdiction. Provided technical reviews and conducted wildlife inventories/monitoring tasks involving several forest-nesting species of raptors such as peregrine falcons, spotted owls, bald and golden eagles, goshawk and osprey. Designed and implemented site monitoring plans and area habitat improvement projects.

John F. Green

Biologist

Professional summary

Mr. Green has a broad background in field biology. He has extensive experience in the visual and auditory field identification of birds. He has spent thousands of hours birding in California and thousands more birding in much of the rest of the United States, Canada, Costa Rica, Great Britain, Kenya, and Madagascar. He has assisted in focused surveys for the federally threatened California Gnatcatcher in Los Angeles and Orange Counties. He led educational tours at the Newport Back Bay Reserve in Orange County. He spent several years conducting point count surveys at Clark Regional Park in Orange County for the National Audubon Society's "Birds in the Balance" program. He participates in Audubon's Bird-a-thon every spring, tallying the number of bird species present in Orange County during a 24-hour period. His team regularly locates 170 plus species. He compiles a weekly rare bird report for the Audubon Society, covering all of Southeastern California. All sightings reported are screened for birds that are rare or unusual in the region being reported from. He publishes a quarterly summary of these birds in "The Western Meadowlark" newsletter. Mr. Green also leads field trips for the Audubon Society and John A. North High School in the Box Springs Mountains in Riverside County. He has also led students individually for focused bird study programs and taken biologists visiting The University of California, Riverside on local biological tours. He surveyed a block of the San Jacinto Valley in Riverside County for Mountain Plovers during a study of the status of that species. He surveyed an area for the Riverside County Breeding Bird Atlas that included much of the Box Springs Mountains and northern Moreno Valley in Riverside County.

Mr. Green has spent hundreds of hours in the field identifying Native Plants, and landscaping with them. He identified a previously unknown relict population of Yerba Santa in the Box Springs Mountains near Riverside. The nearest known population is in the San Jacinto Mountains.

Mr. Green has spent thousands of hours of work in field Entomology, and is skilled at identifying insects. He created school display and teaching collections for John A. Rowland High School and for Fullerton College. He has published a life history on one species of Tephritid fly. He taught insect information and appreciation workshops for the Fullerton Unified School District in Orange County. He has assisted with an ant survey in the Santa Rosa Plateau in Riverside County, and discovered a previously unknown species there. He spent several years in the field identifying fruit flies and their hosts in

John F. Green

Orange and Los Angeles Counties. He participated in the field on the study that brought the Ash Whitefly under control in Southern California.

He spent several years assisting on a Fullerton College kangaroo rat study in the East Mojave. This study involved trapping and identifying many species of small mammals in addition to the three species of kangaroo rats involved. He has hundreds of hours of independent study and identification of mammals as well.

Mr. Green has independently spent thousands of hours over several decades observing and identifying reptiles and amphibians, both by sight and in the hand, especially in California and the Southwest.

Mr. Green's time in the field has included much independent observation of threatened or endangered species including Light-footed Clapper Rail, Yuma Clapper Rail, Snowy Plover, California Least Tern, California Gnatcatcher, Southwestern Willow Flycatcher, Least Bell's Vireo, and Desert Tortoise. He has researched decades of sightings to compile a checklist of the vertebrates of the Box Springs Mountains in Riverside County. This checklist is updated yearly as new sightings are made and old reports are recovered.

Professional qualifications

Compiler of the Southeastern California Rare Bird Alert for the San Bernardino Valley Audubon Society. This service covers Imperial, Inyo, Kern, Riverside, and San Bernardino Counties.

Education

University of California Extension, Riverside, CA 2001 (Certificate in Field Ornithology Program)

University of California, Riverside, CA 1991 (BS Entomology)

Fullerton College, Fullerton, CA 1989 (AA Biology)

Location

Riverside, California, USA

Seminars, Workshops, and Symposia

Introduction to Bird Banding, University of California Extension, Riverside, 2001

Field Study of Birds: Spring, University of California Extension, Riverside, 2001

Field Study of Birds: Winter, University of California Extension, Riverside, 2001

Field Study of Birds: Fall, University of California Extension, Riverside, 2000

Memberships

Western Field Ornithologists

American Birding Association

California Native Plant Society

Xerces Society (invertebrate Biodiversity)

Employment history

President, John F. Green Products, Inc. 1979-2001

John F. Green

Trapper, Supervisor, Department of Agriculture 1992-1996
Field Assistant (Entomology), University of California, 1991

Presentations / publications

Birds of the Season, 1998-present, published quarterly in the Western Meadowlark
Birds and other Vertebrates of the Box Springs Mountains and Vicinity 1998,
Updated yearly for the Riverside County Parks Box Springs Reserve

Green, John F., David H. Headrick, and Richard D. Goeden 1993. Life History and
Description of Immature Stages of *Procecidochares stonei* Blanc & Foote on
Viguiera spp. in Southern California (Diptera: Tephritidae). *Pan-Pacific Entomologist*
69(1):
18-32.

Dave M Kajtaniak

Staff Biologist

Professional Summary

Mr. Kajtaniak has over nine years of professional endeavors with publicly and privately owned organizations. To date, he has conducted professional biological and environmental assessment work throughout San Bernardino, Riverside, Imperial, Humboldt, Del Norte, and Siskiyou counties in California, Storey County, Nevada, as well as counties in northwest and southeast Ohio. Mr. Kajtaniak's work has focused on the research and management of Threatened, Endangered, and Sensitive Species of fish and plants in many different eco-regions. This has incorporated broad computer and mechanical skills to perform analyses and documentation within project-related assignments. His expertise has been derived from a formal education (BS in Field Biology) and extensive domestic field experience.

Professional experience includes playing a key role in the development and implementation of a state-wide, holistic approach for watershed assessments. Mr. Kajtaniak has served as the lead biologist supervising and managing biological compliance monitoring and sensitive species survey efforts for a variety of large-scale projects, conducting focused surveys and monitoring of a variety of endangered, threatened, and/or otherwise sensitive species, and performed wetland delineations in various habitats and regions. In addition to fieldwork, Mr. Kajtaniak authors environmental and biological assessments, wetland delineation reports, watershed assessments, habitat suitability evaluations for sensitive species, mitigation and revegetation plans, instream habitat improvement projects, and comprehensive field inventories of flora and fauna.

Professional Qualifications

California Department of Fish and Game Scientific Collectors Permit #801280-03

Supervised Investigator for California Gnatcatcher on Federal Threatened/Endangered Species Permit, #TE785148-7 (survey activities)

Supervised Investigator for Least Bell's Vireo on Federal Threatened/Endangered Species Permit, #TE-054011-0 (survey activities)

Supervised Investigator for Southwestern Willow Flycatcher on Federal Threatened/Endangered Species Permit, #TE785148-7 (survey activities)

Supervised Investigator for California Red-legged Frog on Federal Threatened/Endangered Species Permit # TE785148-7 (survey activities)

Supervised Investigator for Stephens' Kangaroo Rat on Federal Threatened/Endangered Species Permits #TE804203-5 and TE785148-7 (survey activities)

Supervised Investigator on Federal Threatened/Endangered Species Permit for San Bernardino Kangaroo Rat, #TE804203-5 (survey activities)

Supervised Investigator for Pacific Pocket Mouse on Federal Threatened/Endangered Species Permit # TE785148-7 (survey activities)

Wetland Delineation Training Certificate

Desert Tortoise Council Certificate

Education

College of the Redwoods, Eureka, CA
Furthering education, Semester Units 11, January 2002 to April 2003

Ohio University, Athens, OH
B.S. in Field Biology, November 1999

Seminars, Symposia, and Workshops

Large Mammal Tracking Training – California Department of Fish and Game. August 23, 2006, Niland, CA.

Desert Tortoise Council Surveying, Monitoring & Handling Techniques Workshop. October 22 & 23, 2005, Ridgecrest, CA.

Wetland Training Institute, Inc (WTI) Wetland Delineation Course. July 25-29, 2005, San Diego, CA.

Survey of Major Plant Families of Southern California: Advanced Plant Identification Workshop. January, 2005, Rancho Santa Ana Botanic Garden, Claremont, CA.

Big Bear Fireshed Workshop. August, 2004, Fawnskin, CA.

Society of American Foresters: Evaluation of San Bernardino National Forest Conference. May, 2004, Lake Arrowhead, CA.

16th, 17th, 19th, 21st, and 24th annual California Salmonid Restoration Federation Conference: February and March 1998, 1999, 2001, 2003, & 2006 various locations in California.

Memberships

Salmonid Restoration Federation – Alternate Board Member (June 2006 to Present)
Pomona Valley Audubon Society – June 2005 to Present
Friends of the Big Morongo Canyon Preserve 2004 to Present
California Native Plant Society – Humboldt Branch 2001-2003

Languages

English

Detailed Core Skills by Project

Domestic Water Development and Supply

Coachella Canal Lining Project. Currently serving as Lead Field Monitor for the biological monitoring of sensitive biological resources during the bypass canal construction phase. Duties include: development and implementation of large mammal monitoring plan, coordinating and scheduling monitoring activities, and ongoing discussion of biological issues with Coachella Valley Water District and construction engineers and contractors. I also contributed to the development and writing of the Environmental Protection Plan for the Coachella Canal lining project. Participated in revegetation efforts, including surveying and mapping Sonoran thorn woodland and seed collection.

Fern Valley Water District. Surveyed Fern Valley Water District's property to mark dead and dying stands of trees. Determined property boundaries and flagged in project site area. In addition to marking tree stands, area was surveyed for possible archaeological sites.

Electrical Power

Southern California Edison (SCE) DSP Projects. Performed reconnaissance level flora and fauna and focused rare plant surveys along existing SCE powerlines in San Bernardino and Riverside Counties. Upon completion of surveys wrote biological assessment reports addressing any and all biological issues concerning proposed projects.

SCE Bark Beetle Project. Supervised and managed a crew of up to 5 field technicians for an eight month period conducting assessments in residential areas for dead and dying trees. This project, located in the mountain communities of the San Bernardino and San Jacinto mountains, involved recording dead and dying tree species, mapping surveyed areas, and imputing, organizing, and analyzing field data.

Renewable Energy Resources

Victorville 2 Hybrid Power Project, ENSR, Victorville, CA. Conducted focused Desert Tortoise surveys, focused Burrowing Owl surveys, focused surveys for rare plants, focused trapping surveys for Mojave ground Squirrel, vegetation and sensitive species mapping, identification and delineation of jurisdictional water courses, and identifying potential mitigation strategies for a 400+ acre hybrid power plant site and associated transmission lines and pipeline easements. Regulatory agencies involved included California Energy Commission, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and California Department of Fish and Game.

U.S. Forest Service

Klamath National Forest Road Surveys. Conducted road / upslope watershed sediment delivery assessments following the U.S. Forest Service protocol. Inspected roads and road infrastructure features such as: culverts, water bars, and inboard drainages, in determining sediment delivery to fish bearing streams.

Klamath National Forest Stream Surveys. Performed California Department of Fish and Game in-stream structure evaluations in fish bearing tributaries of the Klamath River. These evaluations included an assessment of current stream conditions, fish habitat improvement structures, and recommendations and designs of future watershed improvement projects.

California Department of Fish and Game (CDFG)

North Coast Watershed Assessment Program. Integral role in a multiple agency effort that performed watershed assessments in Northern California (see employment history below).

AmeriCorps Volunteer. Assisted CDFG with their in-stream restoration program in northern California. Created and implemented watershed and in-stream restoration projects. Performed various Pacific salmon field inventories such as spawner surveys, juvenile snorkelling dives, downstream migrant trapping, and stream habitat surveys (see employment history below).

County Parks and Recreation

Toledo Metroparks Ecosystem Restoration. Performed ecological restoration of different habitats in the Oak Openings region of Northwest Ohio. Through the active restoration and management (controlled burns, eradication of non-native species, seed collection) of sand dunes, prairies, oak woodlands, and oak savannahs populations of endangered flora and fauna were increased as well as overall improvement in genetic diversity.

Private Timberlands

Pacific Lumber's Stream Watershed Analysis. Contributed to the fisheries portion of the Elk River Watershed Analysis in Humboldt County. This project entailed: snorkel dives for presence/absence of fish species, habitat typing all class one watercourses, determining end of anadromy, mapping fish distribution by species, and writing and editing stream reports.

Transportation and Infrastructure

CalTrans State Route 138, Segments 10 & 11, CalTrans District 7, Los Angeles County, CA. Assisted lead field biologist in the coordination of biological monitoring of the widening of two different, approximate 3-mile sections of State Route 138 in the vicinity of Pearblossom, Los Angeles County, CA. Duties included scheduling monitoring activities, conducting focused preconstruction/clearance surveys for rare plants, Desert Tortoise and Mojave Ground Squirrel, monitoring, supervision and inspection of exclusion fence installation. Other duties included meeting, communicating, and coordinating with CalTrans inspectors, and Granite Construction Company personnel.

Cedar Canyon Fire. Coordinated with timber crews of tree removal in Cedar Glen after the Cedar Glen Fire. On site supervision of tree cutting selection and marking of trees in burned residential areas.

Education and Community Outreach

Trinidad Elementary School. Taught science, specifically stream ecology and fisheries, based curriculums in schools from grades first through seventh, including organizing and leading a class field trip to a local fish hatchery.

Community Events. Participated in numerous community events aimed at improving environmental health and promoting public awareness. These included: Klamath River clean-up, Eureka Marsh Clean-up, Humboldt Bay Wildlife tree planting, Trinidad State Park non-native plant eradication, and Eureka food drive.

Employment History

Staff Biologist / Ecologist, AMEC Earth & Environmental, Inc.: August 2004 – present

Prepares environmental assessments (EA), biological assessments (BA), Wetland Delineations, and focused sensitive species' surveys and habitat assessments for both the public and private sectors. Conducts focused presence/absence surveys for rare and endangered flora and fauna including the Coachella Valley Milkvetch, Least Bell's Vireo, Burrowing Owl, Desert Pupfish, Santa Ana Sucker, Mojave Ground Squirrel, San Bernardino Kangaroo Rat, and Desert Tortoise. Serves as Lead Field Monitor for biological compliance monitor for large-scale construction projects.

Forestry Technician, ACRT, Inc.: June 2004 – July 2004

Performed environmental consultation with private landowners and homeowner's association concerning forestry management and fuels modification. This work entails the following: flagging project boundaries, mapping surveyed areas, identifying archeological sites, wildlife habitat, watercourses, and other pertinent landscape features, tree species identification, marking dead and dying tree stands, and organizing data inventory.

Forestry Technician, Mason Bruce and Gerard, Inc.: August 2003 – April 2004

Mr. Kajtaniak led a crew of field technicians surveying bark beetle infested trees throughout the San Bernardino National Forest. Some of my work duties included: cruise checking crew members for quality control, identifying infected trees, organizing and integrating data, and mapping surveyed areas. Mr. Kajtaniak also coordinated with logging crews directing tree removal within residential areas and private timberlands.

Fisheries Biologist, Pacific States Marine Fisheries Commission: August 2001 – April 2003

Mr. Kajtaniak was an integral part of a multi-agency collaborative team conducting watershed assessments on river systems in Northern California. He performed in-field and academic research, analytical analysis of historic and current field data and previous studies, and extensive technical writing and editing watershed assessment reports.

- Developed recommendations for habitat improvement, future monitoring studies, land-use activities, and the overall advancement of salmonid species.

- Participation in frequent multi-agency meetings and conferences conducting technical analysis and development of watershed assessment reports.
- Collected and integrated habitat inventory data, electro-fishing data, and other pertinent fisheries and watershed information.

Fisheries, Botanical, and Forestry Technician – Natural Resources Management Corp.: April 2000 – August 2001

Utilized multidimensional skills to perform field and office duties of these positions. Primarily I lead fisheries and botanical crews on species surveys of private timber and rangelands; completed fish habitat and plant species reports; participation in the development of timber harvest plans. Completion of these tasks included the following:

- Mapped fisheries information (fish distribution by species on Pacific Lumber Corporation basemaps, identified possible mitigation barriers, and access points for further field research).
- Proposed proper mitigation in accordance with state laws for "threatened" species of salmonids under the federal Endangered Species Act.
- Deciphered aerial photos to determine vegetation landscapes.
- Rare plant species field surveys and habitat assessments on timber harvest plans and appurtenant roads.
- Wetland identification.
- Determined slopes, possible methods of timber extraction, and mapped completed surveyed areas.

AmeriCorps Volunteer – Watershed Stewards Project: October 1997 – August 1999

As a member of the Watershed Steward's Project I conducted research and monitoring protocols pertaining to Pacific salmon species, created and implemented restoration projects throughout northern California, and integrated educational programs in various classroom and community settings. Some of my many tasks performed included:

- Wrote and reviewed project and site plans including required federal and state permits.
- Supervised California Conservation Corps crews and Humboldt State student volunteers on habitat restoration projects throughout years of service with AmeriCorps.
- Implemented watershed improvement projects such as riparian re-vegetation, stream bank stabilization using bio-engineering techniques, and cattle exclusion fencing.
- Conducted road / upslope watershed sediment delivery assessments following the U.S. Forest Service protocol.

Land Management Crew Member, Toledo Metroparks: June 1995 - September 1997

Performed ecological restoration of different ecosystems (prairie, oak savannah, oak woodland, and sand dunes) in the Oak Openings region to improve populations of Threatened and Endangered species and promote genetic diversity of native species of flora and fauna. Helped propose habitat management plans and implemented these plans through various projects. Field work included: determining range, distribution, and abundance of Threatened and Endangered species of plants, continuous inventorying

and monitoring of local flora, seed collection, prescribed burns, and non-native species eradication.

Grants and Publications

Fisheries Grants 1998-1999

Acquired over \$40,000 in grants funding California Conservation Corps fisheries restoration projects and work tools for California Department of Fish and Game's volunteer fisheries program.

Cannata,S. and **D.M. Kajtaniak** (2006). Redwood Creek watershed synthesis report, Assessments of anadromous salmonids and stream habitat conditions of the Redwood Creek Basin. California Resources Agency and California Environmental Protection Agency; Sacramento, California.

Nathan T. Moorhatch

Wildlife Biologist/Herpetologist

Professional summary

Mr. Moorhatch has over 15 years consulting experience performing a wide variety of biological surveys throughout California, spanning from the Sacramento Valley to the International Border. He has had a life-long interest in general biology, and obtained a degree in Zoology from the California State Polytechnic University at Pomona under Dr. Glen Stewart in 1991. Mr. Moorhatch has conducted biological and environmental assessments at project sites in Solano, Monterey, Tulare, Fresno, Inyo, Kern, Kings, Ventura, Santa Barbara, Los Angeles, San Bernardino, Orange, Riverside, San Diego, and Imperial counties in California, as well as in Nevada. He has conducted the following types of assessments: rare plant species surveys; plant species inventory and vegetation mapping; revegetation plan preparation and implementation; general wildlife species surveys; focused sensitive wildlife species surveys and habitat quality assessments; sensitive wildlife species monitoring and relocations; small mammal trapping studies; Corps Section 404 waters/wetlands delineation and jurisdictional determination; CDFG 1601-3 stream and riparian habitat assessments and jurisdictional determinations; and preparation of biological assessment reports and sections of EIS and EIR documents for federal, state, and/or county agency CEQA and NEPA environmental review. Professional experience includes serving as a lead biologist, supervising and managing biological compliance monitoring and sensitive species survey efforts for a variety of large-scale projects.

Mr. Moorhatch has been authorized by the U.S. Fish and Wildlife Service to independently perform focused surveys for the federally endangered Delhi Sands Flower-loving Fly, Quino Checkerspot Butterfly, and the federally threatened California Gnatcatcher. Mr. Moorhatch has also been authorized to assist other permitted biologists with focused surveys for the Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, Pacific Pocket Mouse, Mojave Ground Squirrel, California Red-legged Frog, Least Bell's Vireo (nest searches), and Southwestern Willow Flycatcher (nest searches and surveys). He has also received both federal and state agency authorization for specific projects to capture, handle, process, and relocate the Desert Tortoise; and to capture, handle, and release the California Red-legged Frog.

Mr. Moorhatch has extensive experience conducting herpetological studies including focused surveys and monitoring of endangered species. He has performed surveys for a wide variety of sensitive amphibians and reptiles including: California Tiger Salamander, Tehachapi Slender Salamander, Large-blotched Ensatina, Arroyo Toad, California Red-legged Frog, Mountain Yellow-legged Frog, Western Spadefoot, Southwestern Pond Turtle, Desert Tortoise, Switak's Barefoot Gecko, Blunt-nosed Leopard Lizard, San Diego Horned Lizard, Coachella Valley Fringe-toed Lizard, Flat-tailed Horned Lizard, Orange-throated Whiptail, Southern Rubber Boa, and Two-striped Garter Snake. He has a deep personal interest in general Herpetology, and has undertaken numerous forays in the field in search of both common and rare amphibian and reptile species in California, Nevada, Arizona, Utah, Texas, Kansas, Maryland, Virginia, Florida, Hawaii, Mexico (eight states including Distrito Federale, Puebla, Veracruz, Sinaloa, Nayarit, Baja California Norte, Quintana Roo, and Yucatan state), Costa Rica, Peru, British Columbia, Canada, and the United Kingdom.

Nathan T. Moorhatch

He also is an avid birder, and has assisted in conducting surveys for California Gnatcatcher, Least Bell's Vireo, Burrowing Owl, Le Conte's Thrasher, Snowy Plover, Least Tern, and various nesting raptor species in Riverside, Orange, Los Angeles, Kern, San Diego, and San Bernardino counties. Mr. Moorhatch has conducted Bird Air Strike Hazard (BASH) studies on the Edwards Air Force Base Main Base Flightline during 1998 and 1999, and participated in a base-wide bird survey utilizing point counts to determine distribution and abundance of bird species on EAFB. He has also conducted bird use surveys of several landfill sites in San Bernardino and Tulare Counties in support of BASH studies related to local airports. Mr. Moorhatch is a member of the American Birding Association and the Audubon Society. His personal interest in birds has led him on numerous field searches in California, Arizona, Utah, Texas, Kansas, Florida, Hawaii, Mexico (Districto Federale, Puebla, Veracruz, Sinaloa, Nayarit, Baja California Norte, Quintana Roo, and Yucatan state), Costa Rica, Peru, British Columbia, Canada, and the United Kingdom.

Mr. Moorhatch has conducted focused surveys for Delhi Sands Flower-loving Fly and Quino Checkerspot Butterfly; and has a Federal Endangered Species Permit [10(a)(1)(A)] for both of these insects. Mr. Moorhatch has also participated in "Fourth of July Butterfly Counts" sponsored by the North American Butterfly Association. He has a personal interest in Entomology and is a member of the Friends of the University of California, Riverside, Entomological Research Museum (FERM).

Mr. Moorhatch has assisted in trapping surveys for several sensitive small mammals including: San Bernardino Kangaroo Rat, Los Angeles Pocket Mouse, Tehachapi Pocket Mouse, and Short-nosed Kangaroo Rat. He has also participated in focused surveys for San Joaquin Kit Fox, San Joaquin Antelope Ground Squirrel, Mojave Ground Squirrel, and Peninsular Bighorn Sheep.

In addition to his experience with sensitive wildlife species, Mr. Moorhatch has conducted numerous surveys for sensitive plant species throughout California. He has conducted surveys for over 35 sensitive plant species, including limestone endemics, Big Bear Valley endemics, vernal pool species, and a wide variety of sensitive species in the San Joaquin Valley, Mojave and Colorado Deserts, and various coastal and inland valley habitats. Mr. Moorhatch has also assisted in the preparation of revegetation plans, and has conducted restoration/revegetation activities including site preparation, seeding/transplanting, and monitoring on Edwards Air Force Base. Additionally, he conducts general inventories of flora and fauna; and authors biological assessments and mitigation plans. Mr. Moorhatch also has a current California Department of Fish and Game Scientific Collector's Permit.

Professional Qualifications / Permits

California Department of Fish and Game Scientific Collectors Permit #801166-04

Federal Endangered Species Permit ("10a") for Quino Checkerspot Butterfly, #TE029414-1

Federal Endangered Species Permit ("10a") for Delhi Sands Flower-loving Fly, #TE029414-1

Federal Endangered Species Permit ("10a") for Coastal California Gnatcatcher, #TE785148-7

Authorized Individual for studies regarding the Desert Tortoise (Authorized to monitor, handle, and relocate desert tortoises when necessary for specific project implementation).

Education

B.S. Zoology (cum laude), California State Polytechnic University, Pomona, 1991

University of California, Riverside – Extension Course Work: Ornithology – A Field Study of Birds

Victor Valley Community College: Ecology of Costa Rica, 2001

Nathan T. Moorhatch

Location

Riverside, California

Seminars, Workshops, and Symposia

Desert Tortoise Council Symposium, 1992 - 1999

Desert Tortoise Council Field Techniques Workshop, 1992, 1994

Mojave Ground Squirrel "CHIEF" Workshop. 1992

Declining Amphibians in California I, San Diego Natural History Museum, 3/97.

Declining Amphibians in California II, San Diego Natural History Museum, 3/98.

Workshop on Year 2000 Draft Quino Checkerspot Butterfly Survey Protocol, Carlsbad, California, 1999.

Planning for Biodiversity: Bringing Research and Management Together. 2/29-3/2/00; Pomona, California.

Arroyo Toad Symposium (*Bufo californicus*): Natural History and Management Practices. 10/05/00; Marine Corps Air Station, Camp Pendleton, California.

Current Research on Herpetofauna of the Sonoran Desert II. 4/5-7/02; Tucson, Arizona.

Memberships

American Birding Association

Friends of the University of California, Riverside, Entomological Research Museum

Desert Tortoise Council

National Audubon Society

Southwestern Herpetologist's Society

Detailed Core Skills by Project

Domestic Water Development and Supply

Cadiz Land Company Inc. Exploratory Drilling and Proposed Water Line Surveys and Monitoring.

Conducted presence/absence surveys and monitoring for Desert Tortoise and sensitive plants during exploratory drilling and surveys for proposed water line system right-of-ways, Danby and Cadiz, Fenner Valley, San Bernardino County, California.

Coachella Valley Water District – Coachella Canal Realignment Surveys and Monitoring.

Conducted/coordinated presence/absence, clearance surveys, and monitoring for Desert Tortoise, Burrowing Owl, and other sensitive biological resources prior to, and during, construction/excavation of approximately 35 miles of new canal alignment.

Oil and Gas Development and Supply

Kramer Junction Line 6905 Expansion Project. Acted as an assistant Lead Biologist supervising a team of 30+ biologists and biological monitors for the installation and development of a 33-mile natural gas pipeline project in the Mojave Desert. Conducted general and focused (for Desert Tortoise, Burrowing Owl, and sensitive plant species) biological surveys; Desert Tortoise burrow excavation,

Nathan T. Moorhatch

artificial burrow construction, processing, and relocation; Burrowing Owl burrow excavation, artificial burrow construction, and passive relocation; mitigation monitoring; personnel awareness training, yucca and cacti transplantation, and vertical mulching; San Bernardino County; Southern California Gas Company.

All American Pipeline Project. Conducted general and focused biological surveys and mitigation monitoring for the Desert Tortoise for exploratory geotechnical drilling activities in support of the All American Pipeline Project; San Bernardino County; All American Pipeline Company.

Four Corners Pipeline Company (ARCO). Conducted Desert Tortoise Monitoring for two oil line leak repairs at Danby and Sheephole Pass, San Bernardino County, California.

Four Corners Pipeline Company (ARCO). Conducted Desert Tortoise Monitoring for anode bed installation, San Bernardino County, California.

Renewable Energy Resources

Victorville 2 Hybrid Power Project, ENSR, Victorville, CA. Conducted focused Desert Tortoise surveys, focused Burrowing Owl surveys, focused surveys for rare plants, focused trapping surveys for Mojave ground Squirrel, vegetation and sensitive species mapping, identification and delineation of jurisdictional water courses, and identifying potential mitigation strategies for a 400+ acre hybrid power plant site and associated transmission lines and pipeline easements. Regulatory agencies involved included California Energy Commission, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and California Department of Fish and Game.

Whitewater Wind Energy Conversion Systems. Acted as a Lead Biologist for the development, installation, and implementation of a wind energy park located in the San Gorgonio Pass area, on the northwestern outskirts of the Coachella Valley. Conducted general and focused (for Desert Tortoise, Burrowing Owl, and sensitive plant species) biological surveys; Desert Tortoise burrow excavation, artificial burrow construction, processing, and relocation; Burrowing Owl burrow excavation, artificial burrow construction, and passive relocation; mitigation monitoring; personnel awareness training for the life of the project; Shell Oil Corporation; Riverside County.

Cabazon Wind Energy Conversion Systems. Lead Biological manager for the development, installation, and implementation of a wind energy park located in the San Gorgonio Pass area. Conducted general and focused biological surveys (for Desert Tortoise, Burrowing Owl, and Coachella Valley Fringe-toed Lizard), mitigation monitoring, and personnel awareness training for the life of the project; Cannon Power; Riverside County.

Electrical Power

Otay Mesa Generating Plant. Conducted habitat assessments and focused surveys for the Quino Checkerspot Butterfly the proposed generation plant site and throughout the associated transmission line easements on Otay Mesa from the U.S./Mexican border north to Chula Vista; San Diego Gas and Electric Company; San Diego County.

Valley to Auld Electrical Substation and Transmission Line Upgrade Project. Conducted mitigation monitoring for the Valley to Auld transmission line and electrical substation upgrade project. Significant biological issues included the California Gnatcatcher, Burrowing Owl, Stephens' Kangaroo Rat, Quino Checkerspot Butterfly, Belding's Orange-throated Whiptail, San Diego Coast Horned Lizard, and Southwestern Pond Turtle; Southern California Edison Company; Riverside County.

U.S. Forest Service

Arroyo Toad Surveys. Conducted habitat assessments and focused surveys for the Arroyo Toad throughout drainage systems containing potentially suitable and historically occupied habitat within the San Bernardino National Forest (including San Jacinto Range).

Nathan T. Moorhatch

Mountain Yellow-legged Frog Surveys. Conducted habitat assessments and focused surveys for the Mountain Yellow-legged Frog throughout drainage systems in historically occupied habitat within the San Bernardino National Forest.

Transportation and Infrastructure

State Highway 138. Conducted habitat assessments and focused protocol surveys for the Arroyo Toad for the proposed realignment of SR 138 between Interstate 15 and State Highway 18; San Bernardino County; Caltrans.

Interstate 215 Seismic Retrofit Project. Conducted habitat assessments and focused protocol surveys for the Arroyo Toad for the proposed Interstate 215 seismic retrofit project in the City of Riverside; Riverside County; Caltrans.

Interstate 15 Bridge Widening Project. Conducted habitat assessments and focused protocol surveys for the Arroyo Toad for the proposed Interstate 15 Bridge Widening Project over the Mojave River in the City of Victorville; San Bernardino County; Caltrans.

State Highway 18 Seismic Retrofit Project. Conducted habitat assessments and focused protocol surveys for the Arroyo Toad for the proposed seismic retrofitting of SR 18 at the crossing of the Mojave River in the town of Apple Valley; San Bernardino County; Caltrans.

State Highway 79/371 Interchange Realignment Project. Conducted habitat assessments and focused protocol surveys for the Quino Checkerspot Butterfly for the proposed SR 79/371 Interchange Realignment Project in the community of Aguanga; Riverside County; Caltrans.

Big Bear Dam/State Highway 18 Improvement Project. Conducted habitat assessments and focused protocol surveys for the Mountain Yellow-legged Frog for the proposed improvements of SR 18 at the crossing of the dam at the southwest end of Big Bear Lake in the San Bernardino Mountains; San Bernardino County; Caltrans.

Opah Ditch Mining Reclamation Project. Conducted focused protocol surveys for the Desert Tortoise for the proposed Opah Ditch Mining Reclamation Project located south of Baker; San Bernardino County; Caltrans.

Department of Defense

Edwards AFB Main Base Flightline BASH study. Conducted Bird Air Strike Hazard (BASH) studies on the EAFB Main Base Flightline during 1998 and 1999. Responsibilities included seasonal field inventories of bird species diversity and population size, coordination and management of experimental use of falconry as method to deter bird use, and preparation of documentation summarizing the effectiveness of bird control measures.

Edwards AFB Base-wide Bird Inventory. Base-wide surveys utilizing point counts to determine distribution and abundance of bird species on EAFB, 2000 to 2002.

Edwards AFB Base-wide Amphibian and Reptile Inventory. Conducted base-wide surveys to determine distribution and diversity of amphibian and reptile species on EAFB, 2004.

Edwards AFB Desert Tortoise Monitoring. Conducted Desert Tortoise presence/absence surveys and monitoring throughout EAFB for a variety of projects including: Historic Homestead Well destruction, Monitoring Well Drilling, site restoration, and Joshua Tree transplantation.

Edwards Air Force Base Revegetation Efforts. Has participated in revegetation/habitat rehabilitation on over 270 acres of desert scrub on Edwards AFB. These largely successful efforts have incorporated a wide-variety of seeding methodologies including imprinting and hand seeding. Efforts have also

Nathan T. Moorhatch

included planting of nursery stock, transplanting of numerous desert shrub species, Joshua tree transplanting, and long-term viability monitoring.

Nellis AFB Desert Tortoise and Rare Plant Survey. Conducted presence/absence surveys for Desert Tortoise and rare plants for proposed road construction and residential expansion projects.

Travis AFB Vernal Pool and Rare Plant Inventory. Conducted field surveys to inventory vernal pools and rare plant species on Travis AFB. Responsibilities included identification and mapping of vernal pools and rare plants (including the federal Endangered Contra Costa Goldfields *Lasthenia conjugens*).

Vandenberg AFB Missile Transport Bridge Construction Monitoring. Conducted preconstruction surveys and relocation of California Red-legged Frog (*Rana aurora draytonii*) and Unarmored Threespine Stickleback (*Gasterosteus aculeatus williamsoni*), as well as long-term monitoring of sensitive biological resources during construction of a new missile transport bridge over the San Antonio Creek drainage, Vandenberg AFB, Santa Barbara County, California.

March ARB: Stephen's Kangaroo Rat Monitoring. Monitored a hazardous materials exploratory effort on a former weapons storage facility. Activities were monitored to ensure no adverse impacts to the endangered Stephen's Kangaroo Rat were incurred.

Camp Pendleton MCB – Bullfrog Eradication. Participated in a bullfrog eradication effort to protect endangered Arroyo Toad (*Bufo californicus*) populations on the base.

29 Palms MCB – Desert Tortoise Surveys. Conducted presence/absence surveys for Desert Tortoise and sensitive biological resources on selected firing range areas on 29 Palms MCB.

Employment history

Wildlife Biologist/Ecologist, AMEC Earth and Environmental, Inc. November 2000-present. Conducts field inventories of fauna and flora, performs literature reviews, prepares biological assessment reports emphasizing impact analysis, mitigation measures, and mitigation monitoring. Specializes in herpetological and entomological field studies, and also conducts ornithological field studies. Authorized by U.S. Fish and Wildlife Service to conduct focused surveys for the following Endangered or Threatened species: Quino Checkerspot Butterfly, Delhi Sands Flower-loving Fly, and Coastal California Gnatcatcher.

Wildlife Biologist/Herpetologist, Ogden Environmental and Energy Services, March 2000-November 2000.

Wildlife Biologist/Herpetologist, Tierra Madre Consultants, Inc., August 1999-March 2000.

Wildlife Biologist/Herpetologist, Earth Tech, August 1997 – August 1999

Assistant-Associate Biologist, Lilburn Corporation, November 1991 - August 1997

Nathan T. Moorhatch

Publications

Beaman, K.R., D. Goodward, N. Moorhatch, and C.W. Brown. 2005. Geographic Distribution: *Hemidactylus turcicus*. Herpetological Review 36(1), p.79.

Languages

Spanish - Fair



Stephen J. Myers

Wildlife Biologist/Ornithologist

Professional summary

Mr. Myers has extensive experience in the visual and auditory field identification of birds. He has spent thousands of hours birding in California, Arizona, Texas, the Pacific Northwest, Costa Rica, Belize, Guatemala, Peru, Bolivia, and Mexico since 1979. Since 1988 he has possessed a federal bird banding permit and has been involved in mist netting and other capture techniques. He is authorized by the USFWS to perform focused surveys for the federally threatened California Gnatcatcher, and recently conducted research on the life history of the California Gnatcatcher, color banding this species in western Riverside County. Mr. Myers is also permitted for the Southwestern Willow Flycatcher and Least Bell's Vireo. He has performed research for the University of California (Riverside), U.S. Forest Service, Los Angeles County Museum of Natural History, and the San Bernardino County Museum. He formerly conducted an annual censusing route for the U.S. Fish and Wildlife Service Breeding Bird Survey and has participated in the Los Angeles, San Bernardino and Riverside County Breeding Bird Atlases since 1987. He has participated in the National Audubon Society Christmas Bird Count for 27 years, serving as compiler for two count locations. Mr. Myers is working on a comprehensive paper on the status and distribution of the avifauna of the Mojave River, California. Additional research projects have been published in *Western Birds*, *Southwest Naturalist* and *Herpetological Review*.

Mr. Myers possesses a Section 10(a)1(A) Permit and a Memorandum of Understanding with California Department of Fish and Game to perform focused surveys and trapping for the Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, and Mohave Ground Squirrel. He has performed nearly 30,000 trap-nights (and days) during small mammal trapping surveys in southern California. He also performs surveys for the Desert Tortoise, Arroyo Toad, Red-legged Frog, Mountain Yellow-legged Frog, Coachella Valley Fringe-toed Lizard, and other herpetofauna.

Mr. Myers also surveys for sensitive butterfly species, and participates in "Fourth of July Butterfly Counts," sponsored by the North American Butterfly Association. He is a co-compiler of a count in the San Bernardino Mountains.

Mr. Myers performs rare plant surveys, including San Bernardino Mountains "limestone endemics," Santa Ana River Woolly-star, and Slender-horned Spineflower. He prepares restoration and revegetation plans, including a revegetation plan for the 70-mile long Morongo Basin Pipeline Project.

Mr. Myers is a part-time instructor at Victor Valley College in Victorville, California and at the University of California, Riverside Extension, where he teaches ornithology and bird banding classes, respectively. He is a regular instructor on field classes to Peru, Bolivia, Costa Rica, Belize, and Guatemala.

Professional qualifications

California Department of Fish and Game Scientific Collectors Permit

Stephen J. Myers

Federal Bird Banding Permit #23035

Federal Endangered Species Permit ("10a") for California Gnatcatcher, #TE804203-7

Federal Endangered Species Permit for Southwestern Willow Flycatcher, #TE804203-7

Federal Endangered Species Permit for Least Bell's Vireo, #TE-804203-7

Federal Endangered Species Permit for Stephens' Kangaroo Rat, #TE804203-7

Federal Endangered Species Permit for San Bernardino Kangaroo Rat, #TE804203-7

Federal Endangered Species Permit for Quino Checkerspot Butterfly, #TE804203-7

California Department of Fish and Game MOU for California Black Rail, Yuma Clapper Rail, Western Yellow-billed Cuckoo, Elf Owl, Gila Woodpecker, Willow Flycatcher, Least Bell's Vireo, California Gnatcatcher, Mohave Ground Squirrel, Palm Springs Pocket Mouse, Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, and Mojave River Vole.

Education

Victor Valley College, Victorville, CA (1986-1987)

Mount San Jacinto College, San Jacinto, CA (1974)

California State University, Long Beach, CA (1973)

Location

Riverside, California, USA

Seminars, Workshops, and Symposia

"Seminars in Ornithology," Laboratory of Ornithology, Cornell University, 1983.

"California Gnatcatcher Workshop," The Wildlife Society, 1991.

"*Empidonax traillii extimus* in California: The Willow Flycatcher Workshop," San Diego Museum of Natural History, 1995.

"The California Gnatcatcher Symposium," University of California at Riverside, 1995.

"Effects of Noise on Passerines," U.S. Navy & Marine Corps Symposium, Hubbs-Sea World Research Institute, 1997.

"Quino Checkerspot Workshop," Riverside, California, 1998.

"Symposium on Quino Checkerspot Butterfly," Chula Vista, California, 1999.

"Planning for Biodiversity: Bringing Research and Management Together," seminar sponsored by the U.S. Forest Service and the USGS Western Ecological Research Center, 2000.

"Arroyo Toad Symposium (*Bufo californicus*): Natural History and Management Practices," Marine Corps Air Station, Camp Pendleton, California, 2000.

"Ecology and Conservation of the Willow Flycatcher," Arizona State University, Tempe, AZ, 2000.

"Burrowing Owl Symposium," Western Section of the Wildlife Society, Sacramento, CA, 2003.

Stephen J. Myers

Memberships

American Ornithologists' Union

Cooper Ornithological Society

Association of Field Ornithologists

Western Field Ornithologists

Western Bird Banding Association

American Birding Association

American Society of Mammalogists

Western Section of the Wildlife Society

California Native Plant Society

Employment history

Wildlife Biologist/Ornithologist, AMEC Earth and Environmental, Inc. November 2000-present.

Conducts field inventories of fauna and flora, performs literature reviews, prepares biological assessment reports emphasizing impact analysis, mitigation measures, and mitigation monitoring. Specializes in ornithological field studies including breeding bird and raptor surveys, and banding studies. Authorized by U.S. Fish and Wildlife Service to conduct focused surveys for the following Endangered and Threatened species: California Gnatcatcher, Southwestern Willow Flycatcher, Quino Checkerspot Butterfly, Stephens' Kangaroo Rat, and San Bernardino Kangaroo Rat. Also authorized to monitor the nests of the Least Bell's Vireo. Performs focused trapping surveys for the Mohave Ground Squirrel, under authorization of a MOU with California Department of Fish and Game.

Field Experience with the California Gnatcatcher. Since 1988, has performed focused surveys at many sites in western Riverside and San Bernardino counties. In 1990, conducted focused surveys for California Gnatcatchers for Metropolitan Water District Eastside Reservoir Study. From 1992 to 1995 assisted in a U.S. Fish and Wildlife Service life history study of the California Gnatcatcher in western Riverside County.

Field Experience with the Least Bell's Vireo and Southwestern Willow Flycatcher. Has performed numerous focused surveys for Least Bell's Vireos and/or Southwestern Willow Flycatchers in Riverside, San Bernardino, and Orange counties, including the River Road Bridge project along the Santa Ana River near Corona, 1996-2006. In 1996 assisted with a study of nesting Least Bell's Vireo behavior in response to model airplane noise at Hidden Valley Wildlife Area in Riverside. In 1999 conducted surveys for Southwestern Willow Flycatcher in several drainages of the Angeles National Forest.

Field Experience with the Quino Checkerspot Butterfly. In 1998 - 2004 performed focused surveys at several sites in Riverside and San Diego counties.

Field Experience with Stephens' and San Bernardino Kangaroo Rats. Has conducted trapping surveys for the Stephens' Kangaroo Rat in western Riverside County Since 1995, and for the San Bernardino Kangaroo Rat in western San Bernardino County since 1998. Also has extensive experience with many other small mammals in southern California, with almost 30,000 trap-nights.

Field Experience with the Desert Tortoise. Specialized desert tortoise experience under the authorization of Federal Section 7 Consultation and/or 10(a) permits, and state 2081 permits include: tortoise handling/relocation, burrow excavation and artificial burrow construction for Edwards AFB Leuhman Ridge Rocket Test Site (9/95), Morongo Basin Pipeline (6/93-1/94), and Sempra Line 6905, Kramer-

Stephen J. Myers

Adelanto Natural Gas Pipeline (10/01-5/02). Additional USFWS and CDFG desert tortoise handling authorization for Caltrans Highway 395 Passing Lane Construction and widening project for Highway 395 (12/98). Performed focused desert tortoise presence/absence surveys for 15 projects between 1988 and 2006.

Biology Instructor, Victor Valley Community College, Victorville, CA (part-time), 1998-present. Mr. Myers teaches a class in the identification and biology of the southern California birds, and serves as the ornithology instructor on regular natural history classes of Peru, Bolivia, Costa Rica, Guatemala, and Belize.

Natural Sciences Instructor, University of California, Riverside Extension, 2000-present. Teaches an introductory class in bird banding.

Wildlife Biologist/Ornithologist, Ogden Environmental and Energy Services, March 2000-November 2000. Ogden was purchased by AMEC Earth and Environmental.

Wildlife Biologist/Ornithologist, Tierra Madre Consultants, Inc., 1987-March 2000.

Ornithological Field Researcher, University of California, Riverside, Cooperative Extension.

Biological Technician, San Bernardino National Forest, United States Forest Service, 1987-88.

Field Biologist, Los Angeles County Museum of Natural History, 1986-87.

Publications

Myers, S.J. 1993. Mountain Chickadees nest in desert riparian forest. *Western Birds* 24:103-104.

Myers, S.J. 2000. Checklist of the birds of Mojave Narrows Regional Park and the Victor Valley. Mojave Desert Bird Club, Apple Valley, CA.

Myers, S.J. In prep. California Horned Lark (*Eremophila alpestris actia*). Species account for the California Department of Fish and Game's "Bird Species of Special Concern in California."

Myers, S.J. In prep. Vermilion Flycatcher (*Pyrocephalus rubinus*). Species account for the California Department of Fish and Game's "Bird Species of Special Concern in California."

Myers, S.J. and B. Deppe. In prep. Avifauna of the Mojave River, California.

Myers, S.J. and J.D. Edwards. 1994. Checklist of the birds of Silverwood Lake. Mojave River Natural History Assoc., Hesperia, CA.

Patten, M.A. and S.J. Myers. 1992. Geographic distribution: *Bufo microscaphus californicus*. *Herpetol. Review* 23: 122.

Patten, M.A., S.J. Myers, C. McGaugh, J.R. Easton, and R. A. Erickson. 1998. *Perognathus longimembris* (Coues 1875) Little Pocket Mouse, In North American rodents. Status survey and conservation action plan (Hafner, D.J., E. Yensen, and G.L. Kirkland (compilers and editors). IUCN/SSC Rodent Specialist Group, Int. Union Conserv. Nature and Nat. Resources, Gland, Switzerland and Cambridge, U.K.

Stephen J. Myers

White, S. D. and S.J. Myers. 1997. Evidence of *Astragalus lentiginosus* var. *borreganus* growing from a heteromyid seed cache. *Southwestern Naturalist* 42:329-330.

Wilcox, M.D., S.J. Myers, K.R. Beaman and R.L. McKernan. 1995. Geographic distribution: *Xantusia h. henshawi*. *Herpetol. Review* 23: 122.



Nicholas Ricono

Project Manager

Professional summary

Mr. Ricono presently serves as biologist and project manager in AMEC's San Diego, California office. His primary responsibilities include project management, the assessment of natural resources and the acquisition of federal, state, and local permits. His duties include the delineation of wetlands and other waters; conducting habitat assessments, biological surveys, and biological monitoring; developing mitigation strategies; and production of documents in support of local, state, and federal regulations including the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Clean Water Act (CWA), Endangered Species Act (ESA), California State Fish and Game Code (CSFGC), among others.

Professional qualifications

Certifications

Basic Wetland Delineation, Wetland Training Institute, February 2001

OSHA 40-Hour Hazardous Waste Operations (HAZWOPER) Training (29 CFR 1910.120), Initial Certification **no year**, Annual 8-Hour Refresher Training, **no year**

OSHA 8-Hour HAZWOPER Refresher Training, **year?**

Education

MS, Biology, Texas A&M University-Corpus Christi, 1999

BS, Biology, Creighton University, 1994

Additional training

Wetlands and Wildlife: Making the Connection, Joint Conference of the Western Chapter of the Society of Wetland Scientists and the Western Section of The Wildlife Society, April 2005

Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop, The Desert Tortoise Council, November 2004

California Tiger Salamander: Ecology and Survey Techniques Workshop, The Wildlife Society-Western Section, October 2003

Identification and Ecology of Sensitive Amphibians and Reptiles of Southern California, The Wildlife Society - Western Section, May 2003

Successful CEQA Compliance, UCLA Extension, November 2002

Federal Wetland Regulation, Wetland Training Institute, March 2002

Environmental Impact Analysis, Southwest Texas State University, Spring 2001

Memberships

Association of Environmental Professionals, Orange County Chapter

Society of Wetland Scientists

Society for Ecological Restoration

The National Audubon Society

The Wildlife Society

Ducks Unlimited

Location

San Diego, California

Languages

English (native)

Summary of core skills

Areas of expertise

- Regulatory guidance
- Preparation of Biological Assessments
- Wetland delineation and construction
- Native plant community restoration
- Biological surveys and monitoring
- Aquatic ecology and water quality assessment

Details by project

Victorville Power Plant BRAR, ENSR International, Victorville, California. (2007, \$304,300, 6554000228) Delineated jurisdictional waters along linear segments of a proposed power plant construction project using methods approved by the U.S. Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG). Produced a report in support of environmental documentation for project approval from the California Public Utilities Commission. Delineation used by client to avoid impacts to jurisdictional waters in order to avoid permitting under Section 404/401 of the CWA and Section 1602 of the CSFGS

Loretta Street Biological Monitoring, City of Oceanside, California. (2007, \$9,967, 6151002000) Project manager for project involving the use of Horizontal Directional Drilling (HDD) procedures to place a pipeline under the San Luis Rey River in Oceanside, California. The HDD was approximately 2,500 feet in length and required the removal of riparian and coastal sage scrub vegetation in order to effectively track the drill head. Conducted pre-construction surveys for sensitive plant and bird species and monitored crew members for the avoidance and minimization of vegetation removal along the bore path.

Brodiaea Mitigation Program, SFPP, L.P. Camp Pendleton Habitat Restoration Project, Camp Pendleton, CA. (2007, \$50,000, 317408100, Contract No.: 01CG-20-314-ORG) Project manager in charge of developing and implementing a research and mitigation program to offset the thread-leaved brodiaea (*Brodiaea filifolia*) impacts associated with the Kinder Morgan Camp Pendleton pipeline project. In charge of gaining approval and implementing a mitigation program that includes a soil survey of known Brodiaea populations in order to provide information to be used during future Brodiaea mitigation projects to optimize species recovery.

Regulatory guidance

CEQA Document Production, Orange County Integrated Waste Management Department, Orange County, California. Produced Biological Section of Initial Study in support of Mitigated Negative Declaration for the construction of a stilling basin within a wastewater channel at the Prima Desecha Landfill. Compiled biological resource information from protocol level surveys for sensitive species into the document in order to assess impacts to sensitive riparian habitat and provide methods for mitigating those impacts.

CEQA Document Production and Permitting, Sunol Valley Golf Course, Alameda County, California. Produced Initial Study in support of Mitigated Negative Declaration for development and restructuring of irrigation ponds at the golf course. Produced Wetland Delineation Report, Biological Assessment, and Habitat Mitigation and Monitoring Plan for the project in support of permitting requirements. Filed for permits under Section 404 and 401 of the

CWA, Section 1600 of the State Fish and Game Code (SFGC). Project required consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA.

Permitting Pipeline Maintenance Operations in Coastal Wetlands, Kinder Morgan Energy Partners (KMEP), Contra Costa, Solano, Yolo Counties, California. Conducted field assessment and produced permitting documentation for 75 sites along a 60-mile petroleum pipeline scheduled for maintenance. The pipeline routed beneath the Carquinez Strait and through the Suisun Marsh containing sensitive wetlands and endangered species habitat. The project required permitting under Section 404 and 401 of the CWA, Section 1600 of the SFGC, and Consultation with USFWS under Section 7 of the ESA, as well as requiring a waiver from the San Francisco Bay Conservation and Development Commission for maintenance activities within the Suisun Marsh.

CEQA Document Production and Permitting Fiber Optic Line Placement Near Coastal Wetlands, Level (3) Communications (Level (3)), Santa Barbara County, California. Project involved filing for amendment to Mitigated Negative Declaration for fiber optic line construction in wetland habitat within Santa Barbara County. Included a public meeting and County approval for the amendment. Produced Wetland Delineation Reports and Biological Assessments in support of CEQA documents and permitting. Included wetland delineation using Corps of Engineers and Cowardin methods used by the California Department of Fish and Game (CDFG) and the California Coastal Commission (CCC). Obtained 404 permits under Nationwide Permit 12 and Streambed Alteration Agreements. Also included development of Horizontal Directional Drilling (HDD) Plans, Frac-Out Contingency Plans, Stormwater Pollution Prevention Plans (SWPPP), Spill Prevention Control and Countermeasure (SPCC) Plans, Revegetation Plans, and Mitigation and Monitoring Plans.

Permitting Fiber Optic Line Placement, Level (3), Vandenberg Air Force Base, California. Produced Biological Assessment in support of permits including the Air Force Environmental Impact Analysis Process (AF Form 813) to permit open trench and HDD operations within Vandenberg Air Force Base. The project was designed to place fiber optic line beneath two river systems including the Santa Ynez River and San Antonio Creek. Obtained 404 permit under Nationwide Permit 33 and Streambed Alteration Agreements. Involved Section 7 Consultation with USFWS. Also included development of HDD Plans, Frac-Out Contingency Plans, SWPPP, SPCC Plans, Revegetation Plans, and Mitigation and Monitoring Plans.

Permitting Pipeline Relocation and Stream Restoration at Codornices Creek, KMEP, Contra Costa County, California. Conducted field assessment and produced permitting documentation for relocating two 1000-foot pipeline segments beneath Codornices Creek near the City of Albany. The project required permitting under Section 404 and 401 of the CWA, Section 1600 of the SFGC, and Consultation with NOAA under Section 7 of the ESA.

Permitting Pipeline Protection in Cajon Pass and the San Geronio Pass, KMEP, San Bernardino and Riverside Counties, California. Conducted biological resource assessments and produced permitting documentation at multiple locations along three pipelines that were exposed during severe flood events in the winter of 2004/2005. Engineered designs included relocating sections of pipe away from seasonal drainages and construction of a variety of structures that would provide protection in existing locations.

Section 404 Permitting, Confidential Client, Louisiana. Provided technical assistance on Section 404/401 requirements for permitting a remediation system at a Resource Conservation and Recovery Act facility that involved the placement of a retaining wall and fill material within a river system in southern Louisiana.

Section 10 (a)(1)(b) Permitting, KMEP, San Joaquin County, California. Produced an Environmental Assessment and a Habitat Conservation Plan, pursuant to Section 10 (a)(1)(b) of the ESA, for potential impacts to vernal pool tadpole shrimp (*Lepidurus packardii*), longhorn fairy shrimp (*Branchinecta longiantennae*), and vernal pool fairy shrimp (*Branchinecta lynchi*). Potential impact related to anomaly inspection of petroleum pipeline in vernal pool habitat.

Stormwater Pollution Prevention, Sempra Energy, California. Produced SWPPPs for linear and non-linear utility construction projects throughout California to comply with federal and state

requirements under the CWA. Included filing of Notice of Intent, production of SWPPP, training of construction crews in use of Best Management Practices, and facility inspection before, during, and after storm events.

CEQA document production, Pacific Gas and Electric, San Joaquin County, California.

Developed water quality section of document produced to meet Federal Energy Regulatory Commission and CEQA guidelines for a natural gas pipeline through the delta region of the San Joaquin Valley in Central California.

Section 404 Permitting, PNM, Albuquerque, New Mexico. Provided technical assistance on Section 404/401 and state requirements for permitting a natural gas pipeline in northern New Mexico.

Section 404 Permitting, Confidential Client, El Paso, Texas. Provided technical assistance on proposed housing development being denied Section 401 certification because of significant impacts to arroyo systems in the Franklin Mountains. Conducted meetings with agency personnel and coordinated with design engineers on project modifications to minimize project impacts. Negotiated compensatory mitigation for unavoidable impacts.

Natural resource assessment

Natural Resource Assessment, Conoco Phillips, Contra Costa County, California.

Assessed biological resources on a 470 acre property proposed for development near the city of Rodeo. Biological Constraints Analysis was produced to determine project viability based on the presence of listed species and sensitive habitats.

Natural Resource Assessment, Presidio in the Pines, Coconino County, Arizona.

Assessed biological resources on a 250 acre property proposed for development near the city of Flagstaff. Included informal consultation with the USFWS on potential for occurrence of Mexican spotted owl (*Strix occidentalis lucida*).

Natural Resource Assessment, Private Land Owner, Riverside County, California.

Assessed biological resources on a 5-acre property for which the land owner was requesting a grading permit for a single family home. Conducted habitat assessment in support of CEQA clearance for development. Consulted Western Riverside County Multi Species Habitat Conservation Plan (MSHCP) for impacts and mitigation requirements in the appropriate conservation area.

Natural Resource Assessment, San Timoteo Landfill, San Bernardino County, California.

Assessed biological resources at the San Timoteo Landfill for expansion of access routes through undisturbed areas. Roads were to be cut to allow heavy equipment into areas to conduct geological studies for a proposed expansion of the landfill. Assessed habitat for San Bernardino kangaroo rat (*Dipodomys merriami parvus*), California coastal gnatcatcher (*Poliophtila californica californica*), and Nevin's barberry (*Berberis nevinii*). Guided routes through non-native grasslands to minimize impact to native habitats.

Natural Resource Assessment, Black Hills, Kern County, California. Assessed biological resources on a 60-acre property proposed for development of 200-Mega Watt power generating facility. Assessed habitat for blunt-nosed leopard lizard (*Gambelia sila*), giant kangaroo rat (*Dipodomys ingens*), San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), and San Joaquin kit fox (*Vulpes macrotis mutica*). Applied habitat assessment information to biological section of a CEQA document.

Natural Resource Assessment, La Quinta Family Apartments, L.P., Riverside County, California. Assessed biological resources on an 11-acre plot of land intended for residential development in La Quinta, California. Performed preliminary habitat assessment and assessed potential for impact to sensitive species on aeolean sand dune habitat common to the Coachella Valley. Coordinated impact assessment and mitigation strategies with the Coachella Valley MSHCP, the City Planning Department, and resource agencies.

Natural Resource Assessment, City of Stockton., San Joaquin County, California.

Assessed biological resources along Pershing Avenue in a heavily urbanized area of Stockton,

California. Street widening project involved removal of vegetation in planter strips and the replacement of a bridge over Smith Canal. Report used in support of CEQA documentation.

Natural Resource Assessment, Lancar Development Inc., Placer County, California.

Assessed biological resources on a 48-acre plot of land intended for residential development near Loomis, California. Performed preliminary habitat assessment, assessed potential for impact to sensitive species and determined jurisdictional status of waters found on the property.

Natural Resource Assessment, Georgia Pacific, Mendocino County, California. Assessed biological resources on a 500-acre saw mill facility along the coast near Fort Bragg, California. Performed preliminary habitat assessment, assessed potential for impact to sensitive species and determined jurisdictional status of several industrial ponds on the facility. Conducted formal delineation using Corps of Engineers and Cowardin methods in support of future development activities on the facility.

Natural Resource Assessment, KMEP, San Diego County, California. Examined potential impacts to biological resources surrounding a pipeline facility due to a release of jet fuel near a creek. Release occurred within Miramar Naval Air Station boundaries. Sensitive species and natural communities were known to occur near the project area. Provided recommendations for limiting the potential for significant impact as a result of the release and subsequent cleanup operations.

Natural Resource Assessment, KMEP, Fresno County, California. Assessed biological resources in the vicinity of a petroleum storage facility near Fresno, California. Required for CEQA compliance in the construction of an 80,000 barrel diesel storage tank.

Natural Resource Assessment, Burlington Northern Santa Fe Railway (BNSF), Contra Costa County, California. Assessed biological resources in the vicinity of a 1,600 foot railroad bridge near the city of Martinez. Examined potential impacts to sensitive species and habitats that may result from conducting general maintenance on the bridge. Provided recommendations for limiting the potential for significant impact. Performed pre-construction investigations for sensitive species including nesting migratory birds.

Natural Resource Assessment, KMEP, Arizona. Conducted investigation of biological resources within the right-of-way on sections of a pipeline through southern Arizona due to proposed vegetation clearing activities. Areas inspected pass through Yuma, Pinal, Maricopa, and Cochise Counties. Performed preliminary habitat assessment and assessed potential for impact to state and federally listed species. Provided recommendations for limiting the potential for significant impact.

Natural Resource Assessment, BNSF, Merced County, California. Assessed biological resources in the vicinity of a public railroad crossing proposed for closure. Submitted a Proponents Environmental Assessment (PEA) document to the California Public Utilities Commission (CPUC) for project approval.

Natural Resource Assessment, BNSF, Merced County, California. Assessed biological resources near Deadman Creek for proposed bridge construction project. Applied for a Streambed Alteration Agreement with the CDFG and consulted with agency personnel on project design and impact limitations.

Natural Resource Assessment, BNSF, Madera County, California. Assessed biological resources in the vicinity of a public railroad crossing proposed for closure. Submitted a PEA document to the CPUC for project approval.

Natural Resource Assessment, Hanover Company, Madison County, Texas. Assessed natural resource issues for siting a natural gas processing plant near Madisonville, TX. Performed preliminary habitat assessment, assessed potential for state and federally listed species, and delineated jurisdictional waters of the U.S. proposed to act as receiving waters for stormwater discharge. Provided recommendations for limiting the potential for significant impact.

Wetland delineation and construction

Wetland Delineation, Black Hills, Humboldt County, California. Delineated jurisdictional waters including coastal wetlands using Corps of Engineers, and Cowardin methods employed by the CCC and the CDFG. The delineation was conducted using sub-meter Global Positioning System (GPS) equipment and used in constraints mapping for the expansion of an existing power generating facility in Humboldt County, California.

Wetland Delineation, Meridian Gold, Calaveras County, California. Delineated jurisdictional waters on the 2000-acre Royal Mountain King Mine site in Calaveras County. The operators proposed to construct stormwater retention basins along natural drainages downstream of existing overburden sites with the intention of using the natural filtering properties of wetland systems to improve water quality in downstream areas. Proposed impacts to jurisdictional waters caused by dam construction were determined using sub-meter GPS equipment and Geographic Information Systems (GIS) analysis.

Wetland Delineation, KMEP, Contra Costa, Solano, and Yolo Counties, California. Delineated jurisdictional waters at 75 sites along a petroleum pipeline scheduled for maintenance. The pipeline routed beneath the Carquinez Strain and through the Suisun Marsh within endangered species habitat. Produced documentation including Biological Resources Report and Jurisdictional Delineation Report to be submitted with permit applications.

Wetland Delineation, San Diego Gas and Electric, San Diego County, California. Delineated jurisdictional waters that were impacted by new road construction resulting from electrical grid maintenance operations during the November wildfires of 2003. Impacts to jurisdictional waters were delineated using sub-meter GPS equipment and mapped using GIS analysis.

Wetland Delineation, Level (3), Santa Barbara County, California. Delineated jurisdictional waters including wetlands using CDFG, Corps of Engineers, and CCC methods. Areas inspected were within the Union Pacific Railroad right-of way (ROW) bordering El Estero Marsh in Carpinteria, California. Performed as part of biological assessment related to the placement of a fiber-optic cable within the ROW.

Wetland Delineation, Sunol Valley Golf Course, Alameda County, California. Delineated jurisdictional waters including wetlands near Sunol Valley Golf Course in Alameda County using CDFG and Corps of Engineers methods as part of a project to re-designed a series of stormwater retention ponds to improve the ability to monitor irrigation water use in addition to stabilizing a petroleum pipeline that was being threatened by erosion. Produced permits and

Wetland Delineation, Georgia Pacific, Mendocino County, California. Delineated jurisdictional waters including wetlands on a decommissioned saw mill facility using CDFG, Corps of Engineers, and CCC methods. Facility included city storm drains, catchment basins, and several ponds created for industrial purposes that were historically constructed in both upland and wetland habitat.

Constructed Wetlands for Stormwater Treatment, Irvine Regional Water District (IRWD), Irvine, California. Provided technical assistance for IRWD project to design a series of constructed wetlands through a stormwater drainage system to treat effluent prior to reaching the Pacific Ocean. Wetlands were designed to maximize treatability while maintaining a healthy, native ecosystem to provide habitat for plants and wildlife including endangered species.

Wetland Delineation, BNSF, Brazos County, Texas. Delineated jurisdictional waters of the U.S. including wetlands adjacent to railroad tracks near Allenfarm, TX for proposed expansion project. Provided recommendations on Section 404 permitting including minimization measures to apply nationwide permit rather than individual permits. Also conducted a preliminary habitat assessment, and assessed potential for state and federal listed threatened and endangered species.

Wetland Delineation, Sithe Energies Inc., Lake County, Illinois. Delineated jurisdictional waters of the U.S. including wetlands on 19-acre property near Lake Michigan for siting an 860 MW gas fired power plant near Waukegan, Illinois. Property was adjacent to a state park with

confirmed endangered and threatened species and “high quality” wetlands. Coordinated Section 404 permitting through the U.S. Army Corps of Engineers-Chicago District and the Lake County Stormwater Management Council. Coordinated surveys for threatened and endangered species through the USFWS and the Illinois Department of Natural Resources.

Wetland Delineation, BNSF, Bell County, Texas. Delineated wetlands proposed expansion of railroad track system in Temple, TX. Delineated wetlands and waters of the U.S. and assessed potential for state and federal listed threatened and endangered species for project that included the filling and rerouting of approximately 4.5 acres of stormwater drainage ditch containing wetland vegetation. Provided recommendations on Section 404 permitting requirements and suggested mitigation measures to minimize potential impacts.

Wetland Construction, ENTRIX Inc., Corpus Christi, Texas. Augmented natural wetland conditions as part of wetland mitigation project on wind tidal flat area in Corpus Christi Bay, Texas. Project was designed to populate wind tidal flats with indigenous halophytic plant species by creating artificial hummocks to provide elevation from tidal influence, thereby allowing for natural plant distribution.

Wetland Construction, ENTRIX Inc., Corpus Christi, Texas. Transplanted smooth cord grass (*Spartina alterniflora*) to dredge spoil islands as part of a wetland mitigation project in Corpus Christi Bay. Constructed devices designed to protect transplanted species from natural forces such as wind and wave action.

Biological surveys and monitoring

Management of Monitoring Crew, Level (3), Santa Barbara County, California. Managed the day to day activities of a four person monitoring crew (biologists, archaeologist, and Native American) on an HDD job placing fiber optic line beneath jurisdictional waters containing endangered species habitat.

Management of Monitoring Crew, Level (3), Vandenberg Air Force Base, California. Managed the day to day activities of a three person monitoring crew on a job using suspension cables to place fiber optic lines over a jurisdictional waterway containing endangered species habitat on Vandenberg Air Force Base.

Management of Monitoring Crew, KMED, Solano County, California. Managed the day to day activities of two biological monitors on a maintenance operation along a pipeline traveling through the Suisun Marsh in central California.

Biological Monitoring, KMED, Pima County, Arizona. Monitored construction operations during repairs of petroleum pipeline within University of Arizona property near the base of Tumamoc Hill within an ecological preserve. Minimized impact to native vegetation and monitored for presence of sensitive species.

Pre-Construction Surveys, Georgia Pacific, Mendocino County, California. Performed pre-construction surveys on several industrial ponds within a 500-acre saw mill facility near Fort Bragg, California. Surveys conducted for nesting migratory birds and sensitive plant species including Mendocino Coast Indian paintbrush (*Castilleja mendocinensis*) prior to pond closure.

Pre-Construction Surveys and Biological Monitoring, KMED, California. Performed pre-construction surveys and monitored construction along sections of the Calnev pipeline that travels between Colton, California and Las Vegas, Nevada. Surveys conducted for several species endemic to the San Bernardino Mountains and the Mojave Desert including the San Bernardino kangaroo rat (*Dipodomys merriami parvus*), desert tortoise (*Gopherus agassizii*), and the Mojave ground squirrel (*Spermophilus mohavensis*)

Endangered Species survey, KMED, San Diego County, California. Assisted in a presence/absence survey for coastal California gnatcatcher (*Poliioptila californica californica*) in coastal sage scrub habitat in Miramar Naval Air Station.

Pre-Construction Surveys, BNSF, Contra Costa County, California. Conducted pre-construction surveys for California red-legged frog (*Rana arana draytonii*), California tiger salamander (*Ambystoma californiense*), Alameda whipsnake (*Masticophis lateralis euryxanthus*),

raptors, and migratory birds for project involving the replacement of timber ballast on railroad bridge.

Endangered Species Survey, City of Austin, Austin, Texas. Assisted with focused surveys for the state and federally endangered golden-cheeked warbler (*Dendroica chrysoparia*). Included a preliminary presence/absence determination and subsequent territorial assessments using USFWS approved methodology. Survey included habitat assessment of 60-acre property proposed by the City of Austin for development of a water treatment plant.

Aquatic ecology and water quality assessment

Ecological Risk Assessment, XPS Marley, Stockton, California. Provided technical assistance for evaluation of the results of a fish kill caused by the accidental release of caustic material into a diversion canal in Stockton California. Reviewed documentation of incident produced by enforcement officials including damage assessments for natural resource injuries.

Ecological Risk Assessment, Austin Energy, Austin, Texas. Provided technical assistance for a Tier 2 Screening-Level Ecological Risk Assessment (SLERA) of Shoal Creek associated with the Seaholm Power Plant and Seaholm Substation in Austin, Texas. The scope included a screening evaluation of contaminants within Shoal Creek to determine their potential effects to ecological receptors in accordance with current agency guidelines.

Water Quality and Ecological Assessment, Texas A&M University-Corpus Christi.

Conducted water quality and ecological assessment of riverine and marine systems in the southwestern Gulf of Mexico. Collected seasonal water quality data from coastal waters and from two riverine systems in close proximity to platform type coral reefs off the coast of Veracruz, Mexico. The decline in structure and function of coral communities was related to nutrient enriched waters and heavy sediment loads in riverine outfalls.

Habitat Assessment and Aquatic Ecology, Texas A&M University-Corpus Christi. Assisted with several research projects involving qualitative and quantitative assessment of terrestrial and aquatic habitats including faunal and floral communities of riverine, lagoonal, estuarine, and marine systems on the Texas coast, southwestern Gulf of Mexico, Yucatan Peninsula, and western Caribbean Sea.

Water Quality Specialist, El Paso County Water Improvement District #1, El Paso, Texas.

Developed and implemented a water quality program designed to study the effects of reintroduction of waters diverted from the Rio Grande for agricultural, industrial, and municipal purposes. Duties included sample collection, sample analysis, data analysis, QA/QC review, and report writing. Also included biological assessments of fauna and flora near effluent discharge points.

Water Quality Assessments, Omaha, Nebraska. Assisted on a seasonal water quality study of several lacustrine systems near the Platte River in Eastern Nebraska influenced by point source and non-point source pollution creating eutrophic conditions. Project included surveys of micro and macro faunal and floral communities.

Employment history

2007 - Present	Project Manager, AMEC Earth & Environmental, Inc., San Diego, California
2002-2007	Project Manager, TRC Solutions, Inc., Irvine, California
1999 - 2002	Biologist, TRC Environmental, Inc., Austin, Texas
1996-1999	Teaching/Research Assistant, Texas A&M University-Corpus Christi, Corpus Christi, Texas
1994-1996	Water Quality Specialist, El Paso County Water Improvement District #1, El Paso, Texas

Presentations/publications

Ricono, N.A. 1999. Seasonal water quality impacts of riverine and coastal waters on the coral reefs of Veracruz, Mexico. Master Thesis. Department of Biology, Texas A&M University-Corpus Christi. Corpus Christi, Texas.

Chris Rodriguez

Wildlife Biologist

Education

Degree / diplomas / certificate, institution, optional date

Memberships

Southwestern Herpetologists Society

Languages

English

Summary of core skills

Optional sub headings (text style heading 4) – by project or business/service headings)

Use text style normal, body (Arial 11) for body text. Use text style normal, body (Arial 11) for body text. Use text style normal, body (Arial 11) for body text. Use text style normal, body (Arial 11) for body text. Use text style normal, body (Arial 11) for body text

Optional sub headings

Use text style normal, body (Arial 11) for body text

Employment history

2001- Present Wildlife Biologist, AMEC Earth and Environmental, Performed Focused surveys for Desert Tortoise and other herpetofauna. Monitored Construction crews for Biological mitigation compliance

2000-2001 Wildlife Biologist, Private Consultant, Performed Focused surveys for Desert Tortoise and other herpetofauna.

1998-2000 Field Assistant, Tierra Madre Consultants, Inc. Assisted with Arroyo Toad surveys and Presence absence for Desert Tortoise.

Detailed core skills or details by project

- 2000- Biological monitor during construction of roads through desert tortoise habitat in the Mojave Desert, Tierra Madre Consultants/ Pacific Southwest Biological Services.
- 2000- Participating member of the 9th Annual Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop, November 4th and 5th, 2000.
- 2000- Completed USFWS approved seminar on desert tortoise egg handling procedures and artificial tortoise burrow construction.
- 1996-2000 - First hand field experience with locating the desert tortoise (*Gopherus agassizii*) and the various associated signs that may indicate the possible existence of a desert tortoise. Observed many desert tortoises in various habitats and regions in the states of California and Arizona. Familiar with the United States Fish and Wildlife Services protocol for proper desert tortoise surveying techniques.

Chris Rodriguez

- 1998-Present -Carried out and assisted in field surveys for the federally listed endangered Arroyo Toad (*Bufo microscaphus californicus*) for Tierra Madre Consultants / Pacific Southwest Biological Services/ U.S Fish and Wildlife Services. Data collected contributed to a larger study conducted on their abundance and distribution in the Angeles National Forests and Cleveland National Forest of southern California. Conducted surveys in San Francisquito Canyon, Mill Creek, Little Rock Canyon (ANF) and the La Posta Creek tributaries (CNF). Observed Arroyo Toads and their larvae on many occasions throughout the duration of the projects.
- 1999 - Observed an adult Arroyo Toad from a locale from which they have not yet been discovered. Cucamonga Canyon, San Gabriel Mountains, San Bernardino County.
- 2000- Completed U.S Fish and Wildlife Service approved training on the biological monitoring of the Arroyo Toad (*Bufo microscaphus californicus*) from Vincent N. Sheidt.
- 2000- Contract biologist for the monitoring of threatened and endangered species, as well as species of special concern, on fiber optic lines. Carried out the protection of natural resources during the process of construction on these lines. HDR/ Bio Environmental Associates..
- 1998-Present - Discovered a new population of the endangered Southern Red-Legged Frog (*Rana aurora draytonii*) in San Francisquito Canyon, Angeles National Forest. New population is one of only a few remaining in the United States. Currently assisting the Los Angeles Zoo (Russ Smith) in monitoring this new population and carrying out research on its known individuals.
- 1999-2000 - Contract field biologist for research focusing on the effects that fire and grazing have on herptofauna and invertebrate communities in grasslands on the Gray Ranch, Hidalgo County, New Mexico. Performed collection, identification of species and gathered data on all species collected during the course of this ongoing study.
- 1998-Present - Performed various assignments for Tierra Madre / Pacific Southwest Biological Services. Jobs performed ranged from biological assessments, revegetation projects to various reptile and amphibian surveys.
- 1999-Present - Acting board member for the Inland Empire Reptile and Amphibian Society, and assisted other members and non-members in there desire to learn about reptiles and amphibians by answering there questions and arranging trips in to the field.

Daryl Trumbo

Wildlife Biologist

Professional summary

Mr. Trumbo has 6 years of experience in environmental management, terrestrial ecology, marine ecology, and conservation biology in southern California, Baja California, and Costa Rica. He has been involved in all aspects of environmental review, ecological investigation of plants and animals, permitting, habitat evaluations, and resource agency coordination. Mr. Trumbo has experience working with a wide range of local laws including National Environmental Policy Act, California Environmental Quality Act, State and Federal Endangered Species Acts, Natural Community Conservation Planning Act, and California Coastal Act. He has been responsible for designing and implementing studies, collecting and analyzing data, and working with clients to achieve compliance goals. Mr. Trumbo has participated in and conducted research in wildlife movement, wildlife home range analysis, large and small scale habitat mapping, endangered/threatened wildlife species surveys, behavioral biology, spatial distribution of wildlife, and marine ecology.

Education

BS, Biology, San Diego State University, San Diego, CA, 2003

Additional training

Vegetation Rapid Assessment Protocol, California Native Plant Society, 2006

Phylogenetic Inference and Systematic Biology, San Diego State University Graduate Lab Course, 2005

Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2005

International Conference on Ecology and Transportation, 2005

California Anostracan and Notostracan (Fairy Shrimp) Identification Class with Mary Schug Belk, 2005

Biology of the Rattlesnakes Symposium, 2005

San Diego County Sensitive Butterfly Workshop, 2004

Basic Wetland Delineation, Wetland Training Institute, 2004

Para-botanist Training, San Diego Natural History Museum, 2004

CEQA Workshop, Association of Environmental Professionals, 2004

Multiple Species Conservation Program Document Review and Preparation, County of San Diego, 2003.

Plants of San Diego County, San Diego Natural History Museum, 2003

Habitat Loss Permits, County of San Diego, 2003

Daryl Trumbo

Invasive Plants School, County of San Diego, 2002

Natural Resource Laws and Regulations, UC San Diego Extension, 2002

Memberships

World Wildlife Fund

Sierra Club

Natural Resources Defense Council

Location

San Diego, California

Languages

English (native)

Spanish (professional working proficiency)

Summary of core skills

Mr. Trumbo has been the project manager for various environmental projects involving biological resource impacts, studies, and permits. He is currently a wildlife biologist for AMEC Earth & Environmental where he is primarily involved in sensitive and non-sensitive wildlife species surveys, reserve management, and habitat mapping/evaluations; but he also participates in other biological resource management duties such as restoration site management and monitoring, permitting, and sensitive plant surveys. Mr. Trumbo has also served as staff biologist in an environmental management office where his duties included giving biological guidance to environmental managers, administrators, and engineers; assessing biological impacts for construction projects; managing and participating in ecological studies on biological resources; coordinating with government resource agencies and non-profit organizations; and finding and assessing biological mitigation land. He has experience writing environmental documents consistent with the California Environmental Quality Act, the National Environmental Policy Act, the Federal and State Endangered Species Acts, and the San Diego Multiple Species Conservation Program. He has created presentations and led meetings with scientists, engineers, regulators, public administrators, and the general public.

Mr. Trumbo has also had experience in all aspects of ecological investigations research. He has designed ecological investigations on terrestrial and littoral zone wildlife species; collected many kinds of field data; field mapped and evaluated southern California habitats and plant communities; tracked wildlife by radio transmitter, tracks, and scat; conducted statistical analyses to test ecological hypotheses; written scientific reports detailing the results and implications of his studies; and presented his findings to public and scientific audiences.

Areas of expertise

- Mammalogy
- Herpetology
- Invertebrate biology
- Wetland delineation
- Biological monitoring
- Ornithology
- Preparation of Biological Assessments
- Natural resources management plans
- Botanical surveys
- Geographic Information Systems (GIS)
- Research on natural resources-related topics

Details by project

Proposition 13, Dominguez Channel Hydrodynamic Modeling, Port of Los Angeles, Los Angeles, CA. (2007, \$180,400, 4151001010) Part of AMEC team assisting the Port of Los Angeles with management of a State Water Resources Control Board (SWRCB)-funded Proposition 13 project. The Port was awarded \$1.2 million to complete a hydrodynamic and water quality study of the Dominguez Channel, an impaired water body on the 303(d) list. The model will be used to describe the transport of stormwater runoff and dry and wet weather waters through the channel and into the Los Angeles Harbor. The model will eventually be used to help develop TMDLs for the Dominguez Watershed and other local surrounding areas. AMEC also supported the Port in writing the QAPP that in turn was reviewed by the Los Angeles Regional Water Quality Control Board (RWQCB) and State

Daryl Trumbo

Water Resources Control Board (SWRCB). AMEC is also participating in the water quality data collection, the Scientific Review Board (a select group of experts in the hydrodynamic modeling field who review the proposed study methods and model selection), as well as assisting the Port with all required reports to RWQCB and SWRCB.

Exotic Weed Control Program, Marine Corps Base Camp Pendleton, CA. (\$1,200,000, 2007, 32106090A) Biologist. Project objective is to organize all historical exotic weed treatment data collected on the Base since 1996 and creation of a spatially organized geodatabase that organized all data collected on the Base since 1996. Primary target weeds included *Arundo donax* and *Tamarix* spp. Edited annual report outlining and documenting all historical weed treatment data pertaining to many mitigation areas and conservation banks and results of these treatments as they related to regulatory permits obtained from the U.S. Army Corps of Engineers so that MCB could track their permit requirements by acreage treated over extended periods of time.

Habitat Restoration, Petroleum Pipeline Construction Project, Kinder Morgan Energy Partners, L.P., Marine Corps Base Camp Pendleton, CA. (Ongoing, \$1,985,510) Biologist for 26-mile pipeline restoration project. Habitats restored include coastal sage scrub, wetland, riparian scrub, riparian woodland, freshwater seep, oak woodland, sycamore grassland, native grassland, and thread-leaved brodiaea transplantation monitoring.

Bullfrog Control Program, Kinder Morgan Energy Partners, L.P., MCB Camp Pendleton, CA. (Ongoing, \$33,000) Assisted with development of program and fieldwork for control of bullfrogs in San Mateo Creek at Marine Corps Base Camp Pendleton for mitigation of impacts to the southwestern arroyo toad during construction of a pipeline. Sensitive species located during control program included southwestern arroyo toad, southwestern pond turtle, and California newt.

INS Border Infrastructure Project, Specialty Biological Services, U.S./Mexico Border, CA. (Ongoing, \$227,000, 322500006, 322500008) As part of the overall mitigation for project impacts related to proposed fencing, roads, lighting and other infrastructure, AMEC is planning and implementing wetland creation, restoration, and enhancement of over 5 acres of riparian wetlands in Spring Canyon. AMEC developed and successfully obtained agency approval of a detailed wetland mitigation plan for the project. Implementation of the mitigation program will begin in the fall of 2006. AMEC will oversee the landscape contractors during construction and installation of the wetland mitigation areas and is responsible for the 5-year monitoring of the site to ensure success of the mitigation.

Water Quality Monitoring NPDES Permit Monitoring for University of California at San Diego, Scripps Institution of Oceanography, San Diego, CA. (\$1,500,000, 01/2006 – 01/2011, 6151000200) Biologist for UCSD/SIO NPDES discharge monitoring program. As part of the AMEC team, Mr. Trumbo periodically collects and analyzes water and sediment samples from various oceanside and underwater locations where return seawater from numerous aquariums and stormwater are discharged. In addition, AMEC scientists are helping SIO conduct special studies to understand any potential impacts to the ecosystem within the ASBS.

Biological Resources Constraints Report for the Proposed Discovery Lake Sediment Dredging Project, Moffat & Nichol, San Marcos, CA. (2006, \$36,648) Developed a biological report for the client that involved an overview of local, state, and federal jurisdiction constraints of a proposed dredging project on species and habitats on-site. Additionally, performed a database search for potential sensitive species, gathered and organized relevant information relating to potential impacts and mitigation methods that the client could use to minimize these potential impacts. Aided in the mapping of various habitats on-site, and incorporated information regarding the need for future surveys.

Chappo Post Fire Weed Management Project, MCB Camp Pendleton Environmental Security, Land Management Branch, Camp Pendleton, CA. (2006; \$797,176, 321060094) Biologist as part of team responsible for monitoring the species diversity and vegetative cover of plants throughout a weed dominated post-fire landscape (137 acre site), and incorporating this information, directing the contractor to focus various weed management strategies where most appropriate. Other objectives include monitoring native plant recovery and tracking costs to determine efficient management

Daryl Trumbo

techniques, qualitatively mapping exotic weed communities, quantitatively monitoring vegetation comeback, adding native seed to a major section of the site, assessing the costs and benefits associated with treatment activities, monthly progress reporting and annual reporting.

Biological and Botanical Resources Assessments, Southern California Edison, Riverside County, CA. (12/2006, \$59,000, 6151000801)

Biologist for biological and botanical resources assessments for the proposed Valley-Ivyglen Transmission Line and Fogerty Substation. Documented the biological resources associated with construction of a new 115kV transmission line designed to improve reliability and meet projected electrical load requirements. Conducted biological habitat assessment surveys for sensitive plant species within 11 potential land parcels which will provide an overview of existing and potential sensitive plant resources within the project area, evaluate consistency with the MSHCP, and determine what focused sensitive species surveys or wetland/jurisdictional waters delineation may be necessary for further project review.

Frontier Homes Tract 17529 Wetland Permitting, Frontier Homebuilders, Inc., Hesperia, CA.

(11/2006, \$41,452, 5554000211) Prepared applications to obtain a Section 404 Nationwide Permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification from the Regional Water Quality Control Board, and a Section 1600 Streambed Alteration Agreement from the California Department of Fish and Game. Conducted pre-application meeting with client, project engineer, and resource agencies to discuss potential project impacts and mitigation.

Mountain Vista Biological Studies, Desert Tortoise Surveys, Terra Nova Planning and Research, Yucca Valley, CA.

(2005, \$21,000) Assisted in U.S. Fish and Wildlife Service protocol surveys for federally threatened desert tortoise on 500 acre site in Yucca Valley. Observed live adult desert tortoise, active desert tortoise burrows, scat, and desert tortoise shell remains.

Before-After-Control-Impact Wildlife Movement Study, Wildcat Canyon Road Enhancement Project, County of San Diego, Dept. of Public Works, CA.

(09/2004, \$300,000; Construction: 2006 [estimated]) Project manager overseeing implementation of one year of pre-construction surveys for wildlife movement baseline data to determine the optimal locations for wildlife crossings and determine impacts to wildlife movement from a one mile passing lane. Study methodology included gypsum tracking stations, wildlife sign transects, camera stations, road-kill transects, and monthly reports for the Wildlife Agencies (U.S. Fish and Wildlife Service and California Department of Fish and Game). Responsible for all contact and coordination with the agencies.

Vernal Pool and Rare and Endangered Species Surveys, San Diego Air Force Station, San Diego County, CA.

(2006, \$148,730; Construction: 2006) Wildlife biologist for services including conducting a California gnatcatcher habitat assessment, vernal pool and Quino checkerspot butterfly surveys.

Assessment of Vernal Pools and Vegetation Communities on the McClellan-Palomar Airport Properties, County of San Diego, Carlsbad, California.

(2005, \$17,000) Surveyed 16 vernal pools for vernal pool indicator plants, mapped all upland and wetland vegetation communities, and recorded incidental wildlife species sightings on preserve lands under the San Diego County Multiple Species Conservation Program.

Biological Technical Report, Proposed San Elijo Lagoon Visitor Center Improvements Project, County of San Diego.

(2005, \$12,000) Staff wildlife biologist involved in the data collection and preparation of a biological technical report to analyze and assess potential biological impacts for a County of San Diego project within a plant and wildlife preserve under the San Diego County Multiple Species Conservation Program. Key staff member in field mapping the habitats onsite, surveying the site for birds and other wildlife species, researching the applicable regulatory plans and requirements for this multi-jurisdictional area, compiling the data, and writing the report.

Upland and Riparian Vegetation Community Mapping, U.S. Marine Corps Base at Camp Pendleton.

(Ongoing, \$186,000) One of the primary biologists involved in large-scale field mapping, classification, and change analysis of all upland and riparian vegetation communities on the 250 square mile MCB Camp Pendleton. Duties performed included coordinating with the base resource managers; field mapping of vegetation communities, including photo interpretation; preparation and coordination of data for entry into a GIS database; 5-year vegetation change analysis; and report

Daryl Trumbo

preparation. Data from this project will be incorporated as a GIS base layer at Camp Pendleton. Mapping requirements included a minimum mapping unit of one acre for upland areas and one quarter acre for riparian areas, and a mapping accuracy of 95 percent.

Otay Water District Recycled Water Pipeline, Reservoir, and Pump Station Project, Lee & Ro, Inc., Chula Vista, CA. (Ongoing, \$30,000,000; Construction: 09/2005) Linear construction project within County of San Diego, City of San Diego, and City of Chula Vista jurisdictions. Natural resource specialist responsible for preparing documentation to obtain a Section 404 Corps' Nationwide Permit, a Section 401 water quality certification, and a Section 1600 streambed alteration agreement for the project. In addition, performed a pre-construction burrowing owl habitat and presence/absence assessment within the project area and adjacent habitat. The burrowing owl assessment consisted of one habitat assessment survey and three presence/absence surveys according to survey protocol proposed by the Santa Cruz Predatory Bird Research Group. Wrote a report detailing the findings of the surveys that was submitted to the wildlife agencies.

San Miguel Habitat Management Area and Otay Interconnect Pipeline, Otay Water District, Chula Vista, CA. (2005, \$610,000) Wildlife specialist for services including management of preserve and conducting protocol surveys for Quino checkerspot butterfly, California gnatcatcher, and sensitive plants; monitoring of burrowing owl artificial burrow mitigation program, least Bell's vireo surveys, and invasive nonnative weed control program. Project included the design, implementation, monitoring, and maintenance of a 14-acre native grassland restoration and wetland/riparian restoration. Evaluated success of two restoration projects onsite, including horticultural (qualitative) and botanical (quantitative) monitoring methods.

Assisted in managing all aspects of the San Miguel Habitat Management Area, a dedicated biological reserve acquired by the Otay Water District for use as a mitigation bank for impacts associated with proposed District projects. Conducted monthly surveys to assess overall Reserve status. Evaluated success of two restoration projects onsite, including horticultural (qualitative) and botanical (quantitative) monitoring methods. Conducted protocol surveys for federally listed sensitive species Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo. Conducted presence/absence surveys for burrowing owls within occupied habitat that contains artificial burrowing owl burrows. Made recommendations and coordinate with the landscape contractor to maintain and improve the habitat and artificial burrows for burrowing owl use. Assisted with rare plant surveys. Provided direction for landscape maintenance contractor to control nonnative weeds and improve habitats onsite. Prepared monthly status reports. Prepared annual reports for the Reserve, the burrowing owl habitat, the native grassland restoration area, and the Rickey Pond restoration area. Prepared 45-day reports for submittal to the U.S. Fish and Wildlife Service for Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo.

Cannon Road Extension Project Wetland Mitigation for Reach 1, City of Carlsbad, CA. (2000, \$188,000) Evaluated present conditions of restoration project for temporary impacts associated with the construction of Macario Bridge in the city of Carlsbad. Monitor success of mitigation site, including horticultural (qualitative) and botanical (quantitative) parameters. Provided direction for landscape maintenance contractor. Generate monthly status reports. Generated annual reports.

Cocklebur Vernal Pool Conservation and Restoration Plan, MCB Camp Pendleton, CA. (Ongoing, \$160,000) Assisted in the development of a conservation plan for approximately 145 vernal pools associated with the Cocklebur Mesa Sensitive Area. Involved in habitat mapping, assessing vernal pool and upland resources, and developing a management plan that provides direction for short and long-term goals that will increase the value of the vernal pool habitat. Preliminary biological fieldwork included upland and vernal pool habitat mapping and vernal pool sensitive plant survey.

Jurisdictional Waters and Wetland Delineation Report for the Landscape by Hiro, Inc. Site, Southern California Edison, County of Orange, Huntington Beach, CA. (Ongoing, \$15,000) Participated in writing the Jurisdictional Waters and Wetland Delineation Report for a jurisdictional wetland delineation. Duties included researching pertinent regulations, historical research for the site, and a WETS analysis to quantitatively determine whether it was a wetter than normal rainy season.

Daryl Trumbo

Past professional experience

Before-After-Control-Impact Wildlife Movement Study for the Wildcat Canyon Road Enhancement Project, County of San Diego, Department of Public Works, San Diego, CA.

(Ongoing, \$210,000; Construction: 2005, \$15,000,000) Project manager overseeing implementation of one year of pre-construction surveys for wildlife movement baseline data to determine the optimal locations for wildlife crossings and determine impacts to wildlife movement from a one-mile passing lane. Study methodology included gypsum tracking stations, wildlife sign transects, camera stations, road-kill transects, and monthly reports for the Wildlife Agencies (U.S. Fish and Wildlife Service and California Department of Fish and Game). Responsible for all contact and coordination with the Wildlife Agencies.

Opportunities and Constraints Report for the Sunnyside Equestrian Bridge, County of San Diego, Department of Parks and Recreation, San Diego, CA. (2003, \$6,000; Construction: 2003, \$60,000) Performed initial study for equestrian bridge over the Sweetwater River and connecting trail, including identification and evaluation of habitats near the bridge site, potential for sensitive plant and wildlife species on-site, and recommendations for location of bridge and construction staging areas. Also recommended type of environmental documentation, permits, and mitigation necessary. Prepared report detailing the results.

Wetland Permits for the Wildcat Canyon Road Enhancement Project, County of San Diego, Department of Public Works, San Diego CA. (2004, \$50,000; Construction: 2005, \$15,000,000) Compiled all wetland impact information and completed permit applications for a Section 404, Nationwide Permit 14 from the U.S. Army Corps of Engineers, a 1601 Streambed Alteration Agreement from the California Department of Fish and Game, and a Section 401 Water Quality Certification from the Regional Water Quality Control Board. Managed and participated in a wetland mitigation site search and preparing Findings of Conformance with the Multiple Species Conservation Program. Identified and secured suitable wetland mitigation property and successfully negotiated and received all permits from the Resource Agencies. Responsible for all contact and coordination with the Resource Agencies during the permit acquisition process.

Burrowing Owl Habitat Survey on the McClellan-Palomar Airport Property, County of San Diego, Department of Public Works, Carlsbad, CA. (2003, \$4,000) Participated in a survey for burrowing owls, including potential burrows and sign, in conjunction with County of San Diego staff working on the San Diego Multiple Species Conservation Program. An approximately 210 acre parcel owned by the County of San Diego was surveyed visually for potential burrowing owl habitat, including focused transects within approximately 20 acres of potential burrowing owl habitat for sign of burrowing owl occupation. Reviewed and commented on letter report to the County of San Diego detailing the results of the survey.

Olive Ridley Sea Turtle (*Lepidochelys olivacea*) Conservation Project, Asociacion Sudcaliforniana de Proteccion al Medio Ambiente y a la Tortuga Marina (ASUPMATOMA), Cabo San Lucas, BCS, Mexico. (2002) Served as staff biologist, camp manager, Master's research assistant, and tour guide at a sea turtle research and conservation camp at Rancho Punta San Cristobal, near Cabo San Lucas. Collected and compiled nesting turtle field data for Master's student and Mexican government pursuant to Mexican permits for endangered species research. This data included nesting turtle weight and length, tagging nesting turtles, recording number of eggs, size of eggs, hatch success, and size of hatchlings. Prepared and gave presentations for public and scientific audiences. Responsible for coordination with other Mexican and American biologists.

Past scholastic experience

Behavioral Biology Research Practicum on Leaf-cutter Ants (*Atta cephalotes*), UC San Diego, Costa Rica. (2001) Designed, collected all field data, statistically analyzed data, and reported on a behavioral study on relationship of trail clearing behavior to individual ant size for three colonies of leaf-cutter ants. Presented findings to a scientific audience.

Home Range Analysis of the Red Diamond Rattlesnake (*Crotalus ruber*) within Variably Sized Habitat Patches, in San Diego County, UC San Diego, CA. (2000) Tracked rattlesnakes by radio transmitter, collected spatial GIS data, collected individual measurement data (weight, length),

Daryl Trumbo

collected blood samples, entered GIS data, and assisted in surgery to implant radio transmitters. Designed, collected field data, statistically analyzed data, and reported on an independent study on winter den characteristics of red diamond rattlesnake and the implications for conservation.

Investigation of Niche Patterns in a Desert Lizard Community, U.C. San Diego, Anza Borrego Desert State Park, CA. (2000) Performed transect sampling of desert lizard density, identified species, and characterized microhabitats. Analyzed diversity, niche widths, and niche overlaps using descriptive statistics. Used results to examine diversity patterns according to classical competition theory, as well as temporal trends in desert lizard abundance.

Ecological Investigation of Spatial Patterns of Adult California Sea Hares (*Aplysia californica*) within Interconnected Tide Pools near Scripps Research Institute, UC San Diego San Diego, CA. (2000) Designed, collected, and statistically analyzed field data, and reported on an ecological study of a population of sea hares to determine if the adults exhibit any spatial patterns and, if so, the reasons for the patterns (i.e., resource competition, mating behavior, predator avoidance, etc.).

Population Size and Age Distribution Investigation of Blue-clawed Hermit Crabs (*Pagurus samuelis*) using Mark-Release-Recapture Techniques within Interconnected Tide Pools near Scripps Research Institute, UC San Diego San Diego, CA. (2000) Performed stratified random sampling and used three different mark-release-recapture techniques (Lincoln-Petersen index, Schnabel method, and Bailey triple-catch method) to monitor a population of blue-clawed hermit crabs in the rocky intertidal zone. Analyzed population size, age distribution, and estimated survivorship.

Employment history

2004 - Present	Wildlife Biologist, AMEC Earth & Environmental, Inc.
2002 - 2004	Environmental Management Specialist/Staff Biologist, County of San Diego, Department of Public Works
2002	Tram Operator/Guide, San Diego Wild Animal Park
2001 - 2002	Staff Biologist, Non-profit Sea Turtle Research & Conservation Organization (ASUPMATOMA, Cabo San Lucas, BCS, Mexico)
2000	Research Assistant, U.C. San Diego, Dr. Ted Case's Laboratory, Jeff Tracey's Master's research on home range analysis of the red diamond rattlesnake (<i>Crotalus ruber</i>)

Presentations/publications

Trumbo, D. 2002. Presentation of 2001 Nesting Season Results of the Olive Ridley Sea Turtle (*Lepidochelys olivacea*) on Two Beaches in Cabo San Lucas, BCS, Mexico. Annual Sea Turtle Symposium, Loreto, BCS, Mexico.

Trumbo, D. 2003. Professional Biology Jobs, San Pasqual High School Career Day.



TED RADO

BIOLOGICAL CONSULTING

Threatened & Endangered Species Surveys
Section 7 and Section 10(a) Permitting
Habitat Conservation Plans
NEPA/CEQA - CDFG 2081 Permitting
Environmental Education Programs

Environmental Reports
Regulatory Review
Mitigation Planning
Project Planning
Construction Monitoring

3144 Celeste Dr., Riverside, CA 92507 • Office (951) 369-8510

Ted Rado

Date of Birth: January 10, 1952

Current Address: 3144 Celeste Drive
Riverside, California 92507

Telephone Number: 951/369-8510

Education: San Jose State University
B.A. Zoology - December 1974
M.A. Biology - August 1977

EXPERIENCE

- 1989-2004** Independent consulting biologist. Work has included field surveys, report preparation, and preparation of Habitat Conservation Plans and related documents. Projects have included oilfield actions, prison construction and permitting, wind energy, mining, pipelines, roads, and urban development.
- 1989-Mar 1990** Wildlife biologist. U.S. Bureau of Land Management, Riverside, California. Preparation of an EIS addressing regional control of ravens, assisting Area Offices with various projects affecting desert tortoises, and development of mitigation measures for the desert tortoise.
- 1984-1989** Wildlife Biologist. U.S. Fish and Wildlife Service, Endangered Species Office, Sacramento, California. Work included preparation of Section 7(a) biological opinions and development of conservation plans for regional Section 10(a) permit applications.
- 1981-1984** Wildlife Biologist. U.S. Bureau of Land Management, Barstow, California. Development and implementation of management plans for wildlife and sensitive habitats and review of many projects affecting desert wildlife.

- 1980-1981** Wildlife Biologist. U.S. Bureau of Land Management, Sacramento, California. Employed as an endangered species specialist for the Resources Division of the State Office. Duties included assisting both District and Field Offices state-wide with compliance with the Endangered Species Act.
- 1979-1980** Wildlife Biologist. U.S. Bureau of Land Management, Riverside, California. Employed as a member of the Desert Planning Staff developing a comprehensive management plan for 12 million acres of Federal lands in the California Deserts.
- 1975-1978** Seasonal Park Ranger. Conducted faunal inventories of Hovenweep National Monument (Utah-Colorado) and Fossil Butte National Monument (Wyoming). Work included systematic live-trapping of small mammals.

Professional Organizations:

American Society of Mammalogists
Herpetologist's League
Society for the Study of Amphibians and Reptiles
Desert Tortoise Council

Certifications:

Certified biologist on lists for San Bernardino, Kern, Los Angeles, Orange, Ventura, and Riverside Counties, California
Completed desert tortoise training workshop (1990) Completed Mohave ground squirrel workshop, sponsored by The Wildlife Society
State small mammal livetrapping permit
Authorized to livetrapping Mohave ground squirrels
Current State Memorandum of Understanding for handling the desert tortoise

Partial List of Publications:

- Rado, T.A. and P.G. Rowlands. 1981. A range extension and low elevational record for the Arizona ridgenose rattlesnake, Crotalus willardi willardi. Herp. Review. 1981:15-16.
- Rado, T.A. 1990. Results of the 1989 pilot raven control program. The Desert Tortoise Council: Proceedings of the 1990 Symposium.
- Rado, T.A. 1993. An overview of mitigation actions employed for selected endangered species in the San Joaquin Valley. Pp. 199-206. In: D. Williams, S. Bryne and T. Rado (eds.) Endangered and sensitive species of the San Joaquin Valley, California: a conference on their biology, management and conservation. 388 pp.
- Laudenslayer, W.F., K.B. Buckingham, and T.A. Rado. 1995. Mammals of the Deserts of California. In: J. Latting and P.G. Rowlands (eds.): The California Desert: An

Introduction to Natural Resource's and Man's Impact. California Native Plant Society. Pp. 373-396.

Partial List of Projects:

- 2004 **Southern Trails Pipeline Coating Inspection Project, San Bernardino, Riverside and Los Angeles Counties.** Did initial surveys, monitored during inspections, and prepared final report on project where pipeline coating inspections took place over 200 linear miles of line.
- 2004 **Frontier Homes Construction Project, Victorville.** Provided crew with environmental compliance training, conducted preactivity survey and monitored during land clearing for housing subdivision.
- 2004 **Hilton Gardens Inn Project, Victorville.** Preactivity survey, crew compliance training, site monitoring for large hotel construction site.
- 2004 **Bolthouse Farms Project, Los Angeles County.** Site survey and report. Also prepared long-term monitoring plan for wildlife.
- 2004 **Aster Villas and New Homes Housing Projects, Adelanto.** Assisted in site monitoring for compliance during construction. Burrowing owl and Mohave ground squirrel issue species.
- 2004 **Suncal McAllister Ranch Burrowing Owl Survey, Kern County.** Project surveys for burrowing owls and nesting sites for large-scale planned housing development southwest of Bakersfield.
- 2004 **Ajax Services Commercial Development, Adelanto.** Biological resource survey and report for planned commercial development.
- 2004 **Aquino Commercial development Site, Victorville.** Biological resources survey and report for planned commercial development.
- 2004 **March Air Force Base Bunker Inspection, Riverside County.** Monitored during soils tests of cleared weapons bunkers at the base. Emphasis on the Stephen's kangaroo rat.
- 2004 **Forecast Homes State 2081 Permit, San Bernardino County.** Prepared draft State 2081 (Endangered Species Permit) for proposed housing subdivision emphasizing the Mohave ground squirrel.
- 2004 **Whitewater Rock Mine, Riverside County.** Assisted in surveys of proposed mine expansion,

with emphasis on the desert tortoise and rare plants.

- 2004 **Moreno Valley Burrowing Owl Survey, Riverside County.** Completed burrowing owl survey of proposed subdivision site and prepared summary report for submittal to County for large consulting company.
- 2004 **Suncal Properties McAllister Ranch Project, Kern County.** Reviewed prior FEIR and data records for large property being considered for development southwest of Bakersfield. Also assisted in blunt-nosed leopard lizard inventory of this site.
- 2004 **Terrazas Mine, Riverside County.** Assisted in survey of mine expansion project along the western edge of the desert in central Riverside County. Emphasis on the desert tortoise and rare plants.
- 2004 **Airway Boulevard Extension Project, Kern County.** Road expansion survey in the western Mojave Desert. Emphasis on the desert tortoise.
- 2004 **San Joaquin Valley Landbank Project, Kern County.** Reviewed several potential sites in the valley as prospective mitigation "landbanking" sites for a large pipeline company.
- 2004 **Slate Range Communications Site, Inyo County.** Completed biological survey and prepared report for comm site near Death Valley.
- 2004 **Southern Nevada Water Authority Surveys, Clark County, Nevada.** Member of a team of biologists conducting surveys for a large company for the desert tortoise and rare plants over proposed water conveyance and storage system in southern Nevada.
- 2004 **Mohave Ground Squirrel Livetrapping Survey, 30-Acre Site in Victorville.** Completed systematic livetrapping survey using California Department of Fish and Game protocols.
- 2004 **Mohave Ground Squirrel Livetrapping Survey, 55-Acre Site in Adelanto.** Completed systematic livetrapping survey using California Department of Fish and Game protocols.
- 2004 **Mohave Ground Squirrel Livetrapping Survey, 10-Acre Site in Adelanto.** Completed systematic livetrapping survey using California Department of Fish and Game protocols.
- 2004 **Mohave Ground Squirrel Livetrapping Survey, 30-Acre Site in Lancaster.** Assisted in a systematic livetrapping survey using California Department of Fish and Game protocols.
- 2004 **Joshua Tree Land Development, San Bernardino County.** Assisted in systematic survey of

90-acre parcel bordering Joshua Tree National Park. Emphasis on the desert tortoise.

2003 Questar Road Grading Survey, San Bernardino County.

Conducted desert tortoise survey of 66 linear mile segment of pipeline maintenance road. Submitted summary report to company for agency review.

2003 Conoco-Phillips Marsh Creek Repair Project, Alameda County. Conducted survey of pipeline repair project near Mt. Diablo, with emphasis on the red-legged frog, Alameda striped whipsnake, California tiger salamander and western pond turtle. Discussed mitigation with company representative.

2003 Shea Properties Project, Riverside County. Conducted desert tortoise surveys of four separate sites in the Coachella Valley.

2003 Atolia Comm Site Preactivity Survey, Kern County. Conducted desert tortoise survey of communications site near Randsburg. Gave construction crew environmental compliance training. Assisted in tortoise-proof fence construction.

2003 Desert Dunes Project, Riverside County. Member of crew conducting surveys of proposed subdivision in the Coachella Valley. Emphasis on the desert tortoise, rare plants, Coachella Valley fringe-toed lizard, burrowing owl and Coachella round-tailed ground squirrel.

2003 Metropolitan Water District Colorado River Aqueduct Repairs, San Bernardino County. Member of team conducting preactivity surveys and monitoring during repairs of segment of the aqueduct in the Mojave Desert. Emphasis on the desert tortoise.

2003 Tosco Kern Station Tank and Pipeline Demolition, Kern County. Conducted site surveys and monitored as crew dismantled and removed equipment from facility in the Kern Oilfield. Emphasis on the San Joaquin kit fox and the Bakersfield cactus.

2003 Coachella Water District Site Survey, Riverside County. Worked as a member of a team conducting desert tortoise surveys of property near La Quinta, with emphasis on the desert tortoise.

2003 Whitewater Canyon Alluvial Rock Quarry Site, Riverside County. Worked as a member of a team conducting surveys of an approximately one-linear mile segment of Whitewater Canyon, with emphasis on the endangered arroyo toad.

2003 Metropolitan Water District Patrol Road Maintenance, San Bernardino County, California and Clark County, Nevada. Did preactivity surveys and monitoring during maintenance of existing patrol road segments in the eastern Mojave Desert, with emphasis on the desert tortoise.

2003 Neuvo Buena Vista to E+M Pipeline Survey, Kern County.

Worked as a member of a 4-person team conducting surveys of an approximately 15-linear mile pipeline segment in the southern San Joaquin Valley. Emphasis on many species, including the San Joaquin kit fox, blunt-nosed leopard lizard, San Joaquin antelope squirrel, burrowing owl, giant kangaroo rat and Hoover's woolly-star.

2003 California City Oasis Project, Kern County. Worked as a member of a team conducting surveys of a proposed camping area on the northern edge of California City, with emphasis on several rare plants, the desert tortoise, Mohave ground squirrel and burrowing owl.

2003 California City High School Site, Kern County. Assisted in conducting surveys of a proposed high school site in California City. Prepared summary report. Emphasis on the desert tortoise, Mohave ground squirrel, burrowing owl, and rare plants.

2003 California City Elementary School Site, Kern County. Assisted in conducting surveys of a proposed elementary school site in California City. Prepared summary report. Emphasis on the desert tortoise, Mohave ground squirrel, burrowing owl, and rare plants.

2003 MCAGCC Range 500 Tortoise Survey, San Bernardino County. Crew supervisor conducting surveys of a variety of facility sites at Range 500 near Twentynine Palms. Data (including GPS coordinates) recorded and provided to primary contractor for the military project. Emphasis on the desert tortoise.

2003 Hyundai Vehicle Test Site Tortoise Surveys, Kern County. Team member conducting desert tortoise surveys within an approximately 2,000-acre area in the western Mojave Desert.

2003 Coachella Canal Line Project Survey, Imperial County. Crew supervisor conducting desert tortoise surveys along an approximately 33-linear mile segment of the Coachella Canal.

2003 SCE Devers-West Transmission Line Survey, Orange and Riverside Counties. Worked as a member of a team conducting general bio surveys along two 80-linear mile segments of existing transmission line right-of-way. Emphasis on a variety of listed and sensitive species.

2002 Metropolitan Water District - Colorado River Aqueduct Repairs, San Bernardino County. Member of team conducting preactivity surveys and site monitoring during repairs of sections of the aqueduct in the Mojave Desert.

- 2002 **Sempre Energy - Line 1080 Repair, Riverside County.** Member of team conducting preactivity surveys and site monitoring for desert tortoises during replacement of a six linear mile segment of natural gas pipeline in the Mojave Desert.
- 2002 **Questar Pipeline Spread 7 Construction, San Bernardino County.** Conducted preactivity surveys, did site monitoring and post-project compliance report for work over a 35-linear mile segment of pipeline in the eastern Mojave Desert. Emphasis on the desert tortoise.
- 2002 **BNSF Lateral Pipeline, San Bernardino County.** Conducted surveys, prepared report, did project monitoring and completed post-project monitoring report for pipeline supplying fuel to the BNSF railroad yard in Barstow. Emphasis on a variety of species, including the burrowing owl and the desert tortoise.
- 2002 **Questar Spread 3B Construction, San Bernardino County.** Conducted preactivity surveys, did site monitoring and post-project compliance report for work over a 35-linear mile segment of pipeline in the eastern Mojave Desert. Emphasis on the desert tortoise.
- 2002 **Sempre Energy Adelanto-Kramer Pipeline Project, San Bernardino County.** Worked as a member of a team conducting preactivity surveys and monitoring during the construction of a 36-inch trunk natural gas pipeline extending across the central Mojave Desert. Emphasis on the desert tortoise.
- 2002 **Kinder Morgan Energy Partners Draft Biological Evaluation, California and Nevada.** Reviewed and incorporated editorial comments and suggestions received on preliminary draft also written by myself addressing regional pipeline operations and maintenance and returned to company.
- 2002 **BNSF Lateral burrowing Owl Survey, San Bernardino County.** Completed a preactivity survey of a pipeline segment, with emphasis on checking a previously noted burrowing owl nesting site for signs of current activity.
- 2002 **Questar Pipe Line Cabazon Reroute Project, Riverside County.** Completed a preactivity survey of pipeline reroute segment, with emphasis on the desert tortoise and several sensitive species.
- 2002 **Questar Pipeline Spread 7 Construction, San Bernardino County.** Conducted preactivity surveys, did site monitoring and post-project compliance report for work over a 35-linear mile segment of pipeline in the eastern Mojave Desert. Emphasis on the desert tortoise.
- 2001 **Level 3 Fiber-optic Line, Victorville to Stateline Project.** Worked as a member of a team

conducting surveys and monitoring during placement of an approximately 200 linear mile segment of fiber-optic line in the Mojave Desert. Sensitive plants, Mohave ground squirrel and the desert tortoise were the principal species of concern.

- 2001 **Questar Pipe line Company Road Repairs, San Bernardino County.** Conducted surveys and monitored construction crew effecting repairs of pipeline maintenance road in the eastern Mojave Desert.
- 2001 **Tosco Polonio Pass Project, San Luis Obispo and Kern Counties.** Worked as a subconsultant conducting arroyo toad and California red-legged frog survey.
- 2001 **U.S. Borax Sensitive Plant Surveys, Kern County.** Worked as a team member conducting spring surveys around active portions of the mine for sensitive plants and the desert tortoise.
- 2001 **Metropolitan Water District Washout Repairs, Riverside and San Bernardino Counties.** Conducted surveys and monitored as construction crew repaired patrol road washouts from thunderstorm damage.
- 2001 **Metropolitan Water District Road Surveys, California and Nevada.** Conducted desert tortoise and sensitive species surveys over approximately 300 linear mile segment of the patrol road system in the Mojave Desert.
- 2001 **Ludlow Quarry Pit, San Bernardino County.** Conducted surveys and prepared report for 60-acre quarry pit for I-40 repairs, with emphasis on rare plants and the desert tortoise.
- 2001 **Southern Rubber Boa Survey, San Bernardino Mountains.** Conducted survey to look for and evaluate habitat of the southern rubber boa along a proposed water pipeline corridor.
- 2001 **Sands Project, San Bernardino County.** Conducted biological survey as a team member of Union Pacific Railroad sites slated for cleanup in the eastern Mojave Desert, with emphasis on the desert tortoise.
- 2001 **Atolia Communications Site, Kern County.** Conducted biological survey of comm site in the Mojave Desert and prepared summary report text.
- 2000 **Level 3 San Diego-Yuma Fiber-optic Line, San Diego and Imperial Counties.** Team member to parent engineering firm conducting surveys and monitoring of portions of line, with emphasis on sensitive plants and the endangered arroyo toad.

- 2000 **Level 3 Las Vegas-Stateline Fiber-optic Line, Clark County, Nevada.** Team member to parent engineering firm conducting surveys and monitoring of portions of line, with emphasis on the threatened desert tortoise.
- 2000 **Level 3 Fiber-optic Line, Corona Area, Riverside County.** Team member to parent engineering firm monitoring construction, with emphasis on riparian habitats.
- 2000 **Metropolitan Water District Desert-wide Operations and Maintenance Projects, California and Nevada.** Prepared draft biological evaluation report addressing ongoing operations and maintenance of Colorado River Aqueduct, access roads, transmission lines, pump stations and associated facilities on listed and sensitive species.
- 2000 **Metropolitan Water District Road Maintenance, Riverside and San Bernardino Counties.** Conducted surveys and prepared summary report addressing road maintenance over about 125 linear miles of facility roads. Environmental compliance training to staff.
- 2000 **Calnev Pipe Line Company Block Valve Survey, California and Nevada.** Conducted surveys and prepared report addressing maintenance work on four block valve sites in the Mojave Desert, with emphasis on the desert tortoise.
- 2000 **U.S. Borax Sensitive Plant Surveys, Kern County.** Team member conducting systematic surveys on outer edges of borax mine, with emphasis on several sensitive plants and the desert tortoise.
- 2000 **Glamis Imperial Project, Imperial County.** Reviewed text of proposed Federal mineral withdrawal surrounding mine and prepared summary text for company.
- 2000 **Glamis Imperial Project, Imperial County.** Reviewed text of final biological opinion for the mine site, and prepared summary text for the company.
- 2000 **TXI Quarry Site, San Bernardino County.** Team member conducting tortoise and sensitive plant surveys near Victorville.
- 2000 **Southern California Gas Company Line 173 Leak Survey, Kern County.** Conducted preactivity surveys of San Joaquin kit foxes, blunt-nosed leopard lizards and other listed and sensitive species.
- 2000 **Southern California Gas Company Desert Project Surveys, Riverside County and San Bernardino County.** Surveys of over 20 operations and maintenance projects proposed for calendar year 2000, in tortoise habitat areas for parent firm.

- 2000 **Southern California Gas Company, San Joaquin Valley Operations and Maintenance Project Surveys, Kern County.** Surveys of over 10 project sites in the southern San Joaquin valley slated for year 2000 work, with emphasis on several listed and sensitive plants and wildlife for parent firm.
- 2000 **Coalinga Cogeneration Project, Fresno County.** Annual check of cogeneration site and associated steam field service area for compliance with Section 10(a) permit prepared in 1990.
- 2000 **Questar Line 90 Endangered Species Habitat Correlations, California and Western Arizona.** Aerial photoanalysis review and ground-truthing to accurately map locations and extent of endangered species habitat along an approximately 285 linear mile pipeline segment extending through the Mojave Desert for a parent consulting firm.
- 2000 **ATT San Diego-Blythe Fiber-optic Surveys, Imperial and Riverside Counties.** Subconsultant and field crew supervisor to parent firm conducting systematic surveys of approximately 125 linear miles of fiber-optic line. emphasis on several listed plants in the Algodones Dunes (Pierson's milk-vetch, Algodones Dunes sunflower), flat-tailed horned lizard and the desert tortoise. Preparation of draft summary report for the parent firm.
- 1999 **Questar Pipe Line Company road Maintenance, San Bernardino County.** Conducted preactivity surveys and monitored during patrol road maintenance over 15-linear mile segment in the eastern Mojave Desert. Emphasis on the desert tortoise.
- 1999 **Needles Landfill Perimeter Fence Construction, San Bernardino County.** Conducted preactivity surveys and monitored during placement of a tortoise-proof fence around the perimeter of the Needles landfill.
- 1999 **Arroyo Toad Surveys, Summit Valley Ranch, San Bernardino County.** Lead biologist conducting surveys for the endangered arroyo toad in segments of Little Horsethief Creek and Horsethief Creek. Summary report completed.
- 1999 **U.S. Borax Desert Tortoise Surveys, Kern County.** Worked as a member of a team conducting systematic surveys of a portion of the mine for the desert tortoise.
- 1999 **Southern California Gas Company Desert Road Grading Maintenance, Riverside County.** Monitor during road maintenance along an approximately 40-linear mile segment of patrol road, with emphasis on the desert tortoise. For parent firm.

- 1999 **Southern California Gas Company, Belridge Oilfield Maintenance, Kern County.** Monitoring during pipeline corrosion repair in the San Joaquin Valley, with emphasis on the San Joaquin kit fox, San Joaquin antelope squirrel and the blunt-nosed leopard lizard. For parent firm.
- 1999 **Southern California Gas Company, Line 8090 Leak Repairs, Kern County.** Monitor during repairs of several pinhole leaks in the valley near Taft. Emphasis on the San Joaquin kit fox, Hoover's woolly-star, blunt-nosed leopard lizard, and San Joaquin antelope squirrel. For parent firm.
- 1999 **Questar Pipe Line Company, Habitat Mapping of Line 90 in California.** Mapping of habitats using aerial photos and ground-truthing of an approximately 250-linear mile segment of pipeline.
- 1999 **Questar Southern Trails Pipeline, California and Arizona Interconnects.** Field surveys of Topock Interconnect and Transwestern Interconnect sites, with emphasis on sensitive species and the desert tortoise.
- 1999 **Tosco PN10 Pipeline Project, Elk Hills, Kern County.** Crew member conducting preactivity surveys and monitoring during construction of a 20-linear mile pipeline at Elk Hills. Emphasis on several listed species, including the San joaquin kit fox, blunt-nosed leopard lizard, giant kangaroo rat, and Hoover's woolly-star.
- 1999 **Arroyo Toad Surveys, San Bernardino and Cleveland National Forests.** Worked as a member of a team conducting systematic surveys of several drainages for the endangered arroyo toad for the U.S. Forest Service.
- 1999 **Yellow-legged and Red-legged Frog Surveys, Cleveland and San Bernardino National Forests.** Worked as a member of a team conducting systematic surveys of several drainages for the endangered California red-legged frog and the yellow-legged frog for the U.S. Forest Service.
- 1999 **Metropolitan Water District Road Maintenance, San Bernardino County.** Surveys of approximately 100 linear miles of roads for desert tortoises and other sensitive species prior to road grading. Preparation of summary report.
- 1999 **Cima Pump Station, San Bernardino County.** Field surveys and report preparation addressing construction and operation of a pipeline pump station in the eastern Mojave

Desert.

- 1999 **Questar Line 90 Conversion, California-Western Arizona Segments.** Review of database records, selected field surveys, and preparations of two reports for presentation by a parent consulting firm to the Federal Energy Regulatory Commission for a 600-linear mile pipeline conversion from crude oil to natural gas transport.
- 1998 **Questar Pipe Project, San Bernardino and Riverside Counties.** Surveys and preparation of a draft report as a subconsultant to a larger firm.
- 1998 **Southern California Gas Company Road Maintenance, San Bernardino and Riverside Counties.** Monitoring of road grading for tortoises and other sensitive species in the Mojave Desert. Preactivity surveys and environmental compliance training of personnel.
- 1998 **Summit Valley Ranch Arroyo Toad Survey, San Bernardino County.** Surveys of two drainages for endangered arroyo toads, calculations of estimated population size using field-generated data. Summary report.
- 1998 **R Ranch Sensitive Plant Survey, Riverside County.** Sensitive plant survey of proposed development site in the San Jacinto Mountains.
- 1998 **Interstate 15 Mohave River Crossing Arroyo Toad Survey, San Bernardino County.** Surveys of river channel and banks at highway overcrossing for the endangered arroyo toad.
- 1998 **Hi Grade Plant Transects, San Bernardino County.** Survey member establishing baseline at mine site for later site restoration work.
- 1998 **Calnev Biological Assessment, Southern California-Nevada.** Continued development of project-wide permit allowing for operations and maintenance of interstate pipeline corridor in endangered species habitats.
- 1998 **Greenleaf II Reservoir Project, Orange County.** San Diego horned lizard habitat evaluation of small proposed reservoir site in Whittier.
- 1998 **Glamis Imperial Project, Imperial County.** Review of draft biological opinion for large-scale mining operation.
- 1998 **Aera Wastewater Line, Kern County, California.** Surveys for San Joaquin kit fox, blunt-nosed leopard lizard and other listed and sensitive species west of Bakersfield.
- 1998 **Valley Waste Project, Kern County.** Surveys for San Joaquin kit fox, blunt-nosed leopard lizard and other listed and sensitive species west of Bakersfield.

- 1998 **Calspar Mine, San Bernardino County.** Site surveys and preparation of a summary report for a small-scale mining operation southeast of Barstow.
- 1998 **Temecula Wash Horned Lizard Monitoring, Riverside County.** Continued surveys and monitoring of release area for San Diego horned lizards.
- 1998 **Mesquite Mine, Imperial County.** Preactivity surveys of exploratory drilling area for desert tortoises.
- 1998 **Edwards Air Force Base Water Pipeline, Kern County.** Monitoring during trenching and placement of water pipeline near Phillips Lab area.
- 1998 **Edwards Air Force Base Homestead Wellsite Closures, Los Angeles and Kern Counties.** Monitoring during groundwater testing and well closure on the base.
- 1998 **Needles Landfill, San Bernardino County.** Desert tortoise monitoring during construction of perimeter landfill fence. Endangered species compliance training for staff.
- 1998 **ARCO Orion Project, California.** Surveys, monitoring, and endangered species compliance training during purging and monitoring of a 16-inch crude oil line in the Mojave Desert involving approximately 100 personnel.
- 1998 **ARCO Pipe Line Maintenance and Operations Projects, San Bernardino County.** Surveys, monitoring and reports for approximately 35 separate projects along a 150-linear mile segment of crude oil pipeline in the Mojave Desert.
- 1997 **Metropolitan Water District Road Maintenance, Nevada-California.** Surveys of 183 miles of maintenance roads in the Mojave Desert for sensitive species including the desert tortoise. Preparation of summary report for the agencies.
- 1997 **ARCO Pipe Line Operations and Maintenance Projects, Riverside and San Bernardino Counties.** Surveys, monitoring and report addressing approximately 40 separate projects over the calendar year.
- 1997 **Interstate Highway 15 Widening, San Bernardino County.** Member of team conducting desert tortoise and other sensitive species surveys along highway corridor between Victorville and Barstow.
- 1997 **Mountain Falls Survey, Riverside County.** Bio survey of proposed golf course site, including checks of spring area for sensitive amphibians including the red-legged frog.
- 1997 **Shadow Rock Amphibian Survey, Riverside County.** Combination of red-legged frog and

arroyo toad survey of proposed golf course site near Palm Springs.

- 1997 **Victorville Landfill Survey, San Bernardino County.** Desert tortoise survey of proposed landfill expansion area.
- 1997 **La Quinta Traditions Golf Course, Riverside County.** Participated in survey of large golf course project site near Palm Springs.
- 1997 **Sunwest Sensitive Plant Survey, Riverside County.** Participated in surveys for several listed and sensitive plants on a large-scale sand and gravel operation.
- 1997 **Picacho Peak Exploratory Drilling, Imperial County.** Completed survey and prepared report addressing 15 exploratory drill holes for a proposed mining operation near Picacho Peak.
- 1997 **Airtouch Comm Sites, San Bernardino County.** Completed surveys and prepared report addressing the installation of six comm sites in the Mojave Desert.
- 1997 **Elk Hills Sensitive Plant Survey, Kern County.** Participated in a systematic survey over most of NPR-1 for listed and sensitive plants for the U.S. Department of Energy.
- 1997 **Western Geophysical Seismic Survey, Kern County.** Participated in surveys for T+E species in the Belridge Oilfield.
- 1997 **Big Morongo Canyon Pipeline Realignment, Riverside County.** Monitor during pipe realignment for the Southern California Gas Company.
- 1997 **Big Morongo Canyon Plant Survey.** Systematic survey of canyon and tributaries for the endangered triple-ribbed milk-vetch. Summary report for agencies.
- 1997 **CalWest Spring Floral and Revegetation Survey, riverside County.** Sensitive plant survey of large-scale sand and gravel operation.
- 1997 **Amboy Quarry Vegetation Transects, San Bernardino County.** Participated in the collection of baseline plant data to be used for later project monitoring and revegetation success.
- 1997 **Temecula Creek Coast Horned Lizard Relocation Study, Riverside County.** Participated in the capture, marking and release with subsequent monitoring of 10 San Diego horned lizards on to a rehabilitated project site.

- 1997 **Rand Mining Clearance Survey, Kern County.** Completed desert tortoise survey of approximately 40-acre portion of mine and prepared summary report.
- 1997 **American Girl Mine Drillsites, Imperial County.** Completed survey of approximately 15 exploratory drilling sites and prepared summary report.
- 1996 **AirTouch Cellular Comm Sites, Riverside County.** Completed survey of two cell phone comm sites and prepared summary report.
- 1996 **California City Golf Course, Kern County.** Participated in survey of approximately 1,200 acre area north of Highway 58 for desert tortoises and other listed and sensitive species.
- 1996 **ARCO Line 90 Rectifiers, San Bernardino County.** Completed initial surveys, monitoring and post-project report for the installation of 10 rectifiers in the Mojave Desert.
- 1995 **Eagle Mountain Landfill, Riverside County.** Reviewed court decision on landfill as it related to endangered and sensitive species. Prepared summary brief for client.
- 1995 **American Girl Mine, Imperial County.** Completed survey and report of buildout of ore processing area on mine.
- 1995 **Coalinga Cogeneration Company, Fresno County.** Completed annual endangered species compliance monitoring of cogeneration project in the Coalinga Oilfield.
- 1995 **Mendenhall Property Dispute, Washington County, Utah.** Assisted property owner in HCP area in negotiations with the U.S. Fish and Wildlife Service. Settled satisfactorily to both entities.
- 1995 **Southern California Gas Company, Kern County.** Provided deposition and expert witness testimony in California Superior Court on endangered species and the Endangered Species Act.
- 1995 **ARCO Pipe Line Monitoring, San Bernardino County.** Completed required reports, conducted preactivity surveys, on-site monitoring during projects, and preparation of year-end agency reports for approximately 60 different operations and maintenance projects.
- 1995 **Big Morongo Canyon Pipeline Realignment, Riverside County.** Completed initial site surveys and report addressing realignment of about two miles of exposed pipe in a riparian stream,. Also completed draft environmental assessment for the U.S, Bureau of Land Management. Met with agencies to review endangered species and wetland

permitting and protection measures. Developed environmental compliance guide specifically for project crew. Monitored site during project. Completed post-project evaluation and monitoring report.

1995 **Rand Water Pipeline Construction, Kern County.** Completed pre-project survey and project monitoring during construction of about two miles of 10-inch water pipeline across desert tortoise habitat.

1995 **Rand Project Clearance Surveys, Kern County.** Completed clearance of approximately 800 acres for the desert tortoise as a mitigation measure for the project EIS. Captured, marked and released 14 desert tortoises from the project site. Completed post-project monitoring report for agencies.

1995-96 **Calnev Pipeline Company, California-Nevada.** Preparation of draft biological assessment addressing ongoing operations and maintenance of over 250 miles of pipelines in the Mojave Desert. Meetings with agency staffs during preparation.

1994 **Southern California Gas Company Programmatic Permit.** Preparation of biological assessment addressing ongoing operations and maintenance over 1,100 miles of natural gas pipelines in the California Desert. Meetings with agency staffs during preparation.

1994-95 **Southern Nevada Water Authority, Las Vegas.** Preliminary scoping surveys for T+E species along various project alternative routes for the secondary system for the City of Las Vegas. Species included the desert tortoise, bearpaw poppy, sticky buckwheat, relict leopard frog, and arroyo toad.

1994-97 **Chemgold Imperial Project, Imperial County.** Conducted surveys of over 2,000 acre proposed mine site and associated road and transmission line corridors. Prepared biological assessment, assisted in the preparation of the project EIS/EIR. Monitored exploratory drilling of about 300 test holes on the site. Participated in negotiations with agencies on project compensation, incidental take limits and mitigation.

1994 **Line 90 Crude Oil Leak, San Bernardino County.** Monitored cleanup of crude oil leak in the Mojave Desert near Yucca Valley.

1994 **City of Bakersfield Northeast Sewer Trunkline Habitat Conservation Plan, Kern County.** Preparation of a multi-species HCP for buildout on north side of the city. Biological assessment, draft biological opinion, and draft State 2081 permit for project.

- 1994 **Rand Mine, Kern County.** Preconstruction surveys, reports and monitoring of two mile pipeline through desert tortoise habitat.
- 1994-95 **Federal Highway Administration, Ft. Irwin Road Expansion, San Bernardino County.** Linear surveys, biological assessment, and draft biological opinion for desert tortoises and sensitive plants on a 2.8 linear mile climbing lane improvement through Pickhandle Pass. Construction monitoring.
- 1994 **Briggs Mine Project, Inyo County.** Completed desert tortoise survey of portion of mine site and prepared summary report.
- 1993 **Crude Oil Pipeline Recoat Project, San Bernardino County.** Completion of pipeline preactivity survey for the desert tortoise and other sensitive species. Preparation of associated report.
- 1993 **Unocal Endangered Species Compliance Training Course.** Preparation of materials and presentation of an endangered species course with Unocal employees in the San Joaquin Valley. Field review to identify species, sign, and to demonstrate survey methods as well.
- 1993 **Wheaton and Afton Regenerator Facility Survey, San Bernardino County.** Wildlife and sensitive plant survey and report preparation of two AT&T sites in the Mojave Desert.
- 1993 **Hectorite Mine Tortoise Clearance Survey, San Bernardino County.** Clearance survey of approximately 150-acre mine site in the central Mojave Desert.
- 1993 **Crude Oil Pipeline Segment Replacement, San Bernardino County.** Endangered species survey for Four Corners Pipe Line Company and report preparation.
- 1993 **Morongo Canyon Washout Survey, Riverside County.** Endangered species survey of crude oil pipeline washout in the Big Morongo Canyon Area of Critical Environmental Concern. Associated report preparation and development of site protection measures.
- 1993 **Rand Mine Project Survey, Kern County.** Systematic inventory of 2,000+ acre large-scale gold mine operation for plants and wildlife, emphasizing the desert tortoise and Mohave ground squirrel. Conducted with a crew of 5 biologists. Preparation of biological assessment and development of associated draft State 2081 and Federal permits

- 1993 **Baltic Mine Project Monitoring, Kern County.** Desert tortoise compliance monitoring during site preparation of large-scale open pit gold mining operations. Completion of associated monitoring report.
- 1993 **Line 90 Road Maintenance Survey, San Bernardino County.** Survey of approximately 45-linear mile road alignment in the central Mojave Desert for desert tortoises and other sensitive species. Associated report preparation.
- 1993 **Four Corners Pipe Line Company (ARCO) Programmatic Permit, State of California.** Preparation of draft biological assessment addressing ongoing maintenance over 3,800 linear miles of crude oil lines encompassing 40% of California. Meetings with agency staffs. Ongoing project.
- 1993 **Northeast Bakersfield Sewer Trunkline, Kern County.** Field surveys of 13.9 mile alignment. Preparation of biological assessment and biological resources chapter for EIR.
- 1993 **Industrial Asphalt Quarry, San Bernardino County.** Desert tortoise surveys and report preparation. Monitoring.
- 1993 **Piute Tribe Project, Clark County, Nevada.** Participation in systematic desert tortoise surveys.
- 1993 **Oak Summit Project, San Bernardino County.** Livetrapping emphasizing the Los Angeles pocket mouse.
- 1993 **M.H. Whittier Lease Survey, Coalinga Oilfield, Fresno County.** Endangered Species survey and report.
- 1992 **Four Corners Pipe Line Maintenance, San Bernardino County.** Completion of preactivity survey of rewrap line segments for the desert tortoise. Preparation of State 2081 and draft Section 7 opinion. Monitor during project. Preparation of post-monitoring report for agencies.
- 1992 **Morongo Valley Pump Station, San Bernardino County.** Sensitive plant/wildlife survey. Preparation of summary report for county review.
- 1992 **Aerial Photoanalysis Monitoring, Fresno County.** Interpretation of pre- and post-construction photos for monitoring program on cogeneration project. Work also included San Joaquin kit fox survey of plant site. Preparation of monitoring report for submittal to agencies by company.
- 1992 **Gold Mining project, Kern County.** Preparation of biological assessment addressing open pit mine expansion in desert tortoise habitat.

- 1992 **Raptor Monitoring, SeaWest Windfarm, Kern County.** Periodic monitoring of large wind turbine project near Mojave, using standardized protocols developed by the California Energy Commission.
- 1992 **Portland Cement Mohave Ground squirrel Habitat Evaluation.** Evaluation of large aggregate mine site near Victorville, using CDFG protocols for habitat evaluation.
- 1992 **Victorville-Bakersfield Fiber-optic Line.** Assisted as project manager with surveys of 145 linear mile line for listed species with crew of 10 biologists. Meetings with agencies. Future preparation of State 2081 permit and Federal draft Section 7 opinion.
- 1992 **Adelanto Subdivision, San Bernardino County.** Desert tortoise/Mohave ground squirrel survey of subdivision.
- 1992 **I-5 Wastewater Treatment Plant, Kern County.** Preparation of state Endangered Species Management Permit.
- 1992 **Kern County Landfills, Kern County.** Assisted as field supervisor in T+E surveys of 15 major County landfill sites for plants and wildlife. Preparation of reports, meetings with agencies and future development of State 2081 and Federal 10(a) permits.
- 1992 **Lockwood Valley Subdivision, Ventura County.** Small mammal livetrapping survey, focusing on the Federal candidate Tehachapi pocket mouse.
- 1992 **Salt River Project, Quemado, New Mexico.** Vegetation transects for mining reclamation project.
- 1992 **California City Mohave Ground Squirrel Habitat Evaluation.** Evaluation using CDFG protocols for Mohave ground squirrel habitat.
- 1992 **Line 63 Relocation, Kern County.** Tehachapi slender salamander survey of proposed crude oil pipeline re-route south of Bakersfield.
- 1992 **Mountain High Water Line, Los Angeles County.** Small mammal livetrapping and plant survey of proposed 8-mile line segment.
- 1992 **Nipton Road Water Line, San Bernardino County.** Desert tortoise survey and monitor during construction.

- 1992 **Apple Valley Landfill, San Bernardino County.** Desert tortoise survey.
- 1992 **Griffin Subdivision, Kern County.** Preparation of draft Section 7 opinion addressing issuance of Section 10(a) permit for project.
- 1992 **Whitewater-Dillon Road Fiber-optic Line, Riverside County.** Sensitive species survey of 25-linear mile line.
- 1992 **PacBell Fiber-optic Line, Kern County.** Sensitive species survey of 2.8 linear mile line.
- 1992 **AT&T Road Maintenance, San Bernardino and Clark Counties.** Survey of 32-linear mile road segment and report preparation.
- 1992 **Ward Valley Cleanup Site, San Bernardino County.** Desert tortoise/sensitive plant survey, with report and employee training.
- 1992 **Barron Mine Project, Kern County.** Supplemental desert tortoise/sensitive plant survey.
- 1991 **Alpine Butte Subdivision, Los Angeles County.** Preparation of biota report for 160-acre subdivision.
- 1991 **Pipeline 63 Re-route, Kern County.** Biota survey and report for pipeline segment in Grapevine Canyon.
- 1991 **Four Corners Pipeline CPU Site Surveys, San Bernardino County.** Desert tortoise surveys for about 6-8 sites along a pipeline corridor in the eastern Mojave Desert.
- 1991 **Delano State Prison, Kern County.** Preparation for a site management and monitoring plan for endangered species.
- 1991 **Keene Ranch Project, Kern County.** Assistance during development of final EIR for project.
- 1991 **Yellow Aster Mine, Kern County.** Field surveys for desert tortoise and several expansion projects. Preparation of 2081 state Endangered Species Management Permit and draft biological opinion.
- 1991 **Mojave River Levee Project, San Bernardino County.** Desert tortoise survey near Barstow.
- 1991 **Lost Hills Wastewater Treatment Plant, Kern County.** Survey for listed wildlife and plant species.

- 1991 **Soda Lake Gold Processing, San Bernardino County.** Preparation of draft biological opinion for project.
- 1991 **Jasmin Development, Kern County.** Sensitive wildlife and plant survey of proposed 1,600-acre housing development near Bakersfield.
- 1991 **Excel Minerals Millsite, Kern County.** Sensitive wildlife and plant survey southwest of Bakersfield.
- 1991 **Van and Stowell Subdivision, Kern County.** Sensitive plant and wildlife survey near Frazier Park.
- 1991 **Coalinga Cogeneration Project, Fresno County.** San Joaquin kit fox survey of staging/laydown area.
- 1991 **M.H.Whittier Star Lease, Fresno County.** San Joaquin kit fox.sensitive plant survey of oilfield expansion project.
- 1991 **AT&T Repeater Hut Station, San Bernardino County.** Desert tortoise survey of 19 comm sites in the central Mojave Desert.
- 1991 **McGinnis Creek Timber Project, Humboldt County.** Survey for sensitive amphibians within 700-acre proposed timber harvest area.
- 1991 **Jess Ranch, San Bernardino County.** Habitat evaluation for the Mohave ground squirrel.
- 1991 **Texaco Landfill Cleanup, Kern County.** Endangered species survey of four separate landfill sites in the southwestern San Joaquin Valley.
- 1991 **SeaWest Wind Farm, Kern County.** Part of team undertaking raptor monitoring study of 300 turbines.
- 1991 **Kern River Pipeline, San Bernardino County.** Tortoise monitor during major natural gas pipeline construction project.
- 1991 **Granite Construction Company Quarry Site, Los Angeles County.** Wildlife and plant survey.
- 1991 **Whittier Station 18, Los Angeles County.** Sensitive plant and wildlife survey for the Southern California Gas Company.
- 1991 **Mtn High Ski Resort Pipeline, Los Angeles County.** Wildlife and plant survey and report.

- 1991 **Los Angeles Cellular Phone Comm Site, Riverside County.** Wildlife and plant survey and report.
- 1991 **Mid-set Cogeneration Pipeline, Kern County.** Survey form the San Joaquin kit fox, giant kangaroo rat and San Joaquin antelope squirrel.
- 1991 **Zion Lutheran Church Site, San Bernardino County.** Desert tortoise survey and report.
- 1991 **Open Pit Mine, Kern County.** Desert tortoise survey near Randsburg, with report.
- 1991 **Mine Ore Processing Site, Kern County.** Desert tortoise survey and relocation near Randsburg, with report.
- 1991 **PacTel Comm Sites, San Bernardino County.** Wildlife and plant surveys of 13 separate comm sites, with report.
- 1991 **Adair Engineering Project, Kern County.** San Joaquin kit fox and Tipton kangaroo rat study.
- 1991 **Mountain Mesa Kissach Property, Kern County.** General wildlife survey.
- 1991 **Line 90 Pipeline Project, San Bernardino County.** Desert tortoise surveys of two pipeline segments. Preparation of draft biological opinion and State 2081 permit for project.
- 1991 **Industrial Asphalt Project, San Bernardino County.** Desert tortoise survey.
- 1991 **South Needles Treatment Ponds, San Bernardino County.** Desert tortoise survey for the Southern California Gas Company.
- 1991 **Irvine Ranch, Orange County.** Survey of about 50,000 acres for sensitive wildlife species, emphasizing the orange-throated whiptail and San Diego horned lizard.
- 1991 **Mountain Investment Company Purchase, San Bernardino County.** Desert tortoise survey.
- 1990 **Fort Cady Mines, San Bernardino County.** Linear surveys for the desert tortoise and rare plants.
- 1990 **NL Hector Mines, San Bernardino County.** Linear transect surveys for desert tortoises and rare plants.
- 1990 **City of Barstow Landfill, San Bernardino County.** Linear transects for the desert tortoise.

- 1990 **Victorville Landfill, San Bernardino County.** Desert tortoise survey.
- 1990 **City of Lenwood Landfill, San Bernardino County.** Desert tortoise survey
- 1990 **Sitting Bull Developments, San Bernardino County.** Desert tortoise survey.
- 1990 **SeaWest Wind Energy Project, Kern County.** Project manager of team of biologists conducting survey of 1,500+ acre wind farm. Included small mammal livetrapping.
- 1990 **PG&E Line 300 Reinforcement, Barstow, California**
Tortoise survey of pipeline right-of-way
- 1990 **PG&E Line 300 Reinforcement, Bakersfield, California**
San Joaquin kit fox and blunt-nosed leopard lizard survey of pipeline right-of-way segment
- 1990 **DaCin Development, Beaumont, California**
Sensitive species survey and mitigation plan for proposed 450-acre land sale.
- 1990 **Lake Success Reservoir Enhancement, Tulare County**
Survey for San Joaquin kit fox and other listed species at reservoir site and associated Water District lands.
- 1990 **Lake Kaweah Reservoir Enhancement, Tulare County**
Survey for San Joaquin kit fox, blunt-nosed leopard lizard, and other listed species at reservoir site and associated Water District lands.
- 1990 **Carl Jones Construction Company, Apple Valley, CA**
Development of a Habitat Conservation Plan for a permit from the U.S. Fish and Wildlife Service to allow development on tortoise habitat.
- 1990 **Salinas River Cogeneration Project, Monterey County**
Endangered species survey of plant site and adjacent steam field service area.
- 1990 **Sargent Canyon Cogeneration Project, Monterey County**
Endangered species survey of plant site and adjacent steam field service area.

- 1990 **SoCal Gas 235 Pipeline Project**, Victorville, California
Mohave ground squirrel records search of proposed pipeline corridor, extending from Newberry to Silver Lakes area.
- 1990 **Texaco Refinery Sumps Cleanup**, Bakersfield, California
Survey of section of refinery for San Joaquin kit fox and other listed species.
- 1990 **Rancho Clarita Development**, Ventura County, California
Wildlife survey of proposed development north of Los Angeles
- 1990 **McMillan Canyon Road Realignment**, San Luis Obispo County
Endangered species survey of proposed highway realignment near the community of Shandon.
- 1990 **Gartner Subdivision**, Bakersfield, California
Endangered species survey of proposed commercial subdivision in north Bakersfield area.
- 1990 **Shandon Properties**, San Luis Obispo County, California
Endangered species survey of three parcels proposed for subdivision.
- 1990 **DeGennaro Development**, Riverside, California
Preparation of Streambed Alteration Agreement for proposed development in Riverside affecting riparian stream.
- 1990 **Coalinga Cogeneration Project**, Fresno County, California
Endangered species surveys and preparation of both State and Federal permits allowing for future development in endangered species habitat.
- 1990 **Rubidoux Sports Complex**, Riverside County, California
Wildlife and plant surveys and preparation of Streambed Alteration Agreement for proposed sports development.
- 1990 **George Dube Subdivision**, Phelan, California
Desert tortoise survey.
- 1990 **Woodridge Development**, Kern County, California
Wildlife and plant survey of proposed 2,000-unit subdivision.

- 1990 **Silver Lakes Development**, San Bernardino County
Desert tortoise survey.
- 1990 **Cushenberry Grade Sand and Gravel Quarry**, Lucerne Valley, California. Desert tortoise survey.
- 1990 **Excel Mineral Minesite and Millsite**, Kern County, California. Survey for San Joaquin kit foxes and other listed species.
- 1990 **Unocal Cleanup-Section 32G**, Kern County, California
Endangered species survey, including San Joaquin kit fox, blunt-nosed leopard lizard, and giant kangaroo rat.
- 1990 **Apple Valley Subdivision**, Apple Valley, California
Desert tortoise survey
- 1990 **Ridgecrest Golf Course**, Ridgecrest, California
Preparation of a Habitat Conservation Plan and related documents for the City addressing future development in desert tortoise habitat.
- 1990 **Buttonwillow Race Circuit Course**, Kern County, California
Surveys for Tipton kangaroo rats and other endangered species.
- 1989 **Chevron Industrial Complex**, Bakersfield, California
San Joaquin kit fox survey.
- 1989 **China Grade Landfill**, Bakersfield, California
Endangered species survey of proposed expansion of City landfill.
- 1989 **Triam Development**, Tehachapi, California. Wildlife and plant survey, focusing on sensitive species.
- 1989 **Salcido Construction Company Subdivision**, Tehachapi, California. Wildlife and plant survey, focusing on sensitive species.
- 1989 **Unocal Cleanup, NPR-2**, Kern County, California
Endangered species survey for San Joaquin kit fox, blunt-nosed leopard lizard, San Joaquin antelope squirrel, and giant kangaroo rat.