



COOPER BIOLOGICAL SERVICES

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Highlights

- Special status and general bird surveys and nest monitoring
- Small mammal trapping and identification
- Herpetological Surveys and Identification (including arroyo toad and red-legged frog)
- General wildlife inventories and butterfly surveys (including Hermes Copper)
- Wildlife tracking
- Vegetation mapping, restoration monitoring
- Botanical surveys

U.S. Fish and Wildlife Service Recovery Permit No. TE170389-6

Survey and nest monitoring:

- Southwestern Willow Flycatcher
- Least Bell's Vireo
- Coastal California Gnatcatcher
- Quino Checkerspot Butterfly
- Vernal Pool Branchiopods
- Western Yellow-billed Cuckoo

California Department of Fish and Game Scientific Collecting Permit No. SCP-9719

Survey, live trap, handle, salvage small mammals, reptiles and amphibians, including:

- Yuma Hispid/Colorado River Cotton Rat
- Palm Springs Pocket Mouse
- Flat-tailed horned Lizard

*Presence/absence survey and nest monitoring**

- Willow Flycatcher (all subspecies)*
- Least Bell's Vireo*
- Arizona Bell's Vireo*
- Coastal California Gnatcatcher*
- Western Yellow-billed Cuckoo
- California Spotted Owl
- Elf Owl

Education

California Polytechnic University, San Luis Obispo, CA. Bachelor of Science- *Ecology & Systematic Biology (2003)*

Mr. Cooper is co-owner and Principal Biologist of Halcyon Environmental. Through a multi-disciplinary education and extensive project experience, he is very experienced working in the areas of ornithology, botany, mammalogy, and herpetology.

As a field biologist for more than 13 years, Mr. Cooper has worked on projects from Alaska to Mexico, spending thousands of hours in the field conducting biological surveys, focused sensitive species surveys, small mammal trapping, reptile and amphibian surveying and handling, vernal pool branchiopod surveys, identifying plants and construction monitoring. In addition to terrestrial bird species he has accumulated hundreds of hours capturing, handling, banding, bleeding and taking biopsies and diet samples from hundreds of seabirds. He has participated in and managed many aspects of focused wildlife surveys, habitat assessments and exotic predator control programs. Mr. Cooper is very experienced writing habitat assessments, technical reports, nesting bird survey reports, and focused sensitive species survey reports.

He has worked for a variety of clients that have included overhead utilities, natural gas, commercial developers and water utilities companies. Mr. Cooper has experience working with Section 7 of the Endangered Species Act, California Endangered Species Act, Section 1600 of the California Fish & Game Code, Migratory Bird Treaty Act, and Section 404 & 401 of the Clean Water Act. As a Southern California native, he possesses a well-rounded background in California natural history as well as an understanding of wildlife distribution and identification of local flora and fauna.





Avian Experience

SoCalEdison, Valley-Ivyglen/Alberhill Riparian Bird Surveys, Lake Elsinore, CA (2017)
Conducted protocol Least Bell's Vireo, Southwestern Willow Flycatcher, and Yellow-billed Cuckoo Surveys along a 23-mile transmission project within suitable habitat.

SANDAG, South Bay BRT Project, Chula Vista, CA (2017) Conducted 30-Day Burrowing Owl clearance and nesting bird survey within a small 4 acre survey area.

North Eastern Sphere Annexation Area California Gnatcatcher Surveys, Rancho Cucamonga (2017)
Conducted protocol presence/absence surveys within suitable habitat in western Riverside County.

Meadowlark Canyon Residential Project, California Gnatcatcher Monitoring, San Marcos, CA (2017) Conducted pre-construction California Gnatcatcher sweeps prior to construction activities. Monitored and relocated animals during vegetation removal.

SDG&E, TL636/639 Wood-to-Steel Biological Avian Surveys, Santee, CA (2017) Conducted protocol level California Gnatcatcher, Least Bell's Vireo, and Burrowing Owl surveys within suitable habitat along an existing transmission line from Mission Trails to Miramar MCAS. In addition, conducted focused rare plant surveys during early and late spring.

Blue Consulting, California Gnatcatcher Presence/Absence Survey, Oceanside/Escondido (2017) Conducted protocol level presence/absence surveys for California Gnatcatcher in support of identifying prospective mitigation properties.

SDG&E, Mission Skills Substation California Gnatcatcher Monitoring, San Diego, CA (2017)
Conducted a nesting bird survey and monitored a California Gnatcatcher nest during nearby construction activities.

Confidential Client, California Gnatcatcher Presence/Absence Survey, Pala (2016,2017)
Conducted a protocol level presence/absence survey for California Gnatcatcher in support of identifying prospective mitigation property.

SoCalEdison, Moorpark-Newbury 66 kV Subtransmission Line Project, Moorpark, CA (2016) Conducted California Gnatcatcher clearance surveys and construction monitoring within suitable habitat support of the transmission line replacement/reconducting.

Confidential Client, Yellow-billed Cuckoo protocol survey, San Bernardino, CA (2016) Conducted protocol Yellow-billed Cuckoo surveys within suitable habitat in the San Bernardino Mountains.

SoCalEdison, Least Bell's Vireo Nesting Monitoring, Irvine, CA (2016) Conducted nest searching and monitoring of Least Bell's Vireo in support of ongoing maintenance activities along an existing transmission line.

SDG&E Sycamore to Peñasquitos Burrowing Owl Survey, San Diego, CA (2015,2016) Conducted protocol level Burrowing Owl surveys in support of the biotechnical report for a proposed transmission line.

San Miguel Water District, San Juan Creek Nesting Bird Survey, San Juan Capistrano (2016)
Conducted a pre-construction nesting bird survey in support of construction occurring within the San Juan Creek.

Bolsa Chica Shorebird Monitoring, Bolsa Chica, CA (2015, 2016) Conducted shorebird counts within study polygons at Bolsa Chica Ecological Reserve.

City of San Diego, Peñasquitos Creek emergency water main leak project, Carmel Valley, CA (2015)
Conducted biological monitoring during excavation activities in support of locating a water main leak adjacent to Peñasquitos Creek within Torrey Preserve in order to minimize impacts to Least Bell's Vireo suitable habitat.



The Rilington Group, 30-Day Burrowing Owl Clearance Survey, Indio, CA (2015) Conducted a 30-Day Burrowing Owl clearance survey and general nesting bird survey in support of proposed grading activities.

Confidential Client, California Gnatcatcher Presence/Absence Survey, Poway, CA (2015) Conducted a protocol level CAGN survey in occupied habitat that will be used as future mitigation property.

Caltrans Schuyler Heim Bridge Replacement, Port of Long Beach, CA (2015) Conducted avian nest surveying and monitoring, implementing passive nesting deterrents, and monitoring the dismantling activities of the old bridge.

SDG&E, Sunrise Operations & Maintenance Nesting Bird Surveys, San Diego County, CA (2015) Conducted general and California Gnatcatcher pre-construction nesting bird surveys along various locations of the existing alignment in support of overhead, road, and helicopter activities.

Montebello Annual California Gnatcatcher Point Count, Montebello, CA (2015) Conducted California Gnatcatcher population point counts within a recovering area of coastal sage scrub.

Mill Creek Bridge Project, Mentone, CA (2015) Conducted protocol level California Gnatcatcher presence/absence surveys at a 4 acre site in occupied habitat.

Imperial Irrigation District (IID) Path 42 Transmission Upgrade Project, Coachella, CA (2014-2015) Conducted preconstruction nesting bird surveys along the 20 mile long transmission project. Monitored construction activities and ensured compliance with the project's mitigation measures and completed daily monitoring/survey reports.

SDG&E Wood-to-Steel, Tie-Line 649, Otay Mesa, CA (2014) Conducted preconstruction riparian bird surveys for Willow Flycatcher, Least Bell's Vireo and Western Yellow Billed Cuckoo along 5.5 miles of the Otay River.

SDG&E Wood-to-Steel Tie-Line 637, Ramona, CA (2014) Conducted preconstruction nesting bird surveys and nest monitoring along the 16 miles transmission line, monitored active nests in the vicinity of construction activities, and ensured construction compliance with project specific mitigation measures.

Institute for Wildlife Studies, San Clemente Island Sage Sparrow Annual Baseline Survey- San Clemente Island, CA (2013-2014) Conducted annual baseline surveys to determine the population of the federally threatened San Clemente Island Sage Sparrow. Several individuals were identified and their locations logged with a GPS unit in boxthorn maritime scrub habitat.

Utilities Installation Project, Camp Pendleton, CA (2013) Conducted preconstruction nesting bird surveys and focused California Gnatcatcher surveys along several miles of right-of-way for various electrical transmission and pipeline installation projects.

Knottwood Way Bridge Project, Bonsall, CA (2011) Conducted pre-construction Least Bell's Vireo and Southwestern Willow Flycatcher surveys at a 6 acre site along a tributary of the San Luis Rey River and made avoidance recommendations for construction activities.

Laguna Canyon Wetlands and Riparian Mitigation Project Laguna Beach, CA (2010-2011) Conducted Least Bell's Vireo and Southwestern Flycatcher surveys in a 120 acre riparian restoration site.

Temecula Medical Center Project, Riverside County, CA (2010) Conducted protocol presence/absence surveys for Southwestern Willow Flycatcher on a 2 acre site.

City of Industry Recycled Water Project - Zone 900 Reservoir Project (2010) Conducted protocol California Gnatcatcher surveys on the 4 acre project site, and located an incidental Least Bell's Vireo pair nesting within the construction buffers.



Los Angeles-San Diego-San Luis Obispo(LOSSAN) San Onofre to Pulgas Double Track Railway Upgrade Project, Camp Pendleton, CA (2010) Conducted protocol California Gnatcatcher surveys along a 6 mile stretch of railway, identifying numerous pairs of the target species.

Pio Pico Energy Center Project, Otay Lake, California (2010) Collected baseline biological data for a proposed 350 acre project site with high biodiversity and many sensitive species. Conducted Least Bell's Vireo and Southwestern Willow Flycatcher surveys.

Burrowing Owl and Fairy Shrimp Surveys, Perris, CA (2010) Conducted full protocol surveys on a 1,100 acre site identifying several pairs of Burrowing Owl and active burrows. Assisted with Fairy Shrimp surveys and identifying special status shrimp species.

Riverside County Transportation Department (RCTD) Pigeon Pass Transportation Corridor Project, Moreno Valley, CA (2010) Conducted protocol Least Bell's Vireo, Southwestern Flycatcher and Yellow Billed Cuckoo surveys in suitable habitat on a 20-acre site.

USGS Bell's Vireo and Willow Flycatcher Surveys, Camp Pendleton, CA (2009) Responsible for conducting protocol surveys for 156 Least Bell's Vireo territories and nest monitoring for 16 of those territories in addition to one polygynous Southwestern Willow Flycatcher pair in areas with severe cowbird parasitism. Duties included plot-transect vegetation sampling, plant ID, cowbird egg removal, and measuring nests characteristics, and maintaining an electronic database of all data collected.

IID Habitat Conservation Plan Baseline Biological Surveys, Imperial County, CA (2007-2009) Assisted in developing and implementing a study design for this 3-year project (640,000 acre area), that focused on evaluating the habitat suitability and presence/absence of sensitive avian species with to establish a long-term monitoring plan and support the Imperial Valley NCCP.

All-American Canal Lining Wetland Restoration and Wildlife Monitoring Project, Imperial County, CA (2008) Conducted extensive literature review and site reconnaissance; assisted in the design of a rigorous avian monitoring study; conducted a pilot study to determine the feasibility of the initial survey methodology; conducted bird point count surveys to determine changes in relative abundance and distribution of wildlife species associated with wetland enhancement activities. Assisted in preparation of technical reports associated with studies.

Willow Flycatcher Survey and Nest Monitoring, Big Sandy River Bridge Widening Project, ADOT, Wikeup AZ (2007) While working under contract with the Arizona Department of Transportation, solely conducted surveys and monitoring of 21 Southwestern Willow Flycatcher territories to determine effects of a bridge-widening project over the Big Sandy River in Arizona. Duties included territory searching, nest monitoring, protocol level surveys and operation and maintenance of cowbird traps.

Desert Ranch Project Site, Indio, CA (2006) Conducted Burrowing Owl protocol surveys through transects on a 4,000 acre project site documenting numerous Burrowing Owl pairs.

Pine Valley Estates Project, Chino Hills, CA (2006) Conducted protocol level Least Bell's Vireo and general bird surveys and monitored nests of numerous passerine bird species on a 53 acre site.

LVSD School and Bridge Construction Project, Thousand Oaks, CA (2006) Monitored vegetation clearing and grading activities and conducted nesting bird surveys and associated nest monitoring.

Laysan Albatross foraging ecology study, Guadalupe Island, MX (2006) Under the direction of a UC Santa Cruz doctorate student, monitored nests of several dozen pairs of Laysan Albatross and assisted in data collection. Duties included collecting diet and blood samples, banding, attaching and retrieving satellite transmitters and stomach temperature loggers, conducted point counts for



terrestrial birds and assisted with small mammal trapping and predator control on the island.

Yerba Buena Elementary School Project, Agora Hills, CA (2005- 2006) Conducted nesting bird surveys and nest monitoring on this 10 acre site.

Bird Point Count and Insect Surveys, Irvine CA (2005) Conducted bird point counts and insect surveys at a 2 acre site along San Diego Creek.

Burrowing Owl Surveys, Ontario, CA (2005) Conducted protocol level Burrowing Owl surveys on a 260 acre site, identifying active burrows, pellets, and several pairs of Burrowing Owl.

Los Angeles Department of Public Works (LADPW) Debris Basin Maintenance Project, Los Angeles Co., CA (2005) Conducted nesting bird and protocol Least Bell's Vireo surveys at various sites throughout LADPW jurisdiction from Castaic to Pasadena and Thousand Oaks.

Serenity Estates Project, Wildomar CA (2005) Conducted nesting bird surveys on a 60 acre site.

Crown Valley Parkway Bridge Project, Mission Viejo, CA (2005) Conducted nesting bird surveys, nest monitoring, and Least Bell's Vireo protocol surveys identifying several pairs of vireo and nest of

Dayton Canyon Development Project, West Hills, CA (2005) Conducted nesting bird surveys and nest monitoring on a 28 acre site.

Northlake Housing Development, Castaic CA (2005) Conducted nesting bird surveys and construction monitoring on a 65 acre site.

UAF-Gulf Apex Predator Project, Kodiak Island, AK (2004) Conducted daily nest monitoring of various seabird species, primarily Black-legged Kittiwake, Tufted Puffin, and Glaucous-winged Gull. Participated in capturing, handling, banding, bleeding, fat excision and collecting diet samples from hundreds of these birds. Long days in the field including repelling to cliff nesting birds, overnight camping, daily small boat

operation, setup and maintenance of stationary and mobile radio-telemetry equipment.

California State Parks Snowy Plover and Least Tern Management Program, Pismo Beach, CA (2004) Performed daily nest searches and monitoring of egg and brood success of threatened Western Snowy Plover and endangered California Least Tern, including band combination ID, shorebird/seabird surveys, predator tracking, terrestrial bird surveys, as well as daily maintenance of vehicles and optics, intensive record keeping, and public relations.

California Condor Tracking Project, San Luis Obispo, CA (2003) While working with the U.S. Fish and Wildlife Service through Cal Poly State University, tracked California Condor movements using radio telemetry at Hi Mountain lookout (Poza, CA) as well as by vehicle. Staffed Hi Mountain visitor center, assisted with project set-up, conducted data collection of various plant, mammal, and bird surveys.

Ornithology student assistant and Lab Instructor, Cal Poly State University, CA (2003) Assisted students in the field with identification of bird species by sight and sound. Lab time was spent helping students learn the difference in bird phylogeny and interesting aspects of various bird families. Additionally, instructed the acoustics portion of the lab, helping students separate difficult species by call and song alone.

Coastal Seabird Research Project, Cal Poly State University, San Luis Obispo Coastline, CA (2002-2003) Developed a protocol as a basis for a long term study of seabird population dynamics and foraging locations along the San Luis Obispo County coastline. Performed two consecutive years of seabird counts including shorebird abundance. Analysis of results through regression and ANOVA statistics.

MAPS Bird Banding Assistant, Morro Bay, CA (2002-2003) Conducted mist netting, identification, aging and sexing of birds by plumage and reproductive condition.



Avian Museum Curatorial Supervisor Cal Poly State University, CA (2002-2003) Prepared study skins and live mounts of all species of birds including identification, aging, sexing and determining cause of death. Organized and maintained museum specimens, data logs, and records.

Butterfly Experience

SDG&E, TL636/639 Wood-to-Steel Biological Resource Surveys, Santee, CA (2017) Conducted protocol level Quino checkerspot butterfly, within suitable habitat along an existing transmission line from Mission Trails to Miramar MCAS.

Proctor Valley Quino Checkerspot Butterfly Surveys, Chula Vista, CA (2015, 2016) Conducted protocol level Quino checkerspot butterfly surveys and larval host/adult nectar source vegetation mapping within suitable habitat at a 350 acre site located near Otay Lakes. Larval host plant mapping for Hermes Copper butterfly was identified and mapped.

Baldwin & Sons, Village 13 Quino Checkerspot Butterfly Surveys, Chula Vista, CA (2016) Conducted protocol level Quino checkerspot butterfly surveys and larval host/adult nectar source vegetation mapping within occupied habitat at a 1,850 acre site located near Otay Lakes.

HomeFed Corporation, Fanita Ranch Quino Checkerspot Butterfly and California Gnatcatcher Surveys, Santee Lakes, CA (2016) Conducted protocol level Quino checkerspot butterfly surveys at a more than 2,000 acre site and California Gnatcatcher presence/absence within suitable habitat near Santee Lakes.

SDG&E, Cleveland National Forest Wood-to-Steel C78/TL625 Hermes Copper Protocol/Vegetation Mapping, Alpine, CA (2015,2016) Conducted County of San Diego protocol level surveys, host plant vegetation mapping, and suitable habitat

mapping of approximately 200 acres along an existing alignment.

San Diego Gas & Electric (SDG&E), Cleveland National Forest Wood-to-Steel C78/TL625 Hermes Copper Protocol/Vegetation Mapping, Alpine, CA (2015) As a CPUC approved surveyor, conducted County of San Diego protocol level surveys, host plant vegetation mapping, and suitable habitat mapping of approximately 200 acres along an existing alignment.

Proctor Valley Quino Checkerspot Butterfly Surveys, Chula Vista, CA (2015) Conducted protocol level Quino checkerspot butterfly surveys and larval host/adult nectar source vegetation mapping within suitable habitat at a 249 acre site located near Otay Lakes. Larval host plant mapping for Hermes Copper butterfly was identified and mapped.

US Navy Camp Monsoor, Quino Checkerspot Butterfly Surveys, Campo, CA (2015) Conducted protocol level Quino checkerspot butterfly surveys and larval host/adult nectar source vegetation mapping within 200 acres of suitable habitat near Campo.

Pio Pico Energy Center Project, Otay Lake, California (2010) Collected baseline biological data for a proposed 350 acre project site with high biodiversity and many sensitive species. Conducted Quino Checkerspot butterfly surveys.

Herpetological Experience

SDG&E, Cleveland National Forest Wood-to-Steel TL682/625B Arroyo Toad Monitoring, San Diego County, CA (2017) Conducted clearance surveys, construction monitoring, and Arroyo Toad relocations within active construction areas for the replacement of transmission lines.

SDG&E, Cleveland National Forest Wood-to-Steel Arroyo Toad Protocol Surveys, Alpine, CA (2016)



Conducted protocol level presence/absence arroyo toad surveys within suitable habitat.

SCE, Hazardous Tree Removal Project Arroyo Toad Surveys, Banning/Lake Arrowhead, CA (2015) Conducted diurnal and nocturnal presence/absence surveys within suitable habitat near San Bernardino National Forest in support of tree trimming along an existing SCE alignment.

Apex Contracting and Restoration, Santa Ysidora Restoration Project, Camp Pendleton, CA (2015) Conducted biological monitoring of restoration activities within arroyo toad habitat. His duties included ensuring the integrity of the arroyo toad exclusionary fencing and that no arroyo toads were harmed during construction activities.

BNSF Emergency Railway Repair Project, Needles, CA (2013) Monitored construction activities and vegetation removal, led morning tailboards, and cleared work areas for desert tortoise prior to work activities in occupied desert tortoise habitat. Collected vegetation data prior to removal for restoration purposes.

San Bernardino Department of Public Works Annual Road Grading, Afton Canyon, CA (2013) Monitored a grading crew in occupied desert tortoise habitat. Conducted hourly sweeps of the access road in order to prevent desert tortoise fatalities.

Knottwood Way Bridge Project, Bonsall, CA (2011) Conducted pre-construction Arroyo toad, surveys at a 6 acre site along a tributary of the San Luis Rey River and made avoidance recommendations for construction activities.

Desert Ranch Project Site, Indio, CA (2006) Conducted focused desert tortoise protocol surveys through transects on a 4,000 acre project site.

Mammalian Experience

SDG&E, Cleveland National Forest Wood-to-Steel Bat Habitat Assessment and Acoustic Night Surveys, SD County, CA (2016) Conducted bat night and day roosting habitat assessments along several tielines and recorded calls at various locations.

IID Habitat Conservation Plan Baseline Biological Surveys, Imperial County, CA (2007-2009) Assisted in developing and implementing a study design for this 3-year project (640,000 acre area), that focused on evaluating the habitat suitability and presence/absence of 84 sensitive plant, invertebrate, amphibian, reptile, bird, and mammal species with to a establish a long-term monitoring plan and support the Imperial Valley NCCP.

All-American Canal Lining Wetland Restoration and Wildlife Monitoring Project, Imperial County, CA (2008) Conducted extensive literature review and site reconnaissance; assisted in the design of a rigorous mammal monitoring study; conducted a pilot study to determine the feasibility of the initial survey methodology; conducted mammal track station surveys to determine changes in relative abundance and distribution of wildlife species associated with wetland enhancement activities. Assisted in preparation of technical reports associated with studies.

Rat Eradication and Seabird Restoration Project, Anacapa Island, CA (2003) Assisted a mammalogist for a graduate research project funded through the Island Conservation and Ecology Group, trapped and handled hundreds of Anacapa deer mice, setting and checking 400 traps per night, in which we assessed reproductive status, molt, age, and sex.



Woodrat Midden Cohabitation Study, Carmel, CA (2003) Served as assistant mammalogist for a graduate research project along the Carmel River funded through Caltrans. Duties included trapping a wide variety of small rodents assessing woodrat midden cohabitation. Activities included handling, ear tagging, identification to subspecies level, aging, sexing, and assessing reproductive status.

Rare Plant/Restoration Experience

SoCalGas, Pipeline Safety and Reliability Project Rare Plant Surveys, San Diego County, CA (2017)

Conducted focused rare plant surveys for alternative pipeline routes within chaparral, grassland, and coastal sage scrub habitats.

SDG&E, TL636/639 Wood-to-Steel Biological Resource Surveys, Santee, CA (2017) Conducted focused rare plant surveys during early and late spring within habitat along an existing transmission line from Mission Trails to Miramar MCAS.

Southern California Gas Angeles National Forest Restoration Project, Castaic Lake, CA (2017)

Conducted point-line intercept quantitative plant assessments of five recovering sites that were disturbed during pipeline repair and relocation activities in Angeles National Forest.

SDG&E Bighorn Sheep Mitigation Tamarisk Mapping Project, Mountain Springs, CA (2017)

Mapped tamarisk and rare plants within approximately 8 miles of Myer and Devil's Canyon Creeks.

SDG&E Rare Plant Surveys (TL682, C157, South Orange County Reliability Enhancement, Sycamore to Peñasquitos) Transmission Projects, San Diego/Orange Counties, CA (2016)

Conducted focused rare plants along various existing and proposed transmission alignments within San Juan Capistrano, San Diego, Pala/Santa Ysabel, and Barrett Lake.

BreitBurn Energy, Lompoc Yerba Santa Vegetation Mapping, Lompoc (2016) Conducted vegetation mapping of the federally endangered and CNPS 1B.2 listed Lompoc yerba santa (*Eriodictyon capitatum*).

Southern California Edison (SCE) Tehachapi Renewable Transmission Project (TRTP), Los Angeles, CA (2015) Conducted qualitative restoration monitoring during the Planet Establishment Period (PEP) of recovering tower sites that included native and non-native species identification and associated data entry/reporting. Conducted species specific California Gnatcatcher monitoring during restoration activities.

Pio Pico Energy Center Project, Otay Lake, California (2010) Collected baseline botanical data for a proposed 350 acre project site with high biodiversity and many sensitive species.

CA High Speed Train Project, Along SR14, CA (2010) Assisted in mapping vegetation communities and creating plant inventory along a 50 mile route from Palmdale to the San Fernando Valley.

Centennial Planned Community Project, Gorman, CA (2005) Mapped native grassland communities and assisted in creating a plant inventory on an 11,700 acre site near Quail Lake.

Rare Plant Surveys, Bernam Landfill Project, Santa Clarita, CA (2005) Conducted focused rare plant surveys and assisted in creating a plant inventory.

Tapia Canyon Project Site, Santa Clarita, CA (2005) Conducted focused rare plant surveys and assisted in creating a plant inventory.

Fagan Canyon Project, Santa Paula, CA (2005) Conducted focused rare plant surveys and assisted in creating a plant inventory.

Tesoro Project, Valencia, CA (2005) Conducted focused rare plant surveys and assisted in creating a plant inventory.



Grapevine Development Project, Gorman, CA (2005) Conducted tree surveys, identifying, measuring, and marking dozens of individuals of several species of oak. In addition, performed focused rare plant surveys and assisted in creating a plant inventory.

Smokey Bear Rd., Newhall, CA (2005) Conducted a habitat assessment and plant inventory of a 4 acre site.

Burbank Landfill Project, Burbank, CA (2005) Oversaw vegetation clearing and grading activities located and monitored bird nests.

Northlake Housing Development, Castaic CA (2005) Oversaw vegetation clearing and grading activities; located and monitored bird nests.

LADPW Debris Basin Clearing Project, Los Angeles Co., CA – 2005 Identified sensitive and common plant species and created a plant inventory at various sites throughout LADPW jurisdiction from Castaic to Pasadena and Thousand Oaks. Monitored vegetation clearing and grading activities and conducted nesting bird surveys and associated nest monitoring.

Catalina Island Weed Mapping, Santa Catalina Island, CA (2003) Working with the *Catalina Island Nature Conservancy*, assisted with identification and mapping of all non-native weed species across the whole of Santa Catalina Island.

La Graciosa Thistle Restoration Project, Guadalupe, CA (2002) Assisted a graduate student collecting data in a demography and conservation study on the endangered wetland species *Cirsium loncholepis* for a UNICAL restoration project. Duties included setting up grids, taking various measurements of plants, assessing the plants survivorship, and making recommendations for future rehabilitation.

Vernal Pool Branchiopods

Marine Corps Air Station Miramar, Vernal Pool Relocation Joint Strike Fighter Basing and Operations Project, Miramar, CA (2017) Collected and oversaw soil excavation of dry occupied fairy shrimp vernal pools and sensitive plants.

SoCalEdison, Valley-Ivyglen/Alberhill Riparian Fairy Shrimp Surveys, Lake Elsinore, CA (2017) Conducted protocol fairy shrimp surveys along a 23-mile transmission project where over a 200 pools were identified and monitored by Mr. Cooper.

City of San Diego, La Media Road Improvements Project, Otay Mesa, CA (2015) Conducted protocol wet-season level fairy shrimp surveys along existing roadways within disturbed habitat.

Pio Pico Energy Center Project, Otay Lake, California (2010) Collected baseline biological data that included fairy shrimp for a proposed 350 acre project site with high biodiversity.

Confidential Client, Fairy Shrimp Surveys, Perris, CA (2010) Assisted with Fairy Shrimp surveys and identifying special status shrimp species within a 1,100 acre survey area.

Compliance Experience

City of San Diego, Tecolote Canyon erosion control repair, Clairemont, CA (2015) Conducted biological monitoring during culvert repair activities within Tecolote Canyon.

Utilities Installation Project, Camp Pendleton, California (2013) Monitored overhead construction crews while working near habitat occupied by special status species including California Gnatcatcher, Least Bell's Vireo Arroyo Toad and listed Fairy Shrimp. Documented compliance with conservation measures.

SDG&E Sunrise Powerlink Project, Scripps Ranch to El Centro, California (2008-2012) Conducted pre-



construction nesting bird surveys and focused protocol wildlife surveys along the 120 miles right-of-way, extensive California Gnatcatcher surveys and monitoring to determine presence and breeding status, surveyed for other sensitive wildlife including Least Bell's Vireo, Southwestern Willow Flycatcher, Arroyo Toad and Quino Checkerspot Butterfly. Conducted over 1,500 hours of construction monitoring, including initial vegetation clearing/grading of a 60 acre substation, miles of access roads, pull sites and tower pads. Ensured work maintained compliance within project specific mitigation measures and filed daily monitoring reports.

South Fork Santa Clara River Stabilizer Bar Project, Santa Clarita CA (2005) Oversaw and documented construction activities and ensured project environmental compliance.

Trainings

- Western Yellow-billed Cuckoo Survey Training Workshop, *Kern River Preserve, CA – 2015, 2010*
- The Anostraca and Notostraca of California Workshop, San Diego, CA – 2013
- San Diego County Sensitive Butterfly Workshop, *San Diego, CA – 2012*
- Southwestern Research Station Herpetology Field Course, *Portal, AZ – 2011*
- Willow Flycatcher Survey Training Workshop, *Kern River Preserve, CA – 2005, 2011*
- 25th International Ornithological Congress, Camops do Jordão, SP, Brazil – 2010
- Earth Skills Wildlife Tracking Workshop, *Joshua Tree, CA – 2007*
- Flat-Tailed Horned Lizard Monitoring Training, *El Centro, CA – 2007*
- Willow Flycatcher Survey Training Workshop, *San Pedro River Preserve, AZ – 2007*
- Desert Tortoise Survey and Handling Techniques Workshop, *Ridgecrest, CA – 2006*
- Ecology and Conservation of California Bats Workshop, *Truckee, CA – 2005*
- Earth Skills Wildlife Tracking Workshop, *San Luis Obispo, CA – 2004*