
Title Page

Title: Biological Survey for MSCP / Sensitive Vegetation at 3790 Arroyo Sorrento Road

Subject Property: 3790 Arroyo Sorrento Road
San Diego, CA 92130

Project Number: 610681

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Date: Surveyed December 15, 2018

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INTRODUCTION

The proposed Project includes a lot split of the 3790 Arroyo Sorrento Road property California, located within the residentially developed Carmel Valley region of San Diego and is bordered to the east and southwest by residential properties (Attachment A). Arroyo Sorrento Road borders the southern limits of the property, while natural habitat on undeveloped land borders the northern and western property limits. Currently a large multi-level house exists in the north, a single level house in the center and a volleyball court in the southwest of the subject property. Driveways lead from Arroyo Sorrento Road on the south to both houses. Elevation on the Project footprint proposed for development ranges from 189 feet above mean sea level (amsl) at the northwest corner to 98 feet amsl at the southwest corner. The Project site has been previously graded and contains numerous existing structures.

Once the lot split is approved, the upper lot (Parcel 1) will be sold and no construction is required. If approved, proposed construction within the lower lot (Parcel 2) will consist of a 3271 square feet modern single level ranch-style home with a 2-car garage and a single-car garage. The Lowest lot on Parcel 2 will consist of a 900 square feet companion unit with a 2-car garage next to the existing volleyball court. No grading will be required. A 3-foot tall retaining wall is proposed to accommodate the sloping area from the middle lot area. The 2.245 acres will have a 3-tier effect; Parcel 1 being the top tier, Parcel 2 being the middle tier with a lower flat section level with Arroyo Sorrento Road. The Project schedule is dependent upon the document finalization and permit approval processes. Therefore, a specific construction timeline cannot be reasonably estimated at this time. Once construction begins, it is anticipated to take approximately one year to complete the project.

This Biological Letter Survey Report (Report) was prepared by biologist, Ryan Quilley, in accordance with the City of San Diego's (City) Biology Guidelines (2012) and is intended to satisfy requirements set forth in the City's Environmentally Sensitive Lands Regulations (ESL), San Diego Land Development Code (LDC) and the Open Space Residential Zone. Additionally, this report serves to illustrate the baseline conditions for which the determination of impacts and mitigation under the California Environmental Quality Act (CEQA) shall be analyzed during the environmental review process.

METHODS

In addition to conducting the biological survey, a current California Natural Diversity Database (CNDDDB) records search was conducted to assess the Project Site for its potential to contain State or federally listed threatened, endangered, or otherwise sensitive plant and animal species, as well as endemic species and covered species of the City of San Diego Multiple Species Conservation Plan (MSCP) (Attachment B). In addition, the USDA Web Soil Mapper, National Wetlands Inventory (NWI) and SanGIS databases were queried for available soils, vegetation and wetland data. The results of the literature review were used to focus biological survey efforts for any species perceived to have some potential to occur on or adjacent to the Project Site.

The biological survey was conducted on December 15, 2018 by Ryan Quilley. The survey was performed according to the latest protocols and MSCP guidelines for biological surveys and reporting, specifically the Subarea Plan (City of San Diego 1997). The survey occurred from 1315 to 1430, under favorable weather conditions of 75°F to 79°F, 2-5 mph winds, no precipitation and no cloud cover. A follow up site visit was conducted on April 23, 2019 to evaluate the potential for sensitive plant species to occur on the site that may not have been detectable during the December visit.

Several tasks were accomplished during the biological survey. Onsite and adjacent areas were

characterized for their existing conditions and current land uses. The onsite vegetation communities were identified by dominant species present and mapped directly onto high-resolution aerial imagery for Geographic Information System (GIS) extrapolation (Attachment A). Potentials for occurrence (PFO) of sensitive plant and animal species resulting from the literature review were assessed in relation to the existing conditions of the Project site (Attachment B). Representative photographs were collected to document current conditions of the parcels as well as the general surroundings (Attachment C). All plant species observed within the Project Site, plus all wildlife observed by sight, sign and/or sound within the vicinity of the Project site, were cataloged in the field notes of the biologists to compile species lists (Table 1 and 2). The Project site and its immediately adjacent area were assessed for the presence/absence of potentially jurisdictional waters of the US Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish & Wildlife (CDFW) and/or County of San Diego Resource Protection Ordinance defined wetlands, including vernal pools.

Seasonal limitations were considered during the survey. Plant species within San Diego County have varying blooming and/or growth periods and therefore it is possible that not all plant species that could be present on the property, particularly annuals, were identified during this survey. However, due to the generally disturbed nature of the habitat surveyed, it is unlikely that sensitive plant species exist within the survey area.

REGULATORY SETTING

This section is divided into pertinent sub-sections that include federal, state and local regulations that apply to the Project as proposed.

Federal

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (PL 65-186, as amended; 16 USC §§ 703 et seq.) protects most birds, whether or not they migrate. Birds, their nests, eggs, parts, or products may not be killed or possessed. Game birds are listed and protected except where specific seasons, bag limits, and other features govern their hunting. Exceptions are made for some agricultural pests, which require a USFWS permit (yellow-headed, red-winged, bi-colored, tri-colored, Rusty and Brewer's Blackbirds, cowbirds, all grackles, crows and magpies). Some other birds that injure crops in California may be taken under the authority of the County Agricultural Commissioner (meadowlarks, horned larks, golden-crowned sparrows, white- and other crowned sparrows, goldfinches, house finches, acorn woodpeckers, Lewis' woodpeckers and flickers). Permits may be granted for various non-commercial activities involving migratory birds and some commercial activities involving captive-bred migratory birds.

State

California Fish & Game Codes 3500 Series California Fish & Game Codes 3500, 3503, 3503.5, 3505, 3511 and 3513 are State regulations that cover resident and non-resident game birds, protected bird nests, protected raptor nests, egrets, ospreys, Fully Protected bird species, and take considerations for Migratory Bird Treaty Act birds.

- **Code 3500:** "(a) Resident game birds are as follows:

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- (1) Doves of the genus *Streptopelia*, including, but not limited to, spotted, ringed turtledoves, and Eurasian collared-doves.
 - (2) California quail and varieties thereof.
 - (3) Gambel's or desert quail.
 - (4) Mountain quail and varieties thereof.
 - (5) Sooty or blue grouse and varieties thereof.
 - (6) Ruffed grouse.
 - (7) Sage hens or sage grouse.
 - (8) Hungarian partridges.
 - (9) Red-legged partridges including the chukar and other varieties.
 - (10) Ring-necked pheasants and varieties thereof.
 - (11) Wild turkeys of the order Galliformes.

(b) Migratory game birds are as follows:

- (1) Ducks and geese.
- (2) Coots and gallinules.
- (3) Jacksnipe.
- (4) Western mourning doves.
- (5) White-winged doves.
- (6) Band-tailed pigeons

(c) Reference in this code to "game birds" means both resident and migratory game birds."

- **Code 3503:** "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."
- **Code 3503.5:** "It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."
- **Code 3505:** "It is unlawful to take, sell, or purchase any egret or egret, osprey, bird of paradise, goura, numidi, or any part of such a bird."
- **Code 3511:** "(a) (1) Except as provided in Section 2081.7 or 2835, fully protected birds or parts thereof may not be taken or possessed at any time. No provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected bird, and no permits or licenses heretofore issued shall have any force or effect for that purpose. However, the department may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species, and may authorize the live capture and relocation of those species pursuant to a permit for the

protection of livestock. Prior to authorizing the take of any of those species, the department shall make an effort to notify all affected and interested parties to solicit information and comments on the proposed authorization. The notification shall be published in the California Regulatory Notice Register and be made available to each person who has notified the department, in writing, of his or her interest in fully protected species and who has provided an e-mail address, if available, or postal address to the department. Affected and interested parties shall have 30 days after notification is published in the California Regulatory Notice Register to provide any relevant information and comments on the proposed authorization.

(2) As used in this subdivision, "scientific research" does not include any actions taken as part of specified mitigation for a project, as defined in Section 21065 of the Public Resources Code.

(3) Legally imported fully protected birds or parts thereof may be possessed under a permit issued by the department.

(b) The following are fully protected birds:

(1) American peregrine falcon (*Falco peregrinus anatum*).

(2) Brown pelican (*Pelican occidentalis*).

(3) California black rail (*Laterallus jamaicensis coturniculus*).

(4) California clapper rail (*Rallus longirostris obsoletus*).

(5) California condor (*Gymnogyps californianus*).

(6) California least tern (*Sterna albifrons browni*).

(7) Golden eagle (*Aquila chrysaetos*).

(8) Greater sandhill crane (*Grus Canadensis tabida*).

(9) Light-footed clapper rail (*Rallus longirostris levipes*).

(10) Southern bald eagle (*Haliaeetus leucocephalus leucocephalus*).

(11) Trumpeter swan (*Cygnus buccinator*).

(12) White-tailed kite (*Elanus leucurus*).

(13) Yuma clapper rail (*Rallus longirostris yumanensis*).

- **Code 3513:** "It is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act."

City of San Diego Environmentally Sensitive Lands (ESL)

The ESL regulations (City 1997) were adopted in order to protect, preserve, and, where damaged, restore the environmentally sensitive lands of San Diego. Under the ESL regulations, upland habitats are classified into 4 tiers in descending order based on sensitivity. Infringement into non-wetland ESL is not restricted, outside of the Multiple Habitat Planning Area (MHPA), but impacts to ESL must be mitigated. Steep hillsides are also considered ESL and are bound by a set of specific development guidelines.

RESULTS

This section is divided into sub-sections that include sensitive species, soils, potentially jurisdictional waters, vegetation communities, plant species and wildlife species.

Sensitive Species

A total of three plant and one wildlife species occurrences were found to occur within 0.5 miles of the Project Site through the CNDDDB review (Attachment B); Federally-threatened and State-endangered Encinitas baccharis (*Baccharis vanessae*), Federally-endangered and State-endangered Orcutt's spineflower (*Chorizanthe orcuttiana*), USFS-Sensitive Nuttall's scrub oak (*Quercus dumosa*) and the Federally-threatened California gnatcatcher (*Polioptila californica*). Although the site provides suitable habitat for both Encinitas baccharis and Nuttall's scrub oak, both of these species are perennial and would have been positively identified during the survey. Orcutt's spineflower is known to occur in open sandy soils and has a blooming period between March through May, but is generally visible from February through July. The majority of the site does not contain suitable sandy soils for this species however sandy soils exist in the far northern portion of the property. This area was searched for *Chorizanthe* species during both site visits in December 2018 and April 2019 and no Orcutt's spineflower or any other species of *Chorizanthe* was observed.

A total of 46 plant species and 39 wildlife species are covered under the MSCP; the MSCP-covered and Federally-threatened California gnatcatcher (*Polioptila californica californica*) was observed adjacent to the northern perimeter of the property (Attachment A). Other species that may occur within 300 feet of the Project Site include Cooper's hawk (*Accipiter cooperii*). As a result of the literature review and the biological survey, all identified sensitive species resulting from the CNDDDB query and the MSCP narrow endemic species list, with the exception of California gnatcatcher, were determined to be absent from the Project Site due to directly observed absence, lack of suitable habitat types present, and/or lack of connectivity to other population sources, among other variables.

Soils

One soil type historically occurred onsite: Corralitos loamy sand (CsD), 9 to 15 percent slopes. Neither of these soil types are considered to be hydric. This historic soil forms the dominant type throughout the undeveloped areas adjacent to the property. However, due to previous development within Project site, significant land alterations through grading, cutting and filling of slopes within the Project site and the addition of soil amendments (i.e. mulch), current soil types within the project limits appear to differ from historic soil types. It is unknown to what extent current soil types are intermixed with imported or altered soils due to development. The current elevations and site contouring are not natural, and consequently, the native soil horizons no longer exist onsite and all soil types are considered disturbed.

Potentially Jurisdictional Waters

No drainage features or water bodies, including vernal pools, were observed on the subject parcels or within 200 feet or more of the Project Site. Hydrological input to the Project site appears to consist of low velocity surface water runoff from the adjacent undeveloped sloped to the north of the Project Site that does not appear to be concentrated in any natural or man-made drainage feature. Runoff appears to dissipate into sheet flow within the Project Site, with no direct connectivity to any potentially jurisdictional drainage features or water bodies. The site assessment evaluated apparent areas of surface flow for presence of an ordinary high water mark, formation of bed and bank, and on/off-site connectivity; none were observed.

Topography

Topography of the property consists of flat, graded pads within the developed areas of the property surrounded by gentle to moderate slopes, sloping from north to south with two steep hillsides occurring in the far northwest corner of the property and the west-central portion of the property (west of the single level house). These topographical features are best shown on the Arroyo Sorrento Lot Split Site Map, which shows existing, survey-grade topographical contour lines (Figure 2). Soil within the property limits is sandy. The survey area is largely disturbed and developed and appears to have been recontoured/graded to its current topography.

Vegetation Communities

Five vegetation communities occur on the Project Site: Developed Land, Disturbed Land, Ornamental Plantings, Disturbed Coastal Sage Scrub and Mixed Chaparral. Three of these are considered Tier IV habitat types of the MSCP and require no mitigation outside MHPA areas. Each community is described in the following paragraphs. The land offsite, immediately to the north and west of the property is classified as a mosaic Coastal Sage Chaparral Scrub (CSCS) and Coastal Sage Scrub (CSS) and provides suitable nesting habitat for the Federally-threatened coastal California gnatcatcher (*Polioptila californica californica*: CAGN) (Photograph 6 & Figure 1). This area was confirmed to be occupied by CAGN during the habitat assessment survey. A female CAGN was observed within approximately 60 feet of the north property line (Figure 1).

Developed Land

The multistory home, single story home, volleyball court and driveways constitute approximately 28,150 square feet (SF), 0.65 acres or 28% of the total property and are classified as developed.

Disturbed Land

Approximately 0.39 acres (1700 ft.²) or 17% of the property area can be described as Disturbed Land. Disturbed Land within the Project site is characterized by a very low vegetative cover areas (less than 5%), consisting of primarily nonnative grasses such as red brome (*Bromus madritensis*) and wild oats (*Avena barbata*). The vast majority of these areas consist of bareground and mulched areas.

Ornamental Plantings

The majority of the Project site is best characterized Ornamental Plantings which accounts for approximately 1.1 acres (47,500 ft.²) or 48% of the property area. Landscaped are dominated by mostly nonnative plant species such as freeway iceplant (*Carpobrotus edulis*), natal grass (*Melinis repens*), red brome, ornamental pines species (*Pinus sp.*), ornamental eucalyptus (*Eucalyptus sp.*), Peruvian pepper tree (*Shinus molle*), Bermuda grass (*Cynodon dactylon*) among many other ornamental and nonnative species. The understory of this habitat ranges from mulched areas and bare ground to a ruderal/grassy understory and freeway iceplant. Small patches of native regrowth exist within the

Ornamental Planting Habitat. Areas where these species were observed in higher abundance (over 15% vegetative cover) are called as separate habitat types.

A very low percent cover (<5%) of native plant species were identified within the Ornamental Plantings, including California buckwheat (*Eriogonum fasciculatum*), deerweed (*Acmispon glaber*), Mojave yucca (*Yucca schidigera*), lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and black sage (*Salvia melifera*). Other native species were observed in very low numbers and a comprehensive list of plant species observed within the property limits can be found below in Table 2. Though native species were identified within habitat classified as Ornamental Plantings, the overall percent cover and level of disturbance associated with their occurrence, precluded these areas from being designated as a native habitat or MSCP habitat type.

Disturbed Coastal Sage Scrub (D-CSS)

A small portion of the project site consisted of disturbed coastal sage scrub accounting for 0.13 acres (4600 ft.²) or 5% of the property area. This habitat type was restricted to the edges of the property in the northwest and west-central (Attachment A). These areas were observed to have a slightly higher percentage of native CSS species, relative to other disturbed areas of the property, dominated by *Eriogonum fasciculatum* with a lesser component of *Acmispon glaber*. This area was observed to have a relatively low total vegetative cover (<20%), and an abundance of nonnative species such as *Melinis repens* and *Carpobrotus edulis*. This habitat marginally qualifies as MSCP Tier II (uncommon uplands) coastal sage scrub habitat.

Disturbed Southern Mixed Chaparral (D-SMC)

Regrowth of native chaparral species was observed within an originally ornamental planting area. Due to the higher abundance of native species this habitat was characterized as Disturbed Southern Mixed Chaparral. This small area accounts for 0.02 acres (1000 ft.²) or 1% of the property area and was dominated by *Malosma laurina* and nonnative grasses. Due to a high percentage of nonnative plant species, small patch size and other characteristics of disturbances, this area only marginally qualifies as MSCP Tier IIIA (common uplands) Southern Mixed Chaparral habitat.

Plant Species

Table 1. Plant Species Observed within Property Limits:

Native	Nonnative
California buckwheat (<i>Eriogonum fasciculatum</i>)	Eucalyptus (<i>Eucalyptus spp.</i>)
Stephenomeria (<i>Stephenomeria sp.</i>)	Freeway Iceplant (<i>Carpobrotus edulis</i>)
Deerweed (<i>Acmispon glaber</i>)	Cheeseweed (<i>Malva parviflora</i>),
Torrey Pine (<i>Pinus torreyana</i> [planted])	Red Brome (<i>Bromus madritensis</i>)
Mojave yucca (<i>Yucca schidigera</i>)	Peruvian pepper tree (<i>Schinus molle</i>)
Lemonade berry (<i>Rhus integrifolia</i>)	Pampas grass (<i>Cortaderia jubata</i>)
Common sand aster (<i>Corethrogyne filaginifolia</i>)	Ornamental agave (<i>Agave sp.</i>)
Laurel sumac (<i>Malosma laurina</i>)	Red brome (<i>Bromus madritensis</i>)
Jimson weed (<i>Datura wrightii</i>)	Society garlic (<i>Tulbaghia violacea</i>)
Lanceleaf liveforever (<i>Dudleya lanceolata</i>)	Sourgrass (<i>Oxalis pes-caprae</i>)
California sagebrush (<i>Artemisia californica</i>)	Bird of paradise (<i>Strelitzia reginae</i>)

Laurel Sumac (<i>Malosma laurina</i>)	Queen palm (<i>Syagrus romanzoffiana</i>)
Coyote brush (<i>Baccharis pilularis</i>)	Sea lavender (<i>Limonium perezii</i>)
Black sage (<i>Salvia melifera</i>)	Olive (<i>Olea europaea</i>)
Bicolor everlasting (<i>Pseudognathium bioletti</i>)	Bermuda grass (<i>Cynadon dactylon</i>)
Annual bur-sage (<i>Ambrosia acanthicarpa</i>)	Aloe species (<i>Aloe sp.</i>)
	Garland daisy (<i>Glebionis coronaria</i>)
	Common groundsel (<i>Senecio vulgaris</i>)
	Rosemary (<i>Rosemarinus officinalis</i>)

*Not all nonnative ornamental hedges, shrubs and succulents were identified to genus species level

Wildlife Species

A total of 9 bird species were observed on or within the vicinity of the Project Site which can be found below in Table 2.

Table 2 – Wildlife Species Observed

AVES	BIRDS
COLUMBIDAE	Pigeons & Doves
<i>Zenaida macroura</i>	mourning dove
CORVIDAE	Crows & Jays
<i>Corvus corax</i>	common raven
FRINGILLIDAE	Finches & allies
<i>Haemorhous mexicanus</i>	house finch
PARULIDAE	Wood Warblers & relatives
<i>Setophaga coronata</i>	yellow-rumped warbler
POLIOPTILIDAE	Gnatcatchers
<i>Polioptila californica californica</i>	coastal California gnatcatcher
TROCHILIDAE	Hummingbirds
<i>Calypte anna</i>	Anna's hummingbird
TYRANNIDAE	Tyrant Flycatchers
<i>Sayornis nigricans</i>	black phoebe
<i>Sayornis saya</i>	Say's phoebe
<i>Tyrannus vociferans</i>	Cassin's kingbird

All of these species are common to the region and are to be expected in habitats present on the Project Site; none are State or federally listed or otherwise sensitive, nor are any on the MSCP list of covered or narrow endemic species, with the exception of the California gnatcatcher.

The most commonly encountered species included yellow-rumped warbler (*Setophaga coronata*), and Anna's hummingbird (*Calypte anna*). The primary area on the Project Site that could support nesting by any of these or other potentially occurring bird species are the native and non-native trees and shrubs occurring within the Ornamental Plantings within and adjacent to the north, west and south boundaries of the Project Site. Large pine trees and a variety of other ornamental plantings provide suitable for nesting by a variety of bird species, including Cooper's hawk. In addition, the buildings adjacent to the Project site may contain areas suitable for nesting birds. The timing of the avian nesting season varies slightly by year but is generally accepted as February 1 through September 15 for nesting birds and raptors.

No amphibian, reptile or mammal species were directly observed onsite.

The Project occurs directly adjacent to undeveloped native habitat and therefore the Project site could be considered as a corridor for wildlife species known to occur or that may occur on or adjacent to the Project Site. However, the entire property is fenced off, therefore larger ground dwelling species are unlikely to travel through the site.

Due to a number of variables (e.g., no suitable habitat present, no connectivity to known populations, no recent records within the vicinity, developed history of the parcel, etc.), all evaluated sensitive wildlife species, except Cooper's hawk and California gnatcatcher are considered absent from the Project Site (Attachment B). With suitable nesting habitat being present, the Cooper's hawk has a low-moderate potential to nest within 300 feet of the Project site. Suitable nesting habitat for California gnatcatcher exists immediately adjacent to the property boundary and therefore there is a high potential to potentially nest within 100 feet of the Project site.

DISCUSSION

This section is divided into sub-sections that include direct and indirect impacts analysis, and project mitigation.

Direct and Indirect Impacts Analysis

Currently, proposed development of the property has been designed to fit within the existing graded pads, and therefore total impacts are minimal. However, if the entire parcel was to be developed the following impacts would result:

Table 1. Direct Impacts Matrix Table

MSCP Habitat Type	Total Existing (acre) (ft.²)
Disturbed Land (Tier IV)	0.39 acres (1700 ft. ²)
Ornamental Landscaping (Tier IV)	1.1 acres (47,500 ft. ²)
Disturbed Coastal Sage Scrub (Tier II)	0.13 acres (4600 ft. ²)
Disturbed Southern Mixed Chaparral (Tier IIIA)	0.02 acres (1000 ft. ²)
TOTAL	1.64 acres (54,800 ft.²)

Except for the low-moderate potential for Cooper's hawk to nest and high potential for California gnatcatcher to nest (outside of the project site), all other State and/or federally listed or otherwise sensitive plant and wildlife species, plus all MSCP-covered and narrow endemic species, are considered absent from the Project Site and its immediate vicinity. The subject parcels are not within a MHPA and contain primarily Developed Lands, Disturbed Land and Ornamental Landscaping, Tier IV habitat types of the MSCP. A very small portion of the property, 0.13 acres of Disturbed Coastal Sage Scrub (Tier II) and 0.02 acres of Disturbed Southern Mixed Chaparral (Tier IIIA) occur within the property. In this case, and considering a finding of absence for all evaluated plant and wildlife species within the boundary of the property, neither of these habitat types will require any compensatory mitigation from Project implementation and long-term operations and maintenance.

As a result of Brush Management Requirements specifically outline in the separately submitted Brush Management Plan which addresses Section III: Brush Management per the Landscape Standard Manual minor seasonal impacts to Disturbed Coastal Sage Scrub and Disturbed Southern Mixed

Chaparral have the potential to occur. Periodic thinning of vegetation with the Zone 2 brush management areas would result in impacts to approximately 950 square feet (0.02 acres) of Disturbed Mixed Chaparral and 3530 square feet (0.08 acres) of Disturbed Coastal Sage Scrub. No invasive or potentially invasive species are proposed for the project.

Zone 2 of brush management shall occur outside of the development area causing temporary disruptions of habitat. Temporary disturbance due to Zone 2 brush management that do not alter landform and that will be revegetated are generally not considered to be permanent habitat loss. Zone 2 brush management is considered impact neutral (not considered an impact). Indirect impacts to covered species could be mitigated by conformance to Section 1.4.3, Land Use Adjacency Guidelines, and implementing Section 1.5, Preserve Management Recommendations of the City's MSCP Subarea Plan.

Brush management Zone 2 thinning activities, while having the potential to adversely affect biological resources, are not considered potentially significant inside the MHPA or, to the extent that non-covered species are not impacted, outside the MHPA, because of the implementation of the MSCP. Brush management Zone 2 thinning outside the MHPA which affects non-covered species is potentially significant. Brush management not conducted in accordance with brush management regulations, regardless of where it is located, is also potentially significant. Brush management activities should occur during the non-breeding season (generally accepted as February 1 to September 15) to avoid potential impacts to nests of MBTA-covered avian species.

As previously discussed, the areas adjacent to the north and west of the property line are currently occupied by the Federally-threatened coastal California gnatcatcher and suitable nesting habitat exists here; however, indirect impacts to this species would be reduced with the required implementation of the City of San Diego Land Use Adjacency Guidelines (LUAG).

Recommendations for avoidance of potential impacts to California gnatcatcher would include the follow mitigation measures:

- Should construction be initiated during the nesting season (February 15 – August 15), there is potential for indirect impacts to nesting CAGN from construction noise and vibration, though the potential indirect impacts are low, given the nearest major construction activities would occur at least 45 feet away from suitable CAGN habitat. Some minor work is proposed within less distance to the property line but would be limited to low impact retaining wall installation. Access to the property is from the southeast, away from the sensitive habitat north and west of the property. Construction-related staging areas will also be just south of the center of the property, over 100 feet away from the sensitive habitat outside of the property to the north and west. As such, indirect impacts from staging equipment and access will be minimal. A significant proportion of occupied CAGN habitat is visually buffered from proposed construction activities by a steep slope along the northwest and north portion of the property. In addition, if construction were to be initiated prior to the nesting season and a CAGN pair selected a nest within close proximity to construction activities (i.e. immediately adjacent to the property line), the pair can be assumed to be tolerant of construction activities and unlikely to be indirectly affected. This assumption would be on the basis that construction activities do not significantly increase (specifically in terms of hours of operation, noise levels, and vibration levels) and work does not occur at night, after a CAGN pair established a nest. Should construction be initiated during the nesting season (February 15 – August 15), there is potential for indirect impacts to nesting CAGN from construction noise and vibration however the potential for indirect impacts is low, for the reasons listed above. If construction requiring the use of heavy or excessively loud equipment (grading, drilling, excavation, trenching, etc) or night time construction will occur within 100 feet of suitable CAGN habitat between

February 15 – August 15, it is recommended that a pre-construction nesting bird survey is conducted within 3 days of the start of construction to identify potentially nesting CAGN.

Recommendations for avoidance of potential impacts to MBTA-covered avian species would include the follow mitigation measures:

- If brush management activities are required during the MBTA-covered avian nesting season (generally February 1 to September 15), a pre-activity nest survey should be conducted by a qualified biologist within 3 days of the start of brush management activities.

No indirect impacts are anticipated during or following construction if LUAG and aforementioned avoidance measures are followed. The implementation of project design features during construction (e.g., temporary construction fence, storm water pollution prevention devices, site watering for dust control), may offset potential indirect impacts related to noise and dust.

No direct or indirect impacts are anticipated to occur to onsite or off-site biological resources. In addition, the construction fence and as-needed dust control procedures will serve the added benefit of reducing such impacts to human receptors in the neighborhood.

Project Mitigation

Since no direct or indirect impacts are anticipated to occur to onsite or off-site biological resources, no mitigation is proposed for this project. The Project will comply with the Federal Migratory Bird Treaty Act and California Fish and Game Code Sections of the 3500 series.

CONCLUSION

Based on the biological survey and habitat assessment, the area within the property limits at 3790 Arroyo Sorrento Road can be classified as primarily disturbed, ornamental plantings and developed, low quality, habitat consisting of approximately 90% non-native plants. This habitat is unlikely to provide the necessary ecological components to support sensitive or listed species. This area would qualify as poor MSCP habitat and without significant restoration would not be a valuable contribution to the MSCP areas.

No direct or indirect adverse impacts would occur to the Project site or any threatened, endangered, or sensitive plant or animal species. Additionally, no cumulative impacts are expected to occur. Every effort to avoid impacting nesting birds and raptors should implemented, including compliance with the Federal Migratory Bird Treaty Act and California Fish and Game Code Sections of the 3500 series.

If there are any questions or concerns regarding the findings of this report, please contact me at 610-804-8916 or ryanquilley@gmail.com

Sincerely,



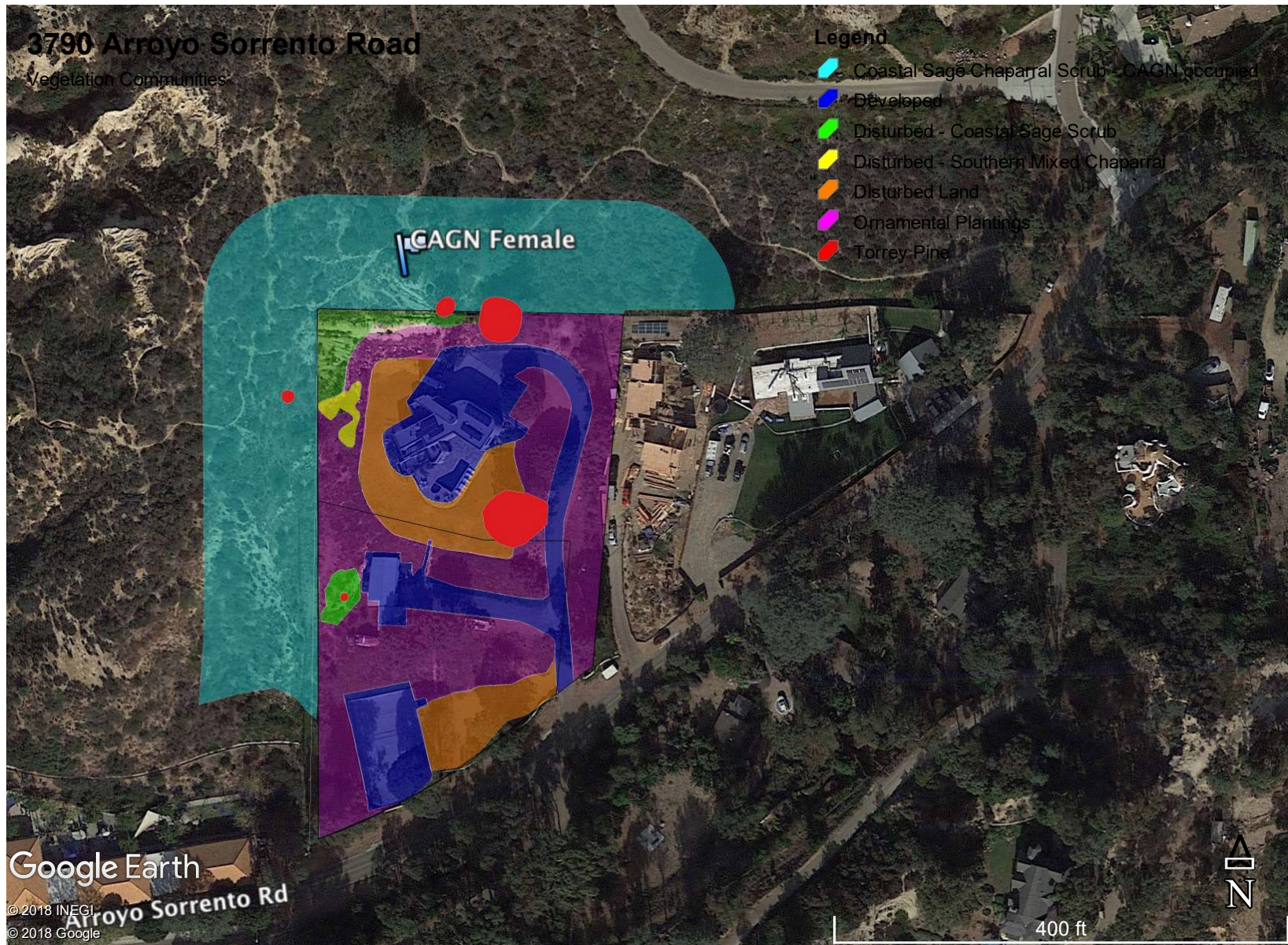
Ryan Quilley



Attachment A - Figure 1 – Regional Location



Attachment A - Figure 2 - Habitat Assessment Map





Attachment B – CNDDDB List

SciName	ComName	FedList	CalList	GRank	SRank	RPlantRank	OthrStatus	Elevation	Latitude	Longitude	UTM
Polioptila californica californica	coastal California gnatcatcher	Threatened	None	G4G5T2Q	S2		CDFW_SSC-Species of Special Concern NABCI_YWL-Yellow Watch List	100	32.93038	-117.23719	Zone-11 N3643594 E477825
Baccharis vanessae	Encinitas baccharis	Threatened	Endangered	G1	S1	1B.1		250	32.92943	-117.23393	Zone-11 N3643488 E478130
Quercus dumosa	Nuttall's scrub oak	None	None	G3	S3	1B.1	USFS_S-Sensitive	200	32.9291	-117.23521	Zone-11 N3643451 E478010
Chorizanthe orcuttiana	Orcutt's spineflower	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	240	32.92808	-117.23469	Zone-11 N3643338 E478059

Appendix C - December 2018 Photographs



Photograph Location and Direction



Photograph No. 1

Southeast-facing view of north eastern section of property (north parcel). Habitat consists of Disturbed habitat, Ornamental Plantings and Developed areas.



Photograph No. 2

East-facing view of north eastern section of property (north parcel). Habitat consists of Disturbed habitat, Ornamental Plantings and Developed areas.



Photograph No. 3

North-northeast-facing view of northern section of property (north parcel). Habitat consists of Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Malosma laurina*, *Rhus integrifolia*, and *Acmispon glaber*. One mature *Pinus torreyana* can be seen in the background, occurring along the northern property line.



Photograph No. 4

North-northwest-facing view of northern section of property (north parcel). Habitat is dominated by Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Malosma laurina* and *Acmispon glaber*. Two mature *Pinus torreyana* can be seen in the background, occurring along the northern property line.

Date & Time: Sat, Dec 15, 2018, 13:43:34 PST
Position: +032 927410° / -117 234327°
Altitude: 184ft
Datum: WGS-84
Azimuth/Bearing: 116° S64E 2062mils (True)
Elevation Angle: -14.5°
Horizon Angle: -01.3°
Zoom: 1X
CAGN occupied



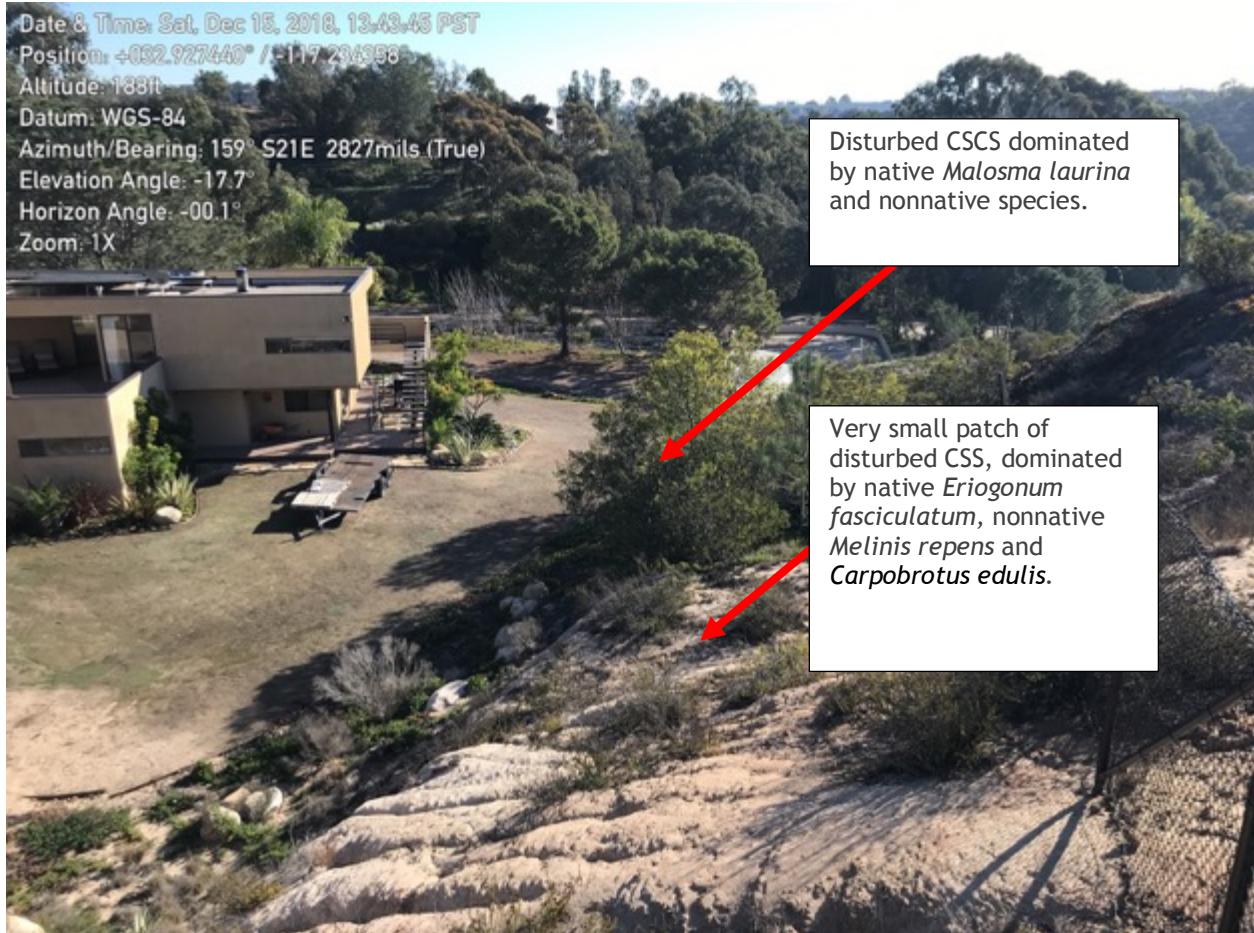
Photograph No. 5

Southeast-facing view of northern section of property (north parcel). Habitat consists of primarily Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Baccharis pilularis* and *Acmispon glaber*.



Photograph No. 6

West-northwest-facing view of northern section of property (north parcel) along property line where steep hillside occurs. Habitat within the property line is disturbed while coastal sage chaparral scrub (CSCS) occurs in lands surrounding the north and western portion of the property. This CSCS was confirmed to be occupied by California gnatcatcher (*Poliptila californica californica*).



Photograph No. 7

South-southeast-facing view of northwest section of property (north parcel) along property line where steep hillside occurs. A small patch of disturbed coastal sage scrub and disturbed coastal sage chaparral scrub occurs here but does not provide sufficient area to be a functional habitat. While disturbed CSCS-D occurs in lands surrounding the north and western portion of the property. This CSCS-D was confirmed to be occupied by California gnatcatcher (*Polioptila californica californica*).

Very small patch of disturbed CSS, dominated by native *Eriogonum fasciculatum*, nonnative *Melinis repens* and *Carpobrotus edulis*.



Photograph No. 8

Northwest-facing view of steep hillside on northernmost corner of property. A small area of sparse regrowth of native coastal sage scrub species occurs here, consisting of *Eriogonum fasciculatum*, *Acmispon glaber* and *Malosma laurina*, in addition to nonnative species including *Carpobrotus edulis* and *Melinis repens*.

Date & Time: Sat, Dec 15, 2018, 13:52:35 PST
Position: +032.927100° // -117.234328°
Altitude: 164ft
Datum: WGS-84
Azimuth/Bearing: 118° S62E 2098mils (True)
Elevation Angle: -11.0°
Horizon Angle: -01.3°
Zoom: 1X



Photograph No. 9

Southeast-facing view of southern section of north parcel. Habitat consists of primarily Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Malosma laurina*.



Photograph No. 10

South-southeast-facing view of southern section of north parcel and northern section of south parcel in background. Habitat consists of primarily Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Malosma laurina* and *Acmispon glaber*.

Date & Time: Sat, Dec 15, 2018, 13:57:15 PST
Position: +032.926796° / -117.234292°
Altitude: 137ft
Datum: WGS-84
Azimuth/Bearing: 002° N02E 0036mils (True)
Elevation Angle: +04.6°
Horizon Angle: -01.4°
Zoom: 1X



Photograph No. 11

North-facing view of southern section of north parcel. Habitat consists of primarily Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Baccaris pilularis*.



Photograph No. 12

South-facing view of northern section of south parcel. Habitat consists of primarily Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Salvia melifera*. A single *Pinus torreyana* sapling can be seen in the foreground.

Date & Time: Sat, Dec 15, 2018, 13:59:22 PST
Position: +032.926612° / -117.234184°
Altitude: 112ft
Datum: WGS-84
Azimuth/Bearing: 001° N01E 0018mils (True)
Elevation Angle: +07.3°
Horizon Angle: -00.0°
Zoom: 1X



Photograph No. 13

North-facing view of northern section of south parcel (with north parcel in background). Habitat consists of primarily Disturbed habitat, Ornamental Plantings and Developed areas with some very sparse growth of native species such as *Salvia melifera*, *Eriogonum fasciculatum* along with dominant nonnative species such as *Carpobrotus edulis* and *Nerium oleander*. A single *Pinus torreyana* sapling can be seen in on the left.



Photograph No. 14

South-facing view of the southwest portion of the property (south parcel). Habitat consists of ornamental plantings dominated by *Carpobrotus edulis* and nonnative *Pinus sp.* A small area (approx. 150 square foot) of native *Rhus integrifolia* and *Corethrogyne filaginifolia* occurs in the far southwest corner of the property. Due to lack of connectivity, small patch size and dominance of nonnative species this area is not considered a functional native habitat.



Photograph No. 15

Northeast-facing view of the southern portion of the property (south parcel). Habitat within this area consists of disturbed and ornamental planting and developed areas. One mature *Pinus torreyana* can be seen in the background of the photo within the northern parcel.



Photograph No. 16

Northwest-facing view of the southern portion of the property (south parcel) looking up the driveway. Habitat within this area consists of disturbed and ornamental vegetation and developed areas.

Ryan Quilley

Biologist

4244 Willamette Avenue, San Diego, CA 92117

(610) 804-8916 | ryanquilley@gmail.com

Ryan Quilley is a Staff Biologist with over seven years of multidisciplinary biology and monitoring experience on transportation, energy/power (utilities), telecommunication (broadband), water resources (reclamation) and habitat restoration projects throughout southern and central California, Nevada and Arizona. In addition, he has participated in numerous marine research projects throughout the world. His diverse experience in environmental consulting consists of ecological research, regulatory compliance and wildlife relocation while investigating environmental impacts to biological resources, noise and air quality. Mr. Quilley has helped develop and implement mitigation plans and biological assessments, submitted documents and coordinated with regulatory agencies, conducted reconnaissance-level and focused protocol-level surveys for wildlife (birds, mammals, reptiles, amphibians, fish, insects) and plants, including federally and state-listed and special-status species, and performed biological compliance monitoring for large and complex projects and high-profile clients (e.g., IID, NV Energy, SDGE, US Navy, SCE) throughout the southwestern United States. Through Mr. Quilley's extensive experience, he has developed a knowledge and focus on avian nesting surveys and general avian behavior in southern and central California, having served as the lead biologist, assistant lead biologist, biological monitor and/or field survey contributor of avian nest surveys on over 25 projects. Mr. Quilley currently holds a USFWS permit to survey for the state and federally threatened California gnatcatcher, as well a flat-tailed horned lizard handling permit from the BLM. Mr. Quilley has also conducted protocol-level surveys with permitted individuals for the federally-endangered Quino checkerspot butterfly and arroyo toad.

Professional Experience

2017 - Present	Staff Biologist, Blackhawk Environmental Inc., San Diego, CA
2012 - 2017	Staff Biologist, AMEC Foster Wheeler, San Diego, CA
2012	Environmental Inspector, DUDEK, San Diego, CA
2011 - 2012	Field Biologist, Chambers Group Inc., San Diego, CA

Permits & Trainings

- USFWS California Gnatcatcher 10(a)(1)(a) Permit # TE-92462A-1
- CDFW SCP 12499
- BLM/CDFW Flat-tailed Horned Lizard Handling Permit
- San Joaquin Kit Fox Experience: 19 hrs. conducting trapping/telemetry tracking. 20 hrs. of game camera monitoring. Captured 2 individuals.
- Giant Kangaroo Rat Experience: 26 hrs. preconstruction surveys observed numerous active burrow complexes. Observed one nighttime individual.
- San Joaquin Antelope Squirrel Experience: 26 hrs. preconstruction surveys observed numerous active burrow complexes. Observed 4 individuals.
- Advanced Open Water Diver, PADI certified
- Southwestern Desert Bats Workshop
- Desert Tortoise Council Workshop and Egg Handling
- Quino Checkerspot Butterfly Permit (In Progress): Passed USFWS Exam + 33 hours of protocol surveys.
- Arroyo Toad Handling Experience: 20.75 hrs. of protocol surveys, handled 5 ARTO, observed 13 in the wild.
- Wildlife Society Western Division Arroyo Toad workshop
- Southwestern Willow Flycatcher Workshop and Training Session
- Least Bell's Vireo Nest Monitoring Permit (In progress): 5 hrs. protocol presence/absence surveys, 35.4 hrs. direct observation
- Qualified SWPPP Practitioner (QSP)
- Qualified Applicator License (QAL)
- OSHA HAZWOPER 40-hour Training Certification

Education

Sept 2010 **B.A. Marine Science Earth Systems - Magna Cum Laude**
University of San Diego, CA

SELECTED PROJECTS

Restoration

Los Peñasquitos Canyon Preserve Wetland Enhancement Project, City of San Diego, California. Restoration Specialist/Restoration Lead. Mr. Quilley is currently overseeing all restoration activities providing 6.64 acres of wetland enhancement mitigation to the enhancement portion of the mitigation program to offset impacts resulting from City of San Diego channel maintenance activities. As the restoration specialist, Mr. Quilley has the overall responsibility for implementation of the Wetland Enhancement Plan, overseeing work of the landscape contractor, monitoring, reporting, and mapping to ensure the site reaches the required success criteria. Mr. Quilley also is responsible for scheduling weed abatement, determining seeding or planting schedules ensuring the project avoids any impacts to native and sensitive species such as the federally-endangered willow monardella which occurs on site.

Citrus Business Park Springbrook Wash Restoration, City of Riverside, Riverside, Riverside County, CA. Restoration Ecologist. From 2014 to 2017, Mr. Quilley worked as part of the restoration team implementing a riparian restoration effort as part of a CDFW 1600 permit requiring the establishment and/or enhancement (restoration) of vegetation within a 4.8-acre portion of the Springbrook Wash. Mr. Quilley worked to restore habitat value and corridor value for wildlife species, and to enhance and restore native plant species habitat within this corridor specifically by minimizing nonnative plant species through the application of herbicide (an aquatic-approved form of glyphosate) using the foliar spray and cut stump methods as well as hand pulling smaller plants. Species targeted for treatment included eucalyptus, castor bean, tree tobacco, mustard species, yellow starthistle, poison hemlock, cheeseweed, cocklebur and puncture vine. In addition to restoration efforts, Mr. Quilley conducted vegetation monitoring, including: quantitative vegetation sampling using point intercept transects for determination of cover, belt transects for assessment of species richness, photo-documentation, and an assessment of plant survivorship. Vegetation sampling was conducted at four established 50-meter transects located within the restoration area.

Burlington Northern Santa Fe Railway (BNSF) Railway Derailment Impact Restoration Ludlow, Burlington Northern Santa Fe, unincorporated San Bernardino County, CA. Staff Biologist. Mr. Quilley worked as part of the restoration team in 2016 to restore surface disturbance to creosote scrub created by emergency response/repair work addressing train derailment sites at Ash Hill in the Mojave Desert near Ludlow, California on public land managed by the Bureau of Land Management (BLM).

Brodiaea filifolia Habitat Enhancement, NAVFAC Southwest, US Marine Corps Base Camp Pendleton, San Diego County, CA. Restoration Ecologist. From 2015 to 2017, Mr. Quilley worked as a restoration ecologist as part of a team performing habitat enhancement for the federally threatened threadleaf brodiaea (*Brodiaea filifolia*) on Marine Corps Base Camp Pendleton (MBCBP) in northwestern San Diego County, California. Endangered Species Act listed populations of least Bell's vireo (*Vireo bellii pusillus*) and coastal California gnatcatcher (*Poiloptila californica californica*) have been identified in previous years within and adjacent to the enhancement areas. The restoration process implemented a program of habitat enhancement for the brodiaea while avoiding populations of the listed bird species. The results of this habitat enhancement effort will provide the mitigation necessary for impacts to the brodiaea associated with various mission-related projects at MBCBP, and will assist in the recovery of this rare species. Mr. Quilley was involved in site preparation, invasive weed removal/control and exclusion fence installation.

Habitat Enhancement in Benefit of the Quino Checkerspot Butterfly, NAVFAC Southwest, Camp Michael Monsoor, La Posta, San Diego County, CA. Restoration Ecologist. Mr. Quilley worked as a restoration ecologist team member from 2015 to 2017 conducting habitat enhancement to benefit the federally endangered Quino checkerspot butterfly (QCB; *Euphydryas editha quino*) at Camp Michael Monsoor, an inland training facility administered by Naval Base Coronado known to support QCB. Habitat enhancement was conducted in both larval and adult habitat enhancement areas by removing weeds, thatch and patches of chamise (*Adenostoma fasciculatum*), coupled with augmentation of native plant material that included QCB larval host plants. Mr. Quilley assisted with host plant seed source mapping and collection.

San Diego Air Force Space Surveillance Station (SDFSS) Site Remediation Project, United States Air Force, Otay Mesa, San Diego County, CA. Restoration Ecologist/Staff Biologist. SDFSS is a 108-acre U.S. Air Force (USAF) installation located in the southern region of the City of San Diego. The project focused on fulfilling the USAF Habitat Restoration and Revegetation Plan within two munitions response sites within the installation as part of the Military Munitions Response Program (MMRP) Site Remediation Project. Mr. Quilley completed 40-hour HAZWOPER certification as a requirement to work on this project site. Mr. Quilley conducted habitat restoration efforts from 2014 to 2017 for federally and State-listed species, including Quino checkerspot butterfly (QCB), California gnatcatcher (CAGN) and Otay tarplant, as well as State-protected species including western burrowing owl. Restoration work included the installation of an irrigation system, native seed planting, and non-native weed control (hand-removal and herbicide application) with the overall goal of restoring coastal sage scrub and native grassland habitat on a previously active military shooting range. Mr. Quilley also independently conducted preconstruction nesting bird surveys within occupied habitat of CAGN and conducted QCB surveys (larval and adult) under the supervision of permitted biologists.

Hart Mine Marsh Invasive Plant Species Control, Bureau of Reclamation, Cibola National Wildlife Refuge, Cibola, La Paz County, AZ. Restoration Ecologist. From 2013 to 2017, Mr. Quilley conducted non-native invasive plant control within Hart Mine Marsh, Cibola National Wildlife Refuge through herbicide treatment and manual removal of invasive plants such as salt cedar (*Tamarix chinensis*) and fivehook Bassia (*Bassia hyssopifolia*). Habitat for the State-listed California black rail and federally listed Yuma clapper rail existed within the project site.

Imperial Irrigation District (IID) Planting Services for Managed Marsh Phase II, IID, Calipatria, Imperial County, CA. Restoration Ecologist. Mr. Quilley was a member of the restoration team in 2014 in charge of implementing the second of three phases to convert agricultural land to a managed marsh within Calipatria, CA. The Imperial Irrigation District is developing over 900 acres of a

managed marsh for the benefit of certain listed species, including the Yuma clapper rail and the California black rail. This project encompasses approximately 365 acres and was Phase 2 of the larger project. This project was designed to provide a mosaic of habitats including cattail marsh, alkaline marsh, saltbush scrub and a mixture of other riparian scrub and forest communities for the benefit of a number of covered species in the IID region. Mr. Quilley was a member of the team contributing to the design and planting of riparian, marsh and desert plant species, operating heavy machinery, guiding field team operations, and assessing overall project success.

Sorrento Valley Functional Assessments, City of San Diego, Los Penasquitos Preserve, San Diego, San Diego County, CA. Restoration Ecologist. Mr. Quilley conducted habitat assessments and mapping of invasive species in 2014 as part of the City of San Diego channel maintenance mitigation requirement. Surveys were conducted within the Los Penasquitos preserve to quantitatively determine habitat quality and map invasive species within the mitigation site.

Torres Martinez Wetland Habitat Creation Project, Salton Sea Authority Funding Agreement, Thermal, Imperial County, CA. Restoration Ecologist/Staff Biologist. In 2013, Mr. Quilley was the primary author of the Biological Assessment (BA) for a pilot project involving the creation of five acres of new wetland habitat and 10 acres of a solar photovoltaic array along the receding shores of the Salton Sea. The project proposed to use an array of new technologies including geotubes and solar PV to create wetlands and generate green energy, resulting in a fully energy sustainable restoration site. Preliminary reconnaissance surveys were conducted to collect biological data necessary to compose the Biological Assessment. Potential impacts to the federally-endangered desert pupfish, Yuma clapper rail and sensitive desert riparian and alkaline scrub habitats were assessed. In addition, mitigation measures and avoidance strategies relating to these species were discussed. Mr. Quilley participated in site visits and meetings to aid in the Biological Assessment process.

San Onofre Nuclear Generating Station (SONGS) San Dieguito Lagoon Restoration Project, Southern California Edison (SCE), Del Mar, San Diego County, CA. Avian Surveyor/Biological Monitor. In 2012, Mr. Quilley conducted presence/absence surveys and nesting bird surveys for all non-listed bird species, raptors, and federally, state-listed and special-status bird species including California least tern, western snowy plover, Belding's savannah sparrow, burrowing owl, yellow-breasted chat, white-tailed kite, northern harrier, yellow warbler, grasshopper sparrow and American peregrine falcon within the San Dieguito Lagoon, in northern San Diego County, California. In addition, he was tasked with ensuring that all construction-related activities followed mitigation measures, permits and regulations under NEPA and CEQA. Mr. Quilley attended meetings with upper level management of the project to discuss project progress and environmental concerns moving forward. In addition, Mr. Quilley was involved in conducting pre-construction grunion surveys at the lagoon/ocean interface.

Federal

San Pedro Defense Support Fuel Point Investigation Remediation Project (IRP) Site 32, San Pedro, Los Angeles County, CA. Kleinfelder CH2M Hill JV. Biologist/CAGN Biologist. Mr. Quilley conducted biological surveys within the San Pedro Defense Support Fuel Point specifically for the federally-threatened California Gnatcatcher and hostplants for federally-endangered Palos Verdes Blue butterfly (PVB). The DFSP San Pedro is last remaining location known to support the highly endangered PVB. The site was a historical debris dumping site from the 1940s to 1970s and required HAZWOPER 40-hour certification to work on the Project. The Project aim was to identify potential contaminants on site in order to adequately remediate the site. Mr. Quilley also performed biological monitoring during all construction activities and coordinated sensitive species avoidance strategies with project staff and management.

San Nicholas Island (SNI) Navy Offshore Landing Field (NOLF) - Invasive Species Mapping Project, NAVFAC Southwest, SNI NOLF, CA. Restoration Ecologist. Mr. Quilley conducted quantitative invasive species mapping in 2017 on San Nicholas Island as a component of the broader goal of identifying target locations for treating and preventing the spread of noxious invasive species within the island to restore the island's unique and sensitive natural resources. Specifically, targeted invasive species including tocalote, Sahara mustard, purple salsify, European beach grass, Bermuda grass, purple false brome and kikuyu grass were mapped across the entire, 23-mile, coastal zone and some inland portions of the island. During these surveys, Mr. Quilley worked in very remote areas of the island during severe weather, traversing more than 10 miles per day on-foot, much of which was within environmentally sensitive zones, including northern elephant seal pupping areas and Brandt's cormorant nesting colonies. Knowledge and respect of these resources was required to successfully complete this project. During these surveys, Mr. Quilley gained direct experience with northern elephant seal colonies among other pinnipeds, cormorant nesting colonies and endemic island species such as the island horned lark, island night lizard and island kit fox.

San Diego Air Force Space Surveillance Station (SDAFSSS) Areas 902b and 901d Lead Remediation Project, United States Air Force, Otay Mesa, San Diego County, CA. Staff Botanist/Biologist. In 2016 and 2017, Mr. Quilley conducted biological reconnaissance surveys and mapping efforts required to amend a previously approved USFWS take permit issued as part of the Military Munitions Response Program (MMRP) Site Remediation Project that involved the remediation of two munitions response sites within the SDAFSSS installation. Mr. Quilley independently conducted focused surveys for federally-listed species, including Otay tarplant and California gnatcatcher. In addition, Mr. Quilley led mapping efforts for tarplant populations and Quino Checkerspot butterfly (QCB) host plant mapping. Under the supervision of permitted biologists, Mr. Quilley conducted focused surveys for the federally endangered QCB. Mr. Quilley also provided biological construction monitoring during construction remediation work.

Coastal California Gnatcatcher Winter Territory Surveys/Habitat Transects, Post-Fire Habitat Study, NAVFAC Southwest, US Marine Corps Base Camp Pendleton, San Diego County, CA. Staff Biologist. In 2016 and 2017, Mr. Quilley conducted winter home range mapping of California gnatcatcher (CAGN) by conducting modified burst sampling of banded and unbanded CAGN pairs. Mr. Quilley conducted 69 individual surveys for 30 distinct pairs, totaling over 100 hours of protocol surveys. Point data and behavioral data was collected using the "Collector" application.

Installation Restoration (IR) Site 2, Naval Air Facility (NAF) El Centro, NAVFAC Southwest, El Centro, Imperial Valley, CA.

Staff Biologist. Mr. Quilley was a member of the biological team in 2016 that conducted three consecutive days of pre-construction surveys for western burrowing owls (BUOW) within the NAF IR Site and additionally helped lead and implement the passive owl relocation plan in accordance with the approved Biological Avoidance and Mitigation Plan (BAMP). During these surveys, 34 active BUOW burrows and over 80 potentially active burrows were identified. Mr. Quilley oversaw the construction of one-way burrowing owl doors installed to complete the relocation effort and carried out the first of two passive relocation efforts at the site. Mr. Quilley completed 40-hour HAZWOPER certification as a requirement to work on this project site.

Quino Checkerspot Monitoring Program, NAVFAC Southwest, Camp Michael Monsoor, La Posta, San Diego County, CA.

Staff Biologist. In 2015, Mr. Quilley mapped potential habitat and conducted USFWS protocol Quino checkerspot butterfly surveys (under the supervision of permitted individuals) on over 700 acres of potential habitat at this remote training site. He conducted siting studies to determine study areas, assisted in survey logistics and conducted surveys, including mapping of larval host and nectar plants. Surveys were then conducted over an approximately 470-acre area. Project challenges included remote, rugged locations and high elevation weather interfering with protocol requirements. The surveys were part of a long-term endangered species monitoring and management program for the base by the Navy.

Golden Eagle Studies at US Air Force Ranges in the Western United States, U.S. Air Force, Nevada, Idaho, Utah, and New Mexico.

Staff Biologist. Mr. Quilley aided in data analysis and data management for this multi-year project in 2013 and 2014, the purpose of which was to gather data on the distribution and use areas of golden eagle on several US Air Force ranges in the western United States associated with Mountain Home Air Force Base (AFB) in Idaho, Nellis AFB in Nevada, Cannon AFB in New Mexico and Hill AFB in Utah. Golden eagles were tracked visually and by satellite-linked GPS transmitters. Detailed nesting inventories and observations were also conducted. Extensive testing of transmitters was completed across the terrain of central Nevada to determine compatibility with military communications systems.

Renewable Energy

Mount Signal II Solar Project, Calexico, Imperial County, CA. Imperial County Planning & Development Services. Third party environmental inspection and reporting services, MMRP/CUP compliance, county liaison. Mr. Quilley conducted weekly third party inspections during project development in 2018 and 2019. Mr. Quilley conducted weekly third party environmental inspections during project implementation in 2018. Compliance inspections documented overall project compliance with Conditional Use Permits, Mitigation and Monitoring Compliance Plan, USFWS and CDFW permits, Dust Control Plan, Hazardous Materials Business Plan among many others. Mr. Quilley played a key role in coordinating compliance findings directly with the Project Owner, Construction Contractor, and other Federal, State and Local Agencies.

Wisteria Ranch Solar Project – Phase 1, Imperial County Department of Public Works, Calexico, Imperial County, CA.

Third Party Environmental Inspector. Mr. Quilley conducted weekly third party environmental inspections during project implementation in 2018. Compliance inspections documented overall project compliance with Condition Use Permits, Mitigation and Monitoring Compliance Plan, USFWS and CDFW permits, Dust Control Plan, Hazardous Materials Business Plan among many others. Mr. Quilley played a key role in coordinating compliance findings directly with the Project Owner, Construction Contractor, and other Federal, State and Local Agencies.

Midway Solar III Project, Imperial County Department of Public Works, Calipatria, Imperial County, CA.

Third Party Environmental Inspector. Mr. Quilley conducted weekly third party inspections during project development in 2018. Mr. Quilley conducted weekly third party environmental inspections during project implementation in 2018. Compliance inspections documented overall project compliance with Conditional Use Permits, Mitigation and Monitoring Compliance Plan, USFWS and CDFW permits, Dust Control Plan, Hazardous Materials Business Plan among many others. Mr. Quilley played a key role in coordinating compliance findings directly with the Project Owner, Construction Contractor, and other Federal, State and Local Agencies.

California Institute for Women Solar Project, EPD Solutions, Inc., Chino, San Bernardino CA.

Biologist. Blackhawk Environmental was contracted by EPD Solutions, Inc. for a proposed California Department of Corrections and Rehabilitation (CDCR) solar project tasked with: conducting a literature review; conducting an onsite biological reconnaissance survey and sensitive species habitat assessment; conducting the first of four focused burrowing owl (*Athene cunicularia*; BUOW) survey passes and; providing a biological technical letter report (BTLR) to incorporate the survey results. The Project covers approximately 10.27 acres of disturbed lands to the west of the prison grounds proposed for a solar array field. The Project is immediately west of the Chino Hills California Institute for Women (16756 Chino Corona Rd, Corona, CA 92880). Mr. Quilley played a direct role in completing all tasks and field efforts associated with completing the BTLR. In addition, Mr. Quilley was the primary author of the BTLR.

Panoche Valley Solar Project, Panoche Valley Solar, LLC, Panoche, San Benito County, CA.

Staff Biologist. From 2014 to 2016, Mr. Quilley worked as a field biologist on the proposed 2,506-acre Panoche Valley Solar Project. The project site was located within the biologically resource-rich Panoche Valley, occupied by numerous federally and state-listed species, including California tiger salamander, giant kangaroo rat, golden eagle, San Joaquin kit fox, San Joaquin antelope squirrel, blunt-nosed leopard lizard and California condor, as well as many other sensitive species of plants and animals. Mr. Quilley led the setup and implementation of San Joaquin kit fox (SJKF) game camera monitoring efforts and assisted permitted individuals with SJKF trapping, radio-collaring and tagging. Mr. Quilley conducted preliminary clearance surveys for test-pile boring and preconstruction surveys to identify biologically sensitive

areas to avoid impacts to the sensitive species known to coexist within the project area. Through Mr. Quilley's experience in Panoche Valley, he has direct experience with San Joaquin kit fox, giant kangaroo rat and San Joaquin antelope squirrel.

Ocotillo Wind Energy Facility, Bureau of Land Management, Ocotillo, Imperial County, CA. Third Party Environmental Compliance Monitor. Mr. Quilley served as a third party environmental compliance monitor in 2012 working directly for the Bureau of Land Management (BLM) for the Ocotillo Wind Energy Facility, a renewable energy construction project that consisted of 112 wind turbines in Ocotillo, California. Mr. Quilley was responsible for supervising all construction contractors and the lead biological monitoring contractor to ensure all project mitigation measures under federal and State permits and CEQA and NEPA regulations as outlined in the Mitigation Monitoring and Reporting Program (MMRP) and Environmental and Construction Compliance Monitoring Plan (ECCMP) were followed during night work operations. Mr. Quilley worked directly with agency personnel and construction management to address any environmental concerns and propose solutions to these concerns. Work occurred within habitats occupied by the BLM-sensitive flat-tailed horned lizard and burrowing owl. Numerous species of herpetofauna were encountered and relocated to avoid construction impacts during monitoring activities.

Tule Wind Project, Iberdrola Renewables LLC, San Diego County, CA. Avian Biologist. Mr. Quilley participated in conducting pre-construction nesting bird surveys during the 2013 breeding season in the McCain Valley area of San Diego County, California, according to the Nesting Bird Management, Monitoring, and Reporting Plan (NBMMRP). Mr. Quilley helped assess and recommend appropriate avoidance measures for identified nesting birds.

Energy

Rancho Bernardo Sub to Carmel Sub Tie-Line 633 Underground Project, San Diego, California. Environmental Compliance Coordinator. Mr. Quilley currently serves as an Environmental Compliance Coordinator (ECC) during 2018 to 2019 project construction. Mr. Quilley works directly for the Prime Construction Contractor conducting daily compliance monitoring, coordinating with construction project management personnel, and reporting. Mr. Quilley played a key role in during project implementation by providing daily guidance to the Construction Contractor on ways of minimizing potential environmental compliance risk while maximizing construction progress. As the ECC, Mr. Quilley contributed to all environmental compliance requirements of the project including compliance with the Mitigation, Monitoring, Compliance and Reporting Program (MMCRP), Final Environmental Impact Report (FEIR), County and City requirements, Traffic Control Plans (TCP), Stormwater Prevention and Pollution Plan (SWPPP), Hazardous Materials Management, Dewatering Permitting, Fire Prevention Plan, Reclaimed Water, Restoration Plan, Noise Mitigation, among many other project compliance requirements. Mr. Quilley acts as a direct liaison between the contractor, client and environmental consultants involved on the project to ensure the project can move forward efficiently, while still complying with all applicable local, state, and federal regulations.

San Diego Gas & Electric (SDG&E) Sycamore Canyon to Penasquitos 230kV Transmission Line Project, ARB, Poway and Miramar, San Diego County, CA. Environmental Compliance Coordinator. Mr. Quilley served as an Environmental Compliance Coordinator (ECC) during 2017 and 2018 project construction. Mr. Quilley worked directly for the Prime Construction Contractor conducting daily compliance monitoring, coordinating with construction project management personnel, and reporting. Mr. Quilley played a key role in during project implementation by providing daily guidance to the Construction Contractor on ways of minimizing potential environmental compliance risk while maximizing construction progress. As the ECC, Mr. Quilley contributed to all environmental compliance requirements of the project including compliance with the Mitigation, Monitoring, Compliance and Reporting Program (MMCRP), Final Environmental Impact Report (FEIR), County and City requirements, Traffic Control Plans (TCP), Stormwater Prevention and Pollution Plan (SWPPP), Hazardous Materials Management, Dewatering Permitting, Fire Prevention Plan, Reclaimed Water, Restoration Plan, Noise Mitigation, among many other project compliance requirements.

SDG&E Murphy Canyon Housing Restoration Area Weed Management, San Diego, San Diego County, CA – sub to AECOM. Pre-activity survey and report (PSR), sensitive plant species survey.

SDG&E FIRM Projects, sub to Amec and AECOM, Julian, Pine Valley, Santa Ysabel, & Ramona, San Diego County, CA. Biologist. In an effort to provide safe and reliable energy while also reducing fire risk, SDG&E is analyzing conductors and wood poles throughout its service territory to determine if maintenance or replacement is required. Part of this process involves the assessment of environmental conditions at each of the existing poles and rights-of way. In 2017 and 2015, Blackhawk was contracted by to conduct Pre-activity Survey Report (PSR) surveys and document preparation for several power distribution line sections in the vicinity of Alpine, Pine Valley, Julian, Santa Ysabel, and Ramona, in eastern San Diego County. Mr. Quilley served as a biologist on Circuit 971 in various grassland, scrubland, foothill cismontane and montane habitats. Mr. Quilley was tasked primarily with construction monitoring, variance request processing, SDG&E Contract Administrator coordination, environmental tailboard instruction, footpath designation, foremen and construction coordination, and as-needed services.

San Diego Gas & Electric (SDG&E) Fire Risk Mitigation Program (FIRM) Wood to Steel Pole Replacement Program, SDG&E, Pine Valley & Julian, San Diego County, CA. Staff Biologist. In 2014, Mr. Quilley served as a biological liaison and biological surveyor working with project engineers, designers, and project managers to determine the least intrusive strategies to complete pole replacement and maintenance work within sensitive Conservation Areas. The project involved replacement and/or maintenance, and reconductoring of 69kV distribution lines throughout San Diego County. Mr. Quilley conducted preconstruction site walks with the client and key project personnel to identify potential environmental concerns and best avoidance and minimization strategies including within occupied habitat for the state-listed arroyo toad. In addition, Mr. Quilley conducted preconstruction biological surveys during the 2014 bird nesting season. Project sites included Pine Valley and Julian. Part of these surveys also included assessing the presence of aquatic resources and providing logistical recommendations to reduce impacts to aquatic resources.

Path 42 Transmission Line Upgrade Project, Imperial Irrigation District, Indio, Riverside County, CA. Biological Lead. Mr. Quilley served as the Biological Field Lead from 2013 to 2014 for project-related compliance for the Path 42 transmission line upgrade project under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), EA/ISMND, MMRP and all relevant State and federal permits. The project consisted of tower reinforcement, foundation reinforcement and reconductoring of a 14-mile, 70-tower span through Coachella Valley. Mr. Quilley gained extensive compliance management experience through simultaneously coordinating project activities between up to 15 biological monitors and surveyors through several conservation areas, including East Indio Hills Conservation Area, Indio Hills Palms Conservation Area and Thousand Palms Conservation Area. Mr. Quilley coordinated and conducted preconstruction surveys for desert tortoise, desert kit fox, burrowing owl and American badger as well as led all field efforts during the nesting bird season. The project alignment transected core habitat for numerous sensitive species, including Coachella Valley fringe-toed lizard, flat-tailed horned lizard, LeConte's thrasher, Coachella Valley milkvetch and Mecca aster and sensitive habitat types, such as desert dry wash woodland, mesquite hummock, arrow weed scrub and desert saltbush scrub.

NV Energy 617 Transmission Line Rebuild Project, NV Energy, Lohantan to Lovelock, Churchill & Pershing Counties, NV. Staff Biologist. Mr. Quilley worked as a biologist in 2015 on the 63-mile long NV Energy 617 Transmission Line Rebuild Project. The project was located approximately 53 miles north-northeast of Reno, Nevada where numerous listed and sensitive resources have the potential to exist. Mr. Quilley was part of the biological and technical writing team that conducted baseline biological surveys to provide the final draft of a Categorical Exclusion document (CATEX). Mr. Quilley conducted an array of surveys consisting of vegetation community mapping, general and rare plant surveys, evaluating the potential for the presence of potential habitat for numerous BLM-sensitive and/or NNHP-sensitive species known to occur in the region such as the northern leopard frog, mountain plover, sage thrasher, Great Basin spadefoot toad, Dark kangaroo mouse, Pale kangaroo mouse, Sagebrush vole, Inyo shrew, Desert kangaroo rat, Western jumping mouse, bighorn sheep, American pika, Sierra alligator lizard, Sierra garter snake, northern rubber boa, sensitive sand dune beetles (e.g., sand mountain scarab), and sensitive butterflies (e.g., Mono checkerspot, Apache silverspot and Nevada viceroy). In addition, Mr. Quilley conducted assessments of potential nesting habitat for raptors and golden eagles, which included the positive identification of a golden eagle nest. Mr. Quilley conducted assessments for potential suitable bat roosting habitats and an inventory and mapping of all ephemeral drainages, creeks, streams, seeps, wetlands or other water resource within the survey corridor. Mr. Quilley also conducted presence/absence surveys for the BLM-sensitive and NNHP-sensitive burrowing owl.

San Diego Gas & Electric (SDG&E) FIRM Descanso Staging Yard Project, SDG&E, Descanso, San Diego County, CA. Qualified SWPPP Practitioner (QSP). Mr. Quilley conducted Stormwater Pollution Prevention Plan (SWPPP) compliance inspections in 2015 as a Certified Inspector of Sediment and Erosion Control (CISEC) for the San Diego Gas and Electric (SDG&E) Fire Risk Mitigation (FIRM) project staging yard in Descanso, California. Inspections of SWPPP compliance were also conducted along the transmission line corridor associated with FIRM projects. Mr. Quilley conducted daily inspections, coordinated with on site management personnel and submitted compliance reports.

NV Energy Mason and Smith Valley Transmission Line Project, NV Energy, Yerington, Mason and Smith Valley, Lyon County, NV. Staff Biologist. In 2015, Mr. Quilley worked as a biologist conducting preconstruction surveys on the 22-mile long NV Energy Transmission Line Project from Smith Valley to Yerington, Nevada. The project was located approximately 50 miles south-southeast of Reno, Nevada where numerous listed and sensitive resources have the potential to exist. Mr. Quilley was part of the biological and technical writing team that conducted baseline biological surveys to compose the Final Draft Environmental Assessment (EA). Mr. Quilley conducted an array of surveys consisting of vegetation community mapping, general and rare plant surveys, evaluating the potential for the presence of potential habitat for numerous BLM- and/or NNHP-sensitive species known to occur in the region such as northern leopard frog, mountain plover, sage thrasher, Great Basin spadefoot toad, dark kangaroo mouse, pale kangaroo mouse, sagebrush vole, Inyo shrew, desert kangaroo rat, western jumping mouse, bighorn sheep, American pika, Sierra alligator lizard, Sierra garter snake, northern rubber boa, sensitive sand dune beetles (e.g., sand mountain scarab), and sensitive butterflies (e.g., Mono checkerspot, Apache silverspot and Nevada viceroy). In addition, Mr. Quilley conducted assessments of potential nesting habitat for raptors and golden eagles, which included the positive identification of a golden eagle nest. Mr. Quilley participated in assessments for potential suitable bat roosting habitat and conducted an inventory and mapping of all ephemeral drainages, creeks, streams, seeps, wetlands or other water resource within the survey corridor. Mr. Quilley also conducted presence/absence surveys for the BLM and NNHP-sensitive burrowing owl.

Line Section 126 Cathodic Protection Unit Installation Project, Kinder Morgan Energy Partners, L.P., Talega Creek, US Marine Corps Base Camp Pendleton, San Diego County, CA. Staff Biologist. In 2014, Mr. Quilley conducted wildlife sweeps and construction monitoring during drilling operations associated with a deep well cathodic protection unit along Talega Creek in Camp Pendleton, San Diego County. Work was conducted along an environmentally sensitive riparian corridor with documented occurrences of the federally-threatened arroyo toad.

Line Section 126 Corrosion Testing Station Installation Project, Kinder Morgan Energy Partners, L.P., Del Mar, San Diego County, CA. Staff Biologist. Mr. Quilley conducted preconstruction nesting bird surveys in 2014 within the San Elijo Lagoon Ecological Preserve prior to the installation of a Corrosion Testing Station (CTS). Mr. Quilley also conducted construction monitoring during the CTS installation to ensure all permit requirements were followed. Work was conducted within sensitive coastal sage scrub, maritime succulent scrub and coastal salt marsh habitats known to host multiple federally and State-listed species as well as State-recognized sensitive species including the coastal California gnatcatcher, California least tern, light-footed clapper rail, Belding's savannah sparrow, white-tailed kite, yellow-breasted chat, yellow warbler, northern harrier, burrowing owl, and Belding's orange-throated whiptail among numerous species of sensitive plant species.

San Diego Gas & Electric (SDG&E) Wood To Steel Pole Replacement Project Tie Line 690C, SDG&E, US Marine Corps Base Camp Pendleton, San Diego County, CA. Assistant Lead Biological Monitor. In 2013, Mr. Quilley served as the assistant lead biological monitor on a four-month transmission line pole replacement and construction project within the environmentally sensitive southwestern portion of US Marine Corps Base Camp Pendleton. Mr. Quilley's role on this project was to ensure that field operations

followed all biological and environmental mitigation measures outlined in the Natural Communities Conservation Plan (NCCP). In addition, Mr. Quilley was the primary avian nest surveyor completing weekly nesting bird surveys during the 2013 breeding season along the alignment. Surveyed habitats included coastal sage scrub, maritime succulent scrub, riparian willow woodlands and salt marsh habitats; the salt marshes were occupied by the federally endangered Pacific pocket mouse. Multiple federally and state listed species were observed during surveys along the alignment as well as State recognized sensitive species including least Bell's vireo, coastal California gnatcatcher, California least tern, white-tailed kite, yellow-breasted chat, yellow warbler, northern harrier, olive-sided flycatcher, Belding's orange-throated whiptail and Coronado skink, among others.

San Diego Gas & Electric (SDG&E) Natural Communities Conservation Plan On-Call Biological Services, SDG&E, San Diego and Orange Counties, CA. Staff Biologist. From 2012 to 2014, Mr. Quilley provided on-call biological field support for planned and emergency operations and maintenance (O&M) activities associated with electricity transmission and distribution lines. Mr. Quilley participated in numerous pre-construction environmental resource and nest surveys throughout San Diego County including sensitive habitats such as the San Elijo Lagoon and habitats occupied or potentially occupied by multiple federally and/or State-listed species such as western snowy plover, California gnatcatcher, light-footed clapper rail, California Least tern, Pacific pocket mouse, northwestern San Diego pocket mouse, Belding's savannah sparrow, Belding's orange-throated whiptail and coastal cactus wren.

San Diego Gas & Electric (SDG&E) Wood to Steel Pole Replacement Project - Tie Line 626, SDG&E, Descanso, San Diego County, CA. Biological Monitor and Avian Surveyor. In 2012, Mr. Quilley conducted pre-construction general avian and raptor surveys, a raptor habitat assessment and vegetation surveys along the Wood to Steel Tie Line 626 alignment in Descanso, California. He was responsible for developing and implementing bird mitigation measures while considering construction needs to ensure all avian resources were protected during construction. These surveys were conducted within the following habitats: woodlands, non-native grasslands, developed areas, disturbed habitat and chaparral. Mr. Quilley was also responsible for ensuring that all construction activities occurred in accordance with the project MMRP.

San Diego Gas & Electric (SDG&E) Wood to Steel Pole Replacement Project – Tie Line 637, SDG&E, Ramona, San Diego County, CA. Biological Surveyor. In 2012, Mr. Quilley conducted pre-construction general avian and raptor surveys, a raptor habitat assessment, vegetation surveys and determined presence/absence of jurisdictional waterways, sensitive species and resources along the Wood to Steel alignment Tie Line 637 in Ramona, California. Mr. Quilley also conducted a USFWS protocol survey under the supervision of a permitted biologist for the federally endangered Quino checkerspot butterfly. These surveys were conducted within the following habitats: coastal sage scrub, woodlands, non-native grasslands, developed areas, disturbed habitat and chaparral.

Palmdale Transmission Line Project - Desert Tortoise Survey, SCE, Palmdale, Los Angeles County, CA. Staff Biologist. Mr. Quilley performed a focused presence/absence survey for desert tortoise (*Gopherus agassizii*) in 2015 for the proposed Palmdale Transmission Line Project alignment and its surrounding area in accordance with the *United States Fish and Wildlife Service 2010 Field Season Survey Protocol* (USFWS 2010). The proposed alignment in the City of Palmdale consisted of the combined 11-mile long survey area. Surveys were conducted in various habitats, including Joshua tree woodland, rabbitbrush scrub and disturbed habitats.

Sunrise Powerlink Raven Control Plan, San Diego Gas & Electric (SDG&E), Imperial County, CA. Avian Surveyor. Mr. Quilley conducted raptor and raven nesting surveys and raven roost location surveys in 2012 along SDG&E's Sunrise Powerlink transmission line and the Southwest Powerlink transmission line within the BLM Flat-tailed Horned Lizard Management Area encompassing approximately 23 miles and 132 tower sites. The surveys were completed during the breeding season for ravens in the desert region (February – early June) to identify those towers with nests potentially used by ravens. Nests identified on the Southwest Powerlink transmission line towers were recorded to provide a control for analysis of the effects of the Sunrise Powerlink on ravens. In addition, burrowing owl nest searching was also conducted. These surveys were done to fulfill a 5-year post-construction/restoration agreement with the BLM to assess the effects of the newly constructed Sunrise Powerlink on raven nesting habitat and its potential impact on the sensitive flat-tailed horned lizard.

Sunrise Powerlink Project, San Diego Gas & Electric (SDG&E), San Diego & Imperial Counties, CA. Biological Monitor, Environmental Inspector/Avian Monitor/Nest Surveyor. From 2011 through 2012, Mr. Quilley was responsible for keeping all construction-related activities in compliance with federal and State permits and regulations issued by the BLM, USFS, CDFG, CPUC, RWQCB and USACE under CEQA and NEPA regulations, including storm water prevention strategies, dust control, wildlife and plant avoidance strategies, bird nest monitoring, jurisdictional waterway protection, limiting take of listed species, and property boundary compliance. Ryan Quilley was also an agency-approved avian biologist working simultaneously as a biological monitor and spent thousands of hours observing bird behavior along the 117-mile long powerline, transecting San Diego and Imperial Counties through numerous habitats including riparian forests and woodlands, non-native vegetation, developed areas, disturbed habitat, chaparrals, coastal and montane scrubs, desert scrub and dunes, grasslands, meadows and herbaceous wetlands. Much of this experience included observing avian breeding behaviors, where Mr. Quilley became proficient in avian identification through both visual identification via songs and calls. Mr. Quilley conducted reconnaissance-level and focused protocol-level presence/absence surveys and nesting bird surveys for all non-listed bird species, raptors, and federally, State-listed and special-status species including coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, burrowing owl, yellow-breasted chat, white-tailed kite, loggerhead shrike, northern harrier, yellow warbler, grasshopper sparrow and American peregrine falcon (All permit-required surveys were under the supervision of permitted biologists). During these surveys, he assessed habitat suitability, compiled species lists, logged nest locations and monitored previously documented nests. The focus of these surveys was to identify new nests within a designated distance to all construction activities in accordance with the agency-approved Project Mitigation Measures. Once new nests were identified, he monitored those adjacent to construction activities for potential impacts through interpretation of their nesting behavior. Based on these observations, he helped design and implement take prevention strategies for nesting birds potentially impacted by construction and assessed the appropriateness for construction activities to occur in newly targeted construction areas. In addition, he was involved in writing high-priority, high-profile nesting bird justification (NBJ) reports to balance the needs of construction work while preventing any adverse effects to bird nests; these NBJs were then submitted to agencies. Mr. Quilley conducted pre-construction biological surveys multiple times per day for all non-listed and listed species of reptiles, amphibians, insects and mammals along the

Sunrise Powerlink right-of-way (ROW) and was responsible for all wildlife relocation for species potentially impacted by construction. Through the construction phase, he submitted multiple CNDDDB reports for sensitive species he found, primarily reptiles and birds. He also conducted presence/absence and clearance surveys for the federally endangered arroyo toad (under the supervision of permitted biologists), preconstruction vegetation assessment surveys and wrote reports for agency review and approval.

Communications

Digital 395 Broadband Project, California Broadband Cooperative (CBC), Southern California and Nevada. Biological Monitor and Surveyor. In 2011, Mr. Quilley conducted preliminary biological surveys and jurisdictional/wetland delineations, including the identification of all species found within the project ROW on the portion of the alignment between Lone Pine and Bishop, California. He was responsible for general biological surveys within riparian woodlands, herbaceous wetlands and desert scrub habitats. These surveys were submitted to the lead federal agency (Department of Commerce National Telecommunication and Information Administration) and the lead State agency (California Public Utilities Commission).

Transportation

San Vicente Road Improvement Project, San Diego County Department of Public Works, Ramona, San Diego County, CA. Biological Lead. In 2014 and 2015, Mr. Quilley worked as the Biological Lead for the Department of Public Works' San Vicente Road Improvement Project. The project involved improvements to approximately 2.25 miles of San Vicente Road, located south of the community of Ramona, California and lies partially within the County's MSCP Subarea (Metro-Lakeside-Jamul segment) and within lands that are targeted for conservation in the County's draft North County MSCP plan. Mr. Quilley served as the Biological Lead in charge of all monitoring and reporting of project compliance under the County's 401, 404, 1600 and EIR permit requirements. Mr. Quilley helped to coordinate project activities with the County to ensure permit measures are being met. In addition, Mr. Quilley was in charge of conducting nesting bird surveys for the project and implementation of avoidance strategies per the MBTA. The project was located within the following habitat types; agriculture, alkali marsh, southern coast live oak riparian forest, coast live oak woodland, Diegan coastal sage scrub, Diegan coastal sage scrub/chaparral scrub, freshwater marsh, nonnative grassland, nonnative woodland and southern willow scrub. The project alignment existed within a known significant population of the sensitive delicate clarkia. Mr. Quilley also advised tree trimming crews to ensure live oak tree trimming protocols minimize long-term impacts to the live oak woodland based on on-site training from the project arborist. Mr. Quilley conducted weekly construction monitoring and cleared construction areas of any sensitive resources including herpetofauna to minimize impacts to species such as the Belding's orange-throated whiptail, Coronado skink, western whiptail, western fence lizard, side-blotched lizard, gopher snake, southern pacific rattlesnake, speckled rattlesnake, Baja California tree frog and western toad, among numerous other reptile and amphibian species that occurred within the project limits. Mr. Quilley worked with project engineers, designers, and project managers to determine the least intrusive strategies to complete construction operations while still complying with project conditions and minimizing impacts to the environment overall.

Pine Creek Road Realignment Project, County of San Diego Department of Public Works, Pine Valley, San Diego County, CA. Avian Biologist. In 2016, the San Diego County Department of Public Works conducted realignment work on Pine Creek Road at the intersection with Old Highway 80 in the unincorporated area of Pine Valley in San Diego County, California. Mr. Quilley conducted a nesting bird survey within suitable habitat at the Project site and the surrounding area.

Bear Valley Parkway North Widening Project, County of San Diego Department of Public Works, Valley Center, San Diego County, CA. Staff Biologist. The County of San Diego Department of Public Works constructed the Bear Valley Parkway North Widening Project in 2014 near Escondido, California. CEQA documentation and regulatory permits associated with the project contained conditions related to biology and jurisdictional resources in the project area and required pre-construction surveys and monitoring during construction activities to ensure permit compliance. Mr. Quilley conducted preconstruction nesting bird and protocol-level surveys for the state and federally endangered least Bell's vireo in all potentially suitable habitats within the proposed project area. In addition to preconstruction surveys, Mr. Quilley also assisted in biological monitoring of the construction phases of the project to ensure that all Federal, State and County requirements were being met.

Descanso Pathway Project, County of San Diego Department of Public Works, Descanso, San Diego County, CA. Staff Biologist. In 2015, Mr. Quilley provided biological support and made recommendations to ensure construction activities remained in compliance with the project Mitigation, Monitoring and Reporting Plan (MMRP) and project permits. The County of San Diego Department of Public Works constructed the Descanso Pathway Project in Descanso, California in a region that is known to support the federally-endangered arroyo toad among several other sensitive species. Biological support included monitoring and helping to guide the installation of the arroyo toad exclusion fence, nesting bird surveys/monitoring and compliance monitoring.

Alpine Boulevard Streetscape Improvements Project, County of San Diego Department of Public Works, Alpine, San Diego County, CA. Staff Biologist. In 2015, the County of San Diego Department of Public Works completed streetscape improvements along Alpine Boulevard in the city of Alpine, California to provide for safe and contiguous pedestrian travel and conveyance of existing drainage flow. As part of the environmental review process for the project, Mr. Quilley conducted protocol-level presence/absence surveys for the state and federally endangered least Bell's vireo (*Vireo bellii pusillus*) and federally-threatened California gnatcatcher (*Poliotptila californica*) in all potentially suitable habitats within and adjacent to the proposed project area.

Woodside Avenue Flood Control Improvements Project, County of San Diego Department of Public Works, Lakeside, San Diego County, CA. Staff Biologist. Mr. Quilley provided as-needed biological support for the Woodside Avenue Flood Control Improvements Project of the County of San Diego Department of Public Works in 2015. Tasks included biological monitoring and nesting

bird surveys. The project involved improving the drainage channels around Woodside Avenue in the unincorporated community of Lakeside for flood control purposes. The proposed improvements required work around mature trees and removal of trees and vegetation within a densely vegetated riparian corridor consisting of riparian willow woodland and willow scrub habitat suitable for numerous sensitive species of riparian birds.

Cole Grade Road Improvement Project, County of San Diego Department of Public Works, Valley Center, San Diego County, CA. Staff Biologist. In 2015, Mr. Quilley conducted protocol-level presence/absence surveys for the federally-threatened California gnatcatcher (*Poliophtila californica*) required as a component of the EIR (AMEC Foster Wheeler was contracted to complete an Environmental Impact Report for this project). The San Diego County Department of Public Works proposed to improve a 2.84-mile segment of Cole Grade Road between Horse Creek Trail and Pauma Heights Road/West Oak Glen Road, in the unincorporated community of Valley Center.

De Luz Road Storm Damage Repair Project, County of San Diego Department of Public Works, Fallbrook, San Diego County, CA. Staff Biologist. Mr. Quilley was part of the biological field team from 2014 to 2015 that conducted nesting bird surveys, preconstruction surveys and compliance monitoring for this road repair project. The project entailed roadway and embankment repair and reinforcement, fence replacement, traffic striping, and restoration of two spillways. The project site existed along the Santa Margarita River near Fallbrook, California, where the federally listed California gnatcatcher, least Bell's vireo and arroyo toad have been documented. Habitats within and/or immediately adjacent to the project site includes southern arroyo willow riparian forest, southern willow scrub, southern riparian scrub, non-vegetated floodplain, coast live oak woodland, Diegan coastal sage scrub, coastal sage-chaparral scrub, and non-native grassland habitats. Mr. Quilley participated in eight hours of preconstruction clearance surveys for the endangered arroyo toad and assisted in monitoring the integrity of the arroyo toad exclusion fence. In addition, he completed general nesting bird surveys that included positively identifying an active family group of the endangered least Bell's vireo, gaining 18.9 hours of direct observation of the species. Mr. Quilley completed numerous nesting bird surveys for the project.

Rice Canyon Road Realignment Project, County of San Diego Department of Public Works, Rainbow, San Diego County, CA. Staff Biologist. Mr. Quilley conducted reconnaissance surveys for all sensitive and/or federally and state-listed species with the potential to occur in the survey area of the project in 2014, including herpetofauna, mammals, insects, birds and plants. He also conducted focused protocol-level surveys for the threatened coastal California gnatcatcher within and adjacent to the project limits as part of the Biological Technical Report (BTR) data collection. The proposed project consisted of the realignment of a portion of Rice Canyon Road in Rainbow, California. Habitats within and/or adjacent to the project alignment consisted of dense coast live oak woodland, Diegan coastal sage scrub, disturbed, non-native grassland, open coast live oak woodland, orchards/vineyards, southern coast live oak riparian forest, southern mixed chaparral and urban/developed lands.

Interstate 405 Expansion Project, Kiewit, Los Angeles, Los Angeles County, California. Biological Monitor and Nest Surveyor. In 2011, Mr. Quilley oversaw that all construction-related activities complied with federal and State-issued project permits and regulations. He conducted pre-construction nesting bird surveys in coastal sage scrub habitat adjacent to the Interstate 405 freeway in Los Angeles, California. He was involved in the submission of nest survey reports to the wildlife agencies and nest buffer recommendations. He was also responsible for any wildlife relocation in and around construction workers.

California State Route 73 Basins Maintenance Project, CALTRANS, Irvine, Orange County, CA. Staff Biologist. During 2016, Mr. Quilley conducted stormwater basin maintenance procedures along drainage culverts of California State Route 73 via the removal of nonnative plant species to ensure proper flow and efficiency of the stormwater basins.

Water Resources

Los Peñiquitos Sediment TMDL Monitoring Program, City of San Diego, California. Mr. Quilley conducted storm water monitoring at three locations during the 2018/2019 rain season and was responsible for ensure all sampling stations were performing properly during peak storm flow to ensure accurate data collection.

Hollister Street Pipe Cleaning, City of San Diego, California. Staff Biologist. Mr. Quilley conducted pre-construction surveys, nesting bird surveys, and construction monitoring support for the City of San Diego Transportation and Storm Water Department during routine storm drain maintenance work within various sensitive riparian habitats during 2018.

Mentone Street Erosion Control, City of San Diego, California. Staff Biologist. Mr. Quilley provided biological construction monitoring support for the City of San Diego Transportation and Storm Water Department during erosion control work occurring adjacent to the biologically sensitive Famosa Slough during 2018.

Montezuma Channel MMP, City of San Diego, California. Staff Biologist. Mr. Quilley conducted environmental compliance inspections in support of the City of San Diego Transportation and Storm Water Department during erosion control work occurring within the environmentally sensitive Montezuma Channel during 2018. Mr. Quilley assisted the City with providing inspections and reporting on project compliance during the construction phase of the project.

Palos Verdes Peninsula Water Reliability Project, City of Rolling Hills Estates, Los Angeles County, California. Avian Biologist. Mr. Quilley conducted 1 of 3 protocol level presence/absence surveys for the federally-threatened California gnatcatcher during the 2018 nesting season. The project consisted of approximately 7 miles of 24-inch and 30-inch buried potable water pipeline and a new pump station located primarily in the City of Rolling Hills Estates Portions of the pipeline that were proposed to be installed adjacent to native California sagebrush scrub habitat which contained suitable habitat to support CAGN.

Coachella Canal Lining Project - Desert Pupfish Monitoring Program, Coachella Valley Water District, Imperial, Imperial County, CA. Staff Biologist. In 2016, Mr. Quilley conducted data collection as part of an ongoing 8-year program to monitor habitat conditions of the Salt Creek desert pupfish population on the Dos Palmas Reserve, east of the Salton Sea. The program was designed to detect any effects of the recent lining of a 23-mile section of the Coachella Canal related to a potential decrease in leakage from the canal section. Monitoring activities involved collecting data such as biological conditions and stream physiography/flow conditions at a series of survey stations along the creek. Numerous spring-fed ponds were also monitored for changes in fringe vegetation, aquatic plant growth, and water quality. Tasks involved detailed vegetation transects, benthic habitat assessments, water chemistry testing, channel and flow mapping, and biological inventories. This data was compared to pupfish census data collected by the CDFW for assessment as part of an adaptive habitat management program. Project challenges involved intensive data collection in a remote, difficult environment.

San Diego Gas & Electric (SDG&E) South Bay Reclaimed Water Fill Station Project, SDG&E, San Diego, San Diego County, CA. Biological Monitor/Avian Surveyor/Nest Monitor. Related to the Sunrise Powerlink project in 2012, Mr. Quilley was responsible for keeping all construction-related activities associated with the construction of a reclaimed water truck filling station project at the US/Mexico border in compliance with mitigation measures, project permits and State and federal regulations. He conducted presence/absence surveys and nesting bird surveys for all non-listed bird species and raptors, plus federally, State-listed and special-status species including coastal California gnatcatcher, least Bell's vireo, yellow-breasted chat, white-tailed kite, northern harrier, yellow warbler, grasshopper sparrow. Mr. Quilley also monitored active gnatcatcher nests and surveyed occupied gnatcatcher habitat; all permit-required surveys and monitoring was under the supervision of a permitted biologist.

Development

San Sevaine Way Project, City of Jarupa Valley, County of Riverside, California. Designated Biologist. Mr. Quilley served as the designated biologist responsible for conducting preconstruction nesting bird surveys and BUOW clearance surveys. In addition, Mr. Quilley also conducted construction monitoring during the initial stages of construction, specifically to ensure construction activities complied with the Project's Streambed Alteration Agreement (1600) permit for fill and disturbance of a drainage.

Tige Watersports Development Project – Western Riverside MSHCP Habitat Assessment Report, West County Investments, City of Lake Elsinore, Riverside County, CA. Biologist and Primary Author. Mr. Quilley was the team lead that conducted a literature review, field reconnaissance survey, focused burrowing owl burrow survey and biological special-status species habitats assessment of the proposed Tige Watersports Project site to assess existing site conditions, as well as to assess the potentials for sensitive species or habitats to occur within and/or adjacent to the Project site. The Project is an approximately 2.78-acre watersports building site proposed in the City of Lake Elsinore, Riverside County, California. Mr. Quilley lead all field efforts and was the primary author of the Habitat Assessment Report

Environmental Site Assessment - Mountain View Industrial Park, North Las Vegas, Clark County, NV. Staff Biologist. Mr. Quilley conducted a Phase I Environmental Site Assessment and Impact Analysis in 2015 for the proposed development of a new automobile manufacturing facility in North Las Vegas. This effort required a preliminary evaluation of electronic databases and USFWS/Nevada Department of Wildlife correspondence letters prior to conducting the site evaluation. Following preliminary research, surveys were conducted to determine habitat suitability and/or presence/absence of sensitive flora and fauna covered under the Clark County MSHCP, including the federally threatened desert tortoise.

Academia & Research

Marine Corps Air Station Miramar Quino Checkerspot Butterfly Survey, Marine Corps Air Station Miramar, San Diego County, CA. Staff Biologist. Assisted in USFWS protocol Quino checkerspot butterfly surveys and host plant mapping under the supervision of QCB-permitted biologists during the 2018 QCB flight season. Mr. Quilley observed one live QCB during these surveys.

Border Field State Park Bird Monitoring Project, San Diego, San Diego County, CA. Biologist. Blackhawk Environmental Inc. and Mr. Quilley were contracted through California State Parks to complete protocol least Bell's vireo (*Vireo bellii pusillus*; LBVI) and California gnatcatcher (*Poliophtila californica*; CAGN) surveys during the 2017 and 2018 breeding seasons in the vicinity of the Goat Canyon sedimentation basin complex of Border Field State Park. The Project survey area encompasses roughly 221 acres and includes approximately 120 acres of riparian woodland and scrub habitat in the Goat Canyon sediment basin, Tijuana River Valley Regional Park and areas west of Bunker Hill. These areas are primarily located in the City of San Diego, with smaller portions also extending into unincorporated areas of San Diego County. Mr. Quilley conducted all of the CAGN and a portion of the LBVI surveys and contributed to the CAGN 45-day report.

Coral Reefs Impacted by Terrigenous Sedimentation, University of San Diego, St. John, US Virgin Islands. Research Assistant. While studying through the University of San Diego from 2009-2010, Mr. Quilley served as a Research Assistant under Sarah Gray, Ph.D. as part of a team of scientists that studied the anthropogenic impacts of construction (primarily unpaved roadways) to fringing coral reefs on the island of St. John in the US Virgin Islands. He submitted a Summer Undergraduate Research Experience Grant proposal and received full funding. Mr. Quilley specifically compared total suspended sediment, sediment flux and bottom sediment composition between three bays, analyzed potential factors influencing the existence of a unique mangrove coral community, and presented his results to University staff.

Comparison of the Geomorphology of the Leeward and Windward Coral Reefs of Orpheus Island, James Cook University, Townsville, Queensland, Australia. Field Study Assistant. In 2009, Mr. Quilley was a Field Study Assistant under Scott G. Smithers, Ph.D. He was part of a scientific team that compared and analyzed geomorphology between a leeward and windward coral reef and presented the results in a scientific paper. During the survey, he identified various Indo-Pacific reef organisms.

Impact of Beach Grooming on Percent Organic Matter, Macrofaunal Abundance and Biodiversity in Subtidal, Intertidal and Supratidal Zones, University of San Diego, San Diego, CA. Student Researcher. Mr. Quilley was a Student Researcher in 2009 under Mary Sue Lowery, Ph.D. He was a member of a scientific team that designed and presented a research study that collected and compared macrofaunal data between six transects at two beach locations and performed statistical analysis to evaluate the impact of beach grooming on beach macrofaunal ecology.

Potential Benthic Ecological Variations as a Result of Geographical Location, University of San Diego, San Diego County, CA. Student Researcher. In 2009, Mr. Quilley collected samples and identified biota aboard the Scripps RV Sproul Research Vessel to Independent Research in order to compare a multitude of biological and physical parameters to determine potential variables affecting ecological differences between three offshore sites within the California Bight.

Volunteer Work

Bird Banding Study, Audubon Starr Ranch Sanctuary, Mission Viejo, Orange County, CA. Volunteer. This program aims to collect information as it relates to overwintering and annual bird survival rates and indices of physical condition for migratory bird species in a variety of habitats and geographical regions ultimately to inform habitat conservation and management. In 2012 and 2013, Mr. Quilley served as a volunteer bird banding trainee. He participated in bird capture, banding and scientific data collection for the 2012 and 2013 MoSI (Monitoreo de Sobrevivencia Invernal or Monitoring Overwinter Survival) seasons.

Desert Bighorn Sheep Study, Arizona Department of Game and Fish (ADGF), Kingman, Mohave County, AZ. Volunteer. Mr. Quilley served as a volunteer biologist for a large-scale desert bighorn sheep (*Ovis canadensis nelsoni*) capture and collaring effort. He participated in the ADGF effort consisting of the capture of 37 desert bighorn sheep in the Lake Mead National Recreation Area and Mt. Wilson Wilderness Area. Volunteers aided in locating sheep herds and reporting their GPS locations, sizes, sexes and other pertinent information to an aerial patrol crew that was in charge of the sheep capture. Mr. Quilley acquired over 24 hours of field observations for the desert bighorn sheep and over 10 hours of direct observation hours for this species.