SOUTH ENVIRONMENTAL
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August 29, 2022

Stephanie Standerfer – Vice President
Albert A. Webb Associates
3788 McCray Street
Riverside, California 92506

RE: Burrowing Owl Survey Report for the Elsinore Valley Municipal Water District (EVMWD) Rice Canyon Reservoir Access Road and New Conduit Project, City of Lake Elsinore, California

Dear Stephanie,

This letter includes the results of focused survey for burrowing owl (*Athene cunicularia*) on approximately 45-acres area comprising an unpaved, dirt road (project site) in the town of Lake Elsinore in Riverside County, California (attached Figure 1 and Figure 2). The project site is 2.56-acres within Rice Canyon where there is a proposal to improve the road. The road is currently owned and operated by the Elsinore Valley Municipal Water District (EVMWD). The main goal of the survey was to identify the presence of burrowing owl and their burrows. The species is considered under The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) is a comprehensive plan to protect habitat and specific at-risk and rare species in the region, and the burrowing owl is highlighted in this plan. Specifically, Section 6.3.2 indicates the need for surveys to gain baseline data for the burrowing owl in the conservation area that the MSHCP covers.

The scope of this report includes a description of the project, biological setting, vegetation communities, survey methodology, and survey results that include burrowing owl behavior observations, and recommendations for project implementation that would avoid impacts to burrowing owls and active burrows. Photographs of the survey area and surveyors' qualifications are included as attachments to this report. The survey and report were prepared according to Appendix C and Appendix D of the *2012 Staff Report on Burrowing Owl Mitigation*).

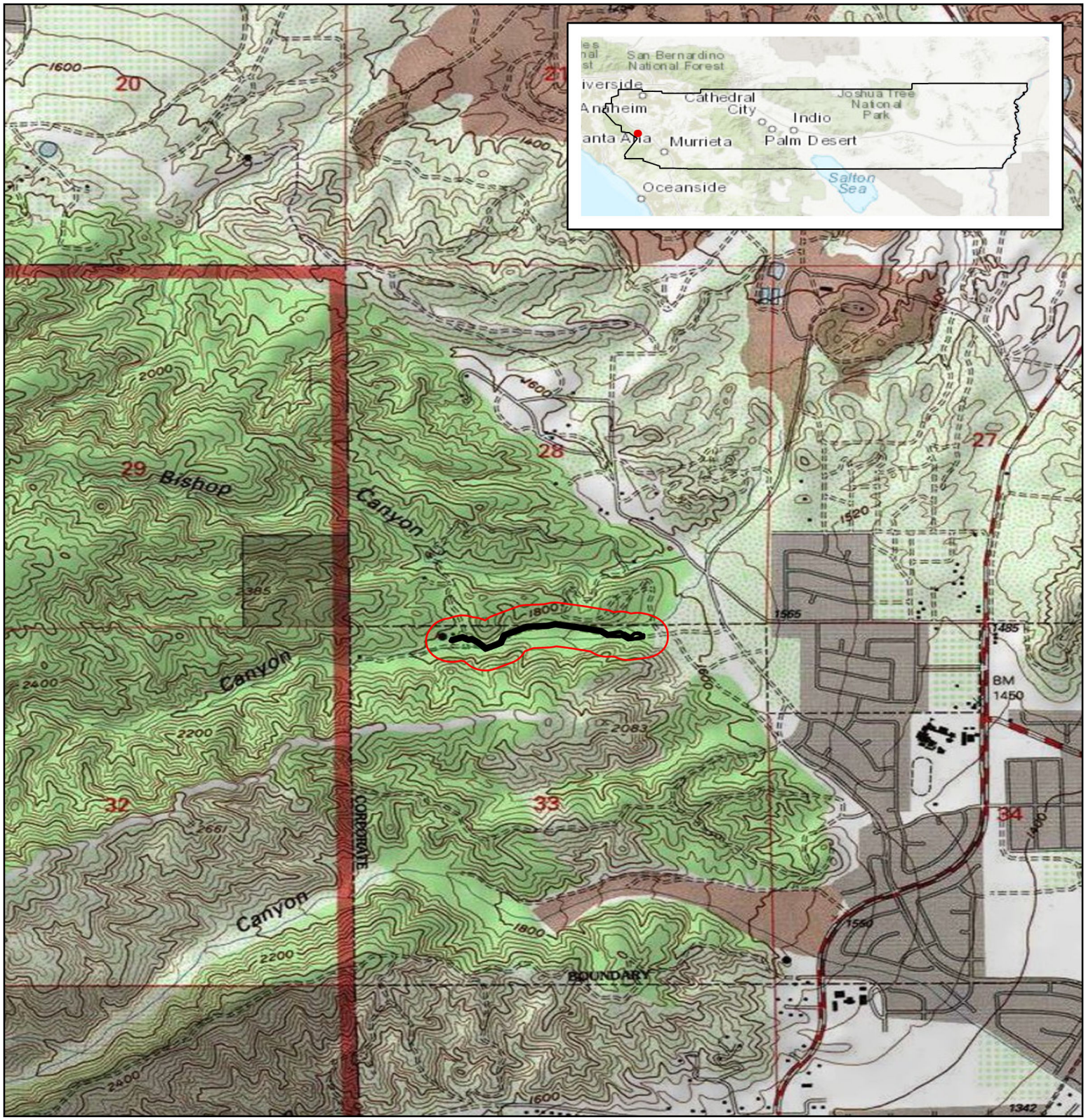
Project Description

Project Location

The project site includes 2.56-acres located west of Rice Canyon Elementary School and Dale Court in Rice Canyon in the town of Lake Elsinore, California. The unpaved, dirt Rice Canyon Reservoir Access Road extends west from Dale Court for approximately 2,500-feet and ends at an EVMWD water reservoir facility (attached Figure 1 and Figure 2). The area surrounding the project site to the north, south, and west is mountainous with undeveloped native habitats except for the existing water tank facilities at the west end of the project site. There is an ephemeral stream that winds along the canyon and the access road intersects with the stream. Urban development in the form of houses, community organizations, and roadways is present to the east of the project site beginning with Dale Court. The project site is located on portions of four assessor's parcels (APNs 394-140-003, 394-140-004, 394-150-001, 394-150-011, and 394-140-001) on the Alberhill USGS 7.5-minute quad in Sections 28 and 33 of Township 05 South and Range 05 West. The project site is located within the Elsinore Area Plan of the Western Riverside County MSHCP.

Proposed Activities

The EVMWD proposes to make improvements to the Rice Canyon Reservoir Access Road that include widening the road to a width of 40-feet and creating three new Arizona crossings through Rice Canyon Creek for a total project footprint of 2.56-acres. The improvements to the road will allow access for maintenance equipment to repair a conduit at the reservoir, and the project includes the future operation and maintenance of the road to allow for continued access to the reservoir.



Source: ESRI USA Topo Maps and World Topo Map 2022

EVMWD Rice Canyon Project

Figure 1. Project Location

Study Area (300-ft buffer)

Project Site

0 1,000 2,000 Feet

Scale: 1:24,000

N

Project Site is within the City of Lake Elsinore, California, in Riverside County on the USGS Alberhill 7.5-minute quadrangle map in Sections 28 and 33 of Township 05 South and Range 05 West

Center Coordinate (Decimal Degrees):
Latitude: 33.698366N, Longitude: -117.407709W

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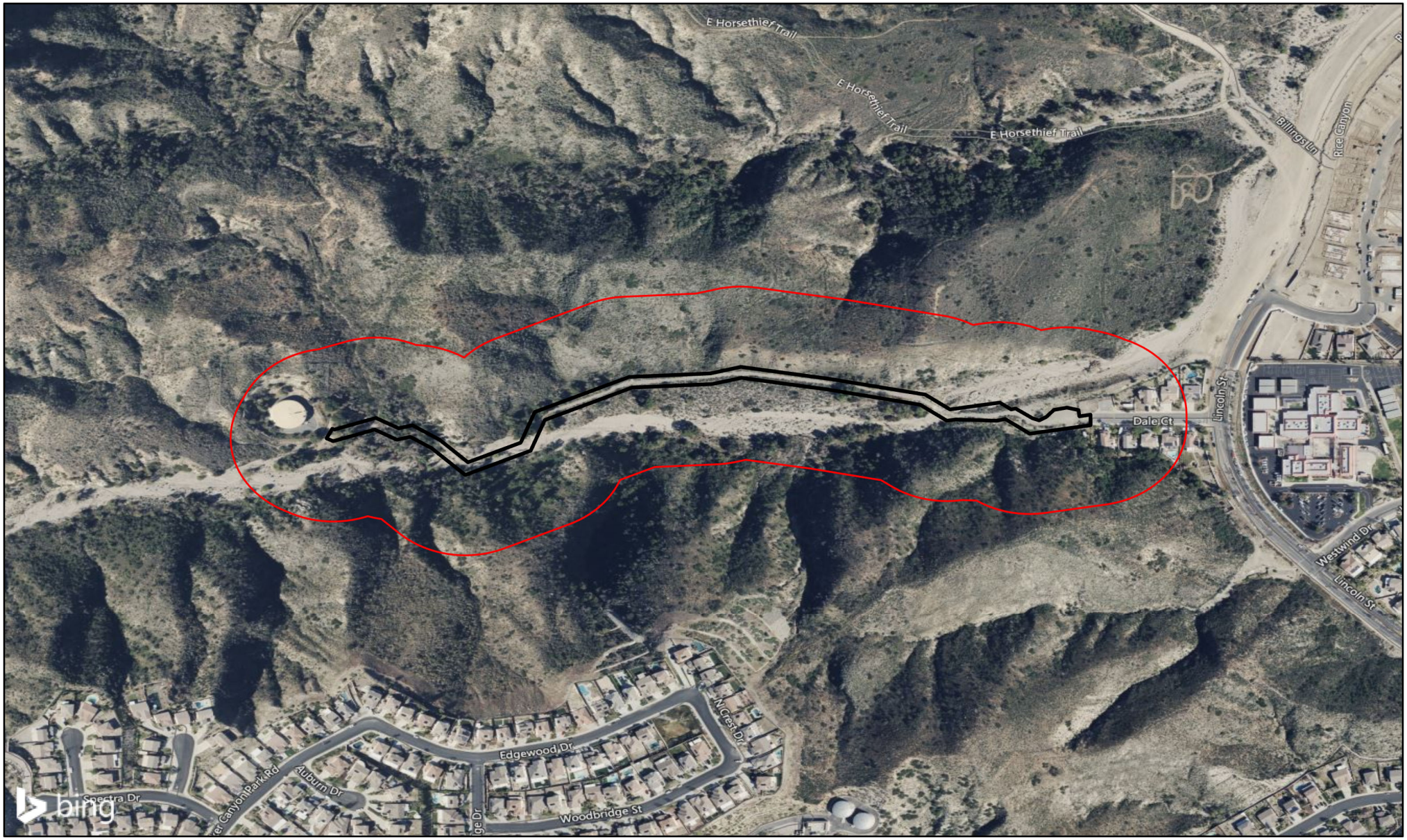

Source: BING Aerial Basemap 2022

EVMWD Rice Canyon Project

Figure 2. Project Site Vicinity

0 300 600 Feet

N

Study Area (300-ft buffer)

Project Site

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Environmental Setting

Topography, Hydrography and Climate

The project site is in Rice Canyon at the eastern edge of the Santa Ana Mountains and approximately 2.60-miles northwest of Lake Elsinore. It is within a relatively flat canyon area with steep slopes to the north and south. Areas to the north, south, and west are undeveloped and mountainous; to the east the topography is relatively flat. The project site is at an elevation of 1785-feet near the western end and 1650-feet near the eastern end (USGS 2022).

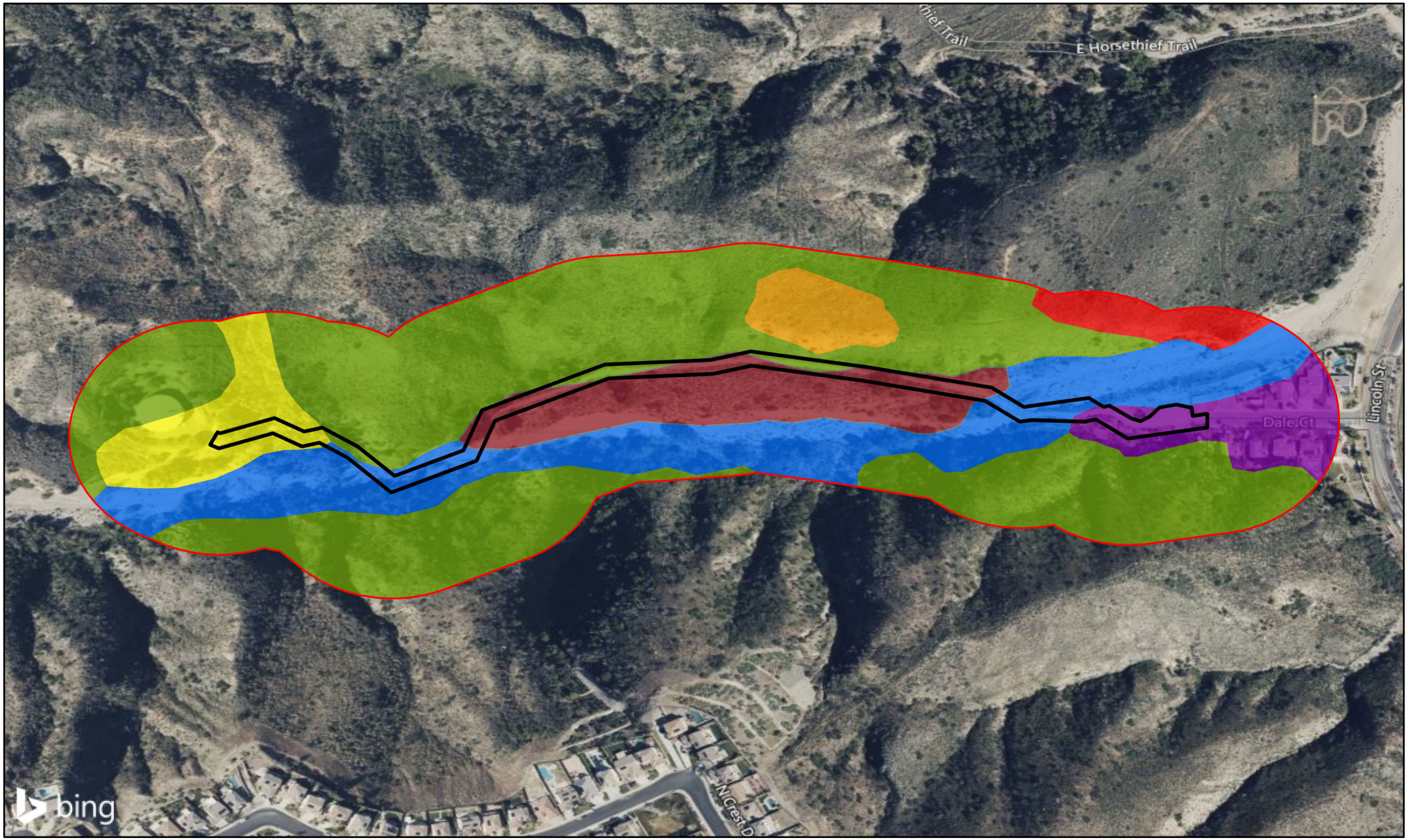
The project site is located within the Santa Ana watershed (HUC8) and within the Dawson Canyon-Temescal Wash sub-watershed (HUC12). At the base of the canyon is a riverine feature that is the remnant of a geologic feature that created Rice Canyon. The National Wetland Inventory (USFWS 2022) classifies the creek as a riverine system, intermittent streambed class that has a seasonally flooded water regime.

Climate in the region is hot and dry, with average summer high temperatures in the mid-90s and average winter lows in the low-40s. Average yearly rainfall is 2.63-inches, and the wettest months are December – March, and almost no precipitation between June-September.

Soils

Seven soils occur on the project site as shown in Figure 3:

- **Hanford coarse sandy loam, 2 to 8 percent slopes** occurs in the western part of the project site. This is an alluvial fan soil and is well drained.
- **Riverwash** occurs in the western part and eastern part of the project site. This is an alluvial fan soil and is well drained.
- **Tujunga loamy sand, channeled, 0 to 8 percent slopes** occurs in the central part of the project site. This is an alluvial fan and flood plain soil and is excessively drained.
- **Cieneba sandy loam, 30 to 75 percent slopes, eroded** occurs in the central part and western part of the project site. This is a residuum soil that is found on the side slope and backslope of hills and is somewhat excessively drained.
- **Soboba cobbly loamy sand, 2 to 25 percent slopes** occurs in the eastern part of the project site. This is an alluvial fan soil and is excessively drained (USDA/NRCS 2022).



Source: BING Aerial Basemap April 2022

EVMWD Rice Canyon Project

Figure 3. Soils

Project Site

Survey Area

Soils

Cieneba sandy loam, 30 to 75 percent slopes, eroded

Hanford coarse sandy loam, 2 to 8 percent slopes

Riverwash

Soboba cobbly loamy sand, 2 to 25 percent slopes

Tujunga loamy sand, channeled, 0 to 8 percent slopes

Vista coarse sandy loam, 15 to 35 percent slopes, eroded

Vista coarse sandy loam, 8 to 15 percent slopes, eroded

0 230 460 Feet

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Plant Communities

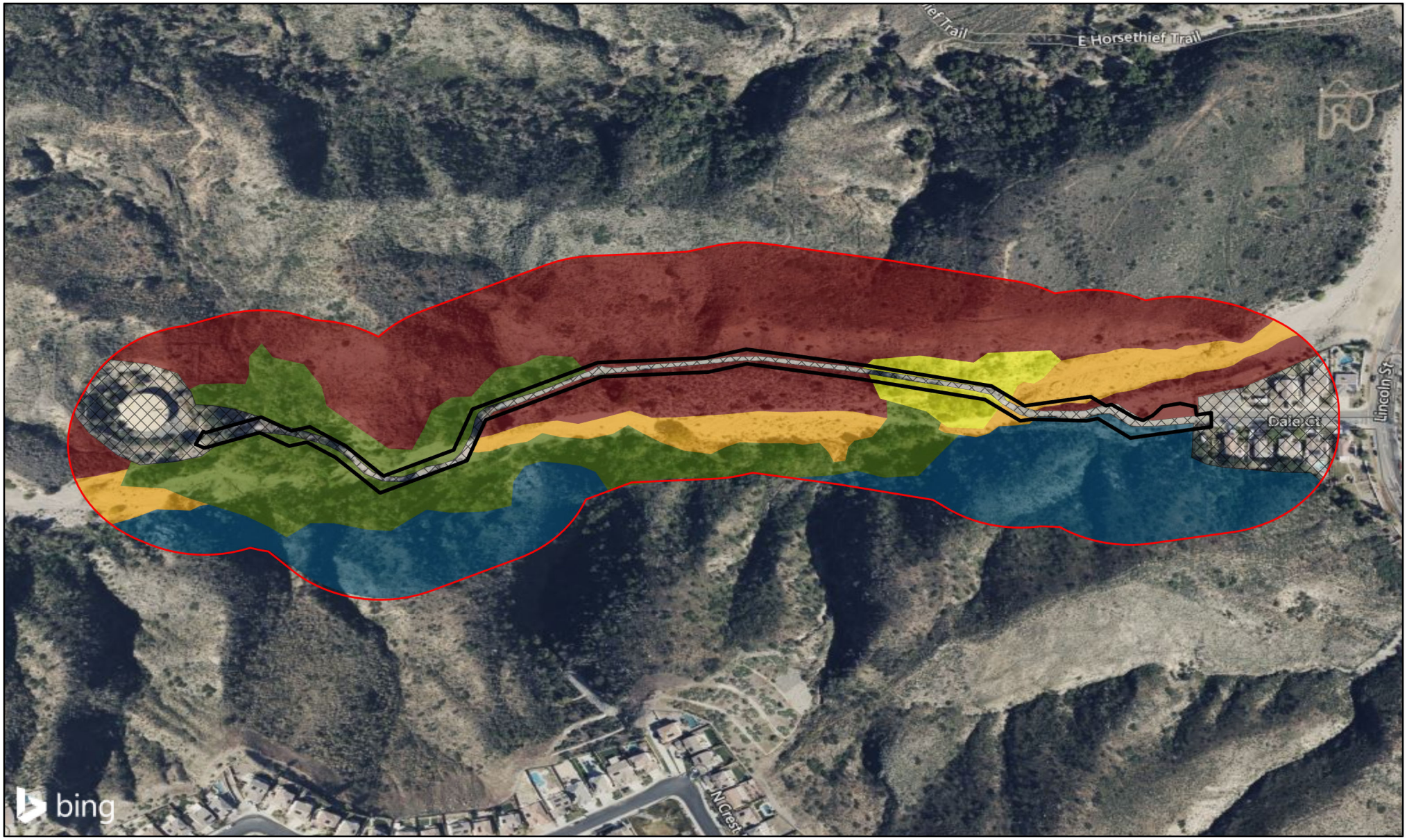
Five plant communities and one land cover type were identified on the study area. These communities are characterized in the Western Riverside County Multiple Species Habitat Conservation Plant (Dudek & Associates 2003) They are shown in Figure 3 and the acres of each are summarized in Table 1 below. Following Table 1. is a brief description of the communities.

Table 1. Summary of Plant Communities on the Study Area

Community or Cover Type	Acres on Survey Area	Acres on Project Site
Chaparral	9.37	0.15
Coast Live Oak Woodland	8.11	0.43
Disturbed/Developed	4.73	1.10
Riparian Forest	1.28	0.19
Riversidean Alluvial Fan Sage Scrub	3.55	0.08
Riversidean Sage Scrub	18.03	0.61
Total	**45.07**	**2.56**

- **Chaparral** is found on 0.15-acre of the project site south of the dirt access road near Dale Court. Chaparral also occurs on the north-facing slopes south of the project site. This community is dominated by thick-leaved yerba santa (*Eriodictyon crassifolium*), laurel sumac (*Malosma laurina*), nightshade (*Solanum* spp.), and deerweed (*Acmispon glaber*) near the project site, and a variety of other species are found on the slopes south of the project site: scrub oak (*Quercus berberidifolia*), hollyleaf cherry (*Prunus ilicifolia*), sugar bush (*Rhus ovata*), blue elderberry (*Sambucus cerulea*), and tree tobacco (*Nicotiana glauca*).

- **Coast live oak woodland** is found on 0.43-acre of the project site on the western third and surrounding the creek. This community is dominated by coast live oak (*Quercus agrifolia*) and has western sycamore (*Platanus racemosa*), toyon (*Heteromeles arbutifolia*), thick-leaved yerba santa, blue elderberry, laurel sumac, hollyleaf redberry (*Rhamnus ilicifolia*), sugar bush, deerweed, California buckwheat (*Eriogonum fasciculatum*), mulefat (*Baccharis salicifolia*), chamise (*Adenostoma fasciculatum*), coffee fern (*Pellaea andromedifolia*), giant wild rye (*Elymus condensatus*), chaparral bush mallow (*Malacothamnus fasciculatum*), and nightshade. This is a mature woodland with a mostly-closed canopy of oaks and a mixture of shrubs in a dense understory in upland areas, and a sparser understory of mulefat and other riparian and alluvial species in the woodland in the active floodplain of the creek.



Source: BING Aerial Basemap August 2022

EVMWD Rice Canyon Project

Figure 4. Plant Communities and Land Cover Types

0 225 450 Feet

N

Rice Canyon Project Site

Study Area (300-ft buffer)

Plant Communities

Chaparral

Coast Live Oak Woodland

Disturbed/Developed

Riparian Forest

Riversidean Alluvial Fan Sage Scrub

Riversidean Sage Scrub

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- **Disturbed and developed** areas occur on 1.10-acres of the project site. These areas include the existing dirt access road and damaged Arizona crossings, as well as portions of the reservoir development and the entrance at Dale Court. This is the most abundance cover type found on the project site.

- **Riparian forest** occurs on 0.19-acre of the project site surrounding the access road on the north edge of the first creek crossing on the eastern portion of the project site. This community is dominated by mature western sycamore and has laurel sumac, California sagebrush (*Artemisia californica*), Russian thistle (*Salsola tragus*), blue elderberry, deerweed, thick-leaved yerba santa, brittlebush (*Encelia farinosa*), and chaparral bush mallow. This community forms a loose canopy and has a dense understory of shrubs.

- **Riversidean alluvial fan sage scrub (RAFSS)** occurs on 0.08-acre of the project site within the two areas where the access road crosses the active floodplain of the creek. This community typically has sparse vegetation with small shrubs such as scale broom (*Lepidospartum squamatum*), thick-leaved yerba santa, brittlebush, deerweed, California sagebrush, chaparral yucca (*Hesperoyucca whipplei*), and a variety of ruderal species in the disturbed portions, including tamarisk (*Tamarix ramosissima*), striped treasureflower (*Gazania linearis*), shortpod mustard (*Hirschfeldia encana*), two-color rabbit tobacco (*Pseudognaphalium biolettii*), and wild Canterbury bells (Phacelia minor). There is a smaller portion of this community near the oak woodland within the active floodplain that has a minor amount of sapling Fremont's cottonwood (*Populus fremontii*) and willow (*Salix* spp.).

- **Riversidean sage scrub (RSS)** occurs on 0.61-acre of the project site primarily on the north side of the creek and on the south-facing slopes north of the project site. This community is dominated by thick-leaved yerba santa near the streambed, and has scrub oak, brittlebush, deerweed, chaparral yucca, laurel sumac, and California buckwheat. This community is mature, and the shrubs have some separation with less density and smaller size than the chaparral shrubs.

Methodology

Burrowing Owl Habitat Definition

According to the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) burrowing owls are well-adapted to open, relatively flat expanses of habitat characterized by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils. Grasslands, shrub steppe, and

desert are natural habitats used by burrowing owls, and they also are found in agricultural areas, ruderal grassy fields, vacant lots, and pastures when the vegetation structure is suitable and there are useable burrows with associated foraging habitat.

Habitat used by burrowing owls requires underground burrows or other cavities for nesting, roosting, and cover. Burrows are used by the owls year-round and are typically dug by other species such as California ground squirrel (*Otospermophilus beecheyi*). Natural rock cavities, debris piles, culverts, and pipes also are used by burrowing owls for nesting and cover. Foraging habitat is essential for burrowing owls, and they typically concentrate foraging efforts within 600-meters of the nest burrows. Therefore, abundant, and available prey within close proximity to the burrow is required for habitat.

Burrowing Owl Surveys

South Environmental conducted a habitat assessment for burrowing owls and four focused surveys within suitable habitat within the study area (project site and 500-foot buffer). A 500-foot buffer area was sufficient due to the linear nature of the project site and the steep walls of the canyon to the north and south that did not have suitable topography for burrowing owls, and therefore, did not require surveys. The surveys were conducted according to the methodology contained in Appendix D of the *2012 Staff Report on Burrowing Owl Mitigation*. The dates and times of the survey, weather conditions, and South Environmental surveyors present are presented in Table 2.

Table 2. Burrowing Owl Survey Summary

Survey #	Date - Time	Conditions (Temp, Wind Speed, Cloud cover, Precip.)	Surveyors
Habitat Assessment	2/9/2022 morning	64-81F, light winds (3-6 mph), fair, no precip.	Matt South, James McNutt, Scott Altmann
Survey #1	4/7/2022 morning, early afternoon	81-93F, calm to light winds (0-7 mph), no precip.	Scott Altmann, James McNutt
Survey #2	5/13/2022 morning, early afternoon	77-91F, calm to light winds (0-4 mph), fair, no precip.	Scott Altmann
Survey #3	6/16/2022 morning, early afternoon	77-95F, calm to light winds (0-8 mph), fair, no precip.	Scott Altmann
Survey #4	7/15/2022 morning, early afternoon	73-88F, calm to light winds (0-9 mph), fair, no precip.	Scott Altmann

The surveys were performed by walking along the entirety of the potential habitat (streambed) in a manner that allowed for complete visual coverage of all potential habitat areas and cover sites. The survey was conducted in the area best assessed to serve as habitat for the owl — dry streambed with Riversidean alluvial fan sage scrub. The streambed was narrow enough (<25-ft across) that equidistant transects were unnecessary. Where there were piles of boulders or cobbles which might be used as a burrow, the surveyors would stop and scan the area and investigate cavities in the boulders for sign of use by burrowing owls. All sightings of live burrowing owls and burrows were recorded and documented if any. Active burrows would be determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Locations of owls and burrows were recorded in the field using ArcGIS Field Maps mobile application and a Trimble R1 GPS Receiver to ensure that the accuracy of the measurements was less than 36-inches of error.

Burrowing Owl Survey Results

Habitat Assessment

The project site is within Rice Canyon and the majority of the study area lacks habitat for burrowing owls because it is too steep or has vegetation that is too dense. The steep walled canyons surrounding the stream are not suitable because burrowing owls use relatively flat areas for burrowing and foraging. The dense, tall vegetation in the woodlands and in the chaparral and sage scrub areas was unsuitable for burrowing owls due to the lack of open areas where owls could forage and the lack of burrows. The density of vegetation in these areas precludes burrowing owls from using them and the lack of burrows furthers our assessment that they are not habitat for burrowing owls.

However, the Riversidean alluvial fan sage scrub habitat in the streambed is sparse and occasional boulder piles provide crevices and cavities that could be used by burrowing owls. The streambed also has very low density shrubs and high visibility, which burrowing owls prefer, but it lacks a prey base such as California ground squirrel which were not observed there in abundance. The flat topography, sparser plant distribution, and piles of boulders and cobbles in the eastern study area comprise up fair habitat for the burrowing owl, but the lack of prey limits the potential for use by owls. The habitat along the western area of the streambed was sandier with fewer cobbles and boulders and less vegetation, and is less suitable due to lack of cover sites and the surrounding dense woodland that limits the visibility. The survey focused on the Riversidean alluvial fan sage scrub habitats, and largely in the eastern half of the study area where potential

cover sites were abundant. Photos of burrowing owl habitat on the project site are contained in **Attachment A**.

Survey Results

No presence of burrowing owl was detected at any time during the habitat assessment and four surveys conducted by South Environmental surveyors from early-February to mid-July of 2022. Thus, there were no sightings of burrowing owls or observance of potential burrows. There were no signs of owl presence including guano, pellets, prey remains, whitewash, or decoration outside of a potential entrance.

Conclusion

Based on the lack of owls observed and the lack of evidence of use by owls, South Environmental concludes that there are no burrowing owls inhabiting the Rice Canyon study area and none would be impacted by the project.

If you have any questions regarding the information in this report, please contact Matthew South by email: msouth@southenvironmental.com or by mobile phone: 303.818-3632.

Sincerely,

Matthew R. South
Principal Biologist

List of Attachments

1. **Attachment A**. Photograph Exhibit
2. **Attachment B**. Surveyors Qualifications

Bibliography

California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation.

Dudek & Associates (2003). Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Vol I & II. Prepared for County of Riverside Transportation and Land Management Agency, Riverside, California.

Riverside Conservation Authority (RCA). 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area.

State of California Natural Resources Agency. 2012. Staff Report on Burrowing Owl Mitigation.

US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 2022. Online Web Soil Survey Mapper https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm).

United States Geological Survey (USGS). 2022. National Hydrography Dataset (NHD) The National Map Viewer. Accessed online: https://viewer.nationalmap.gov/services/

United States Fish and Wildlife Service (USFWS). 2022. National Wetlands Inventory Online Wetlands Mapper. Accessed online: https://www.fws.gov/wetlands/data/mapper.html

Attachment A

Photograph Exhibit

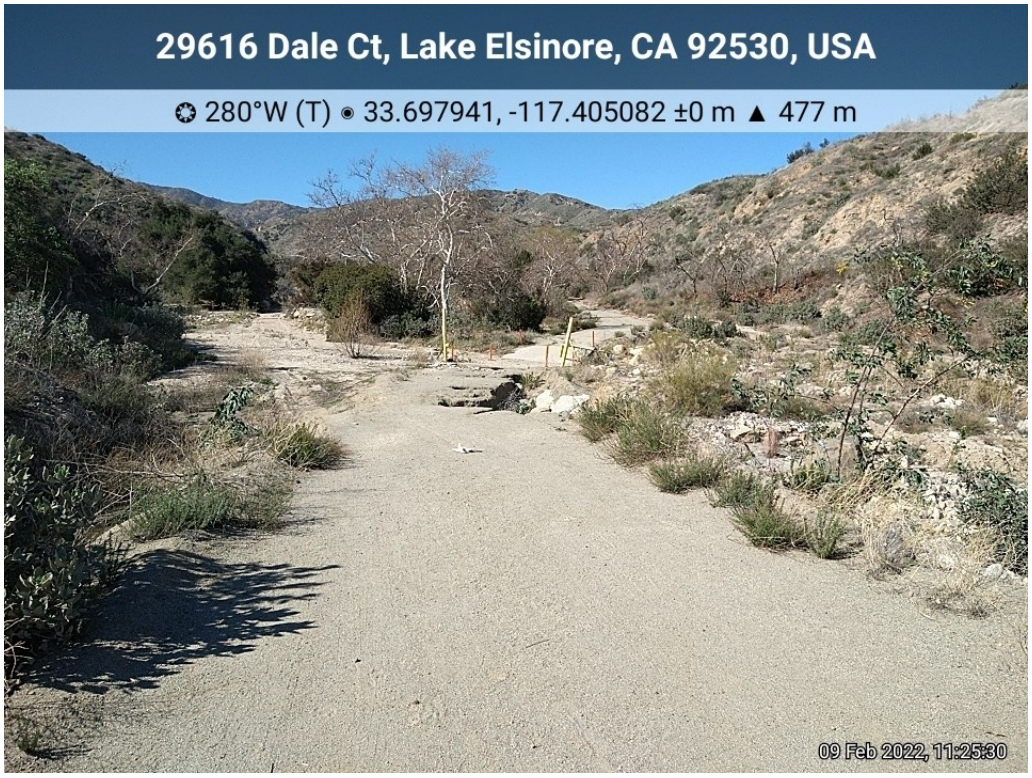

Photo 1. Depicts the access road where the eastern Arizona crossing will be constructed in Rice Canyon Creek.

Photo 2. Depicts Rice Canyon Creek at the washed out section of access road on the east end of the project.

Photo 3. Depicts Rice Canyon Creek floodplain north of the access road on the east of the project site.

Photo 4. Depicts the second project crossing through Rice Canyon Creek.

Photo 5. Depicts the second project crossing of Rice Canyon Creek. Old access road is visible in the foreground.

Photo 6. Depicts the third project crossing through Rice Canyon Creek on the west end of the project site.

Attachment B

Surveyors Qualifications

Email: msouth@southenvironmental.com
Mobile: 303-818-3632

Matthew South

PRINCIPAL BIOLOGIST

Matthew South founded South Environmental in 2018. He is a certified wildlife biologist and certified arborist with 16 years of professional experience providing natural resources consulting services for a wide variety of clients that include residential, commercial, government, utility, infrastructure, research, and non-profit projects. For the last 13 years, Mr. South has been an environmental consultant in southern California acting as a Wildlife Biologist and Geographic Information System (GIS) Analyst. In early 2018 he started South Environmental and has since been supporting clients in Los Angeles, San Bernardino, and Riverside Counties.

Mr. South's background in ecology has led to a passion for conservation planning and resources assessments for the purpose of preservation and management. The integration of the latest technologies such as advanced GIS systems, mobile computing, and drone sensing allows him to innovate new data collection, analysis, and collaboration tools for the environmental sciences that produce more accurate data and better-informed resource managers.

EXPERTISE

- **Conservation and Management Planning.** Mr. South's has extensive experience preparing mitigation and monitoring plans, habitat conservation plans, and technical biological resources management plans that are compliant with federal, state, and local regulations. Mr. South is the only active NRCS TSP for Fish and Wildlife Plans Certified in California.
- **Biological Resources Assessment.** Mr. South has completed dozens of biological resources assessments throughout southern California.
- **Rare Plants and Arborist Services.** Mr. South has surveyed and assessed thousands of native and landscaped trees in southern California. He is a certified arborist with 5-years of tree survey experience working closely with some of the most experienced arborists in California. In addition, he has performed hundreds of hours of rare plant surveys and habitat assessments.
- **Wetland & Jurisdictional Delineations.** Mr. South has conducted dozens of jurisdictional and wetland delineations per the guidelines and methods from the US Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and the state Regional Water Quality Control Boards (RWQCB).
- **GIS.** Mr. South is an expert at spatial data collection and analysis using ESRI mobile and desktop software products and Trimble hardware.

EDUCATION

B.S., Wildlife Ecology, University of Wisconsin-Madison, 2004

CERTIFICATIONS

Certified Wildlife Biologist, The Wildlife Society 2014

ISA Certified Arborist (WE-12564A) 2019

Certified Technical Service Provider (TSP) for Fish and Wildlife Management Plans, USDA NRCS 2017

Authorized Desert Tortoise Biologist – Numerous BOs

Unmanned Aircraft System Pilot Certification, FAA #4177603

TRAINING

Wetland Delineation Training Course – The Wetland Institute (2014)

Southwest Willow Flycatcher Workshop, 2017

USGS Desert Tortoise Health Assessment and Tissue Collection Techniques Training, 2009

SELECT PROJECT EXPERIENCE

Southern California Edison (SCE) As-Needed Natural and Cultural Resources Services (2021-ongoing). As a subconsultant on this contract Mr. South has independently conducted dozens of jurisdictional delineations, nesting bird surveys, rare plant survey, and tree surveys in support of the deteriorated poles operations and maintenance contract. He is a lead delineator for SCE and can independently conduct delineations in support of SCE operations, as well as conduct focused surveys for many of Southern California's protected plants and animals.

California Department of Water Resources (DWR) As-Needed Environmental Compliance Services (2012-2018). As part of this contract, Mr. South prepared conservation and biological resources planning documents as well as oversaw the implementation and compliance components of these documents. Most notably, Mr. South was the lead avian biologist for the billion-dollar Perris Dam Remediation Project where he prepared Avian Protection and Avoidance Plan, Feral Hog Management Plan, negotiated environmental mitigation and compensation with both the USFWS and CDFW biologists, conducted protocol surveys for endangered species such as least Bell's vireo, and oversaw the compliance monitoring efforts for the entire 5-years of project construction.

Los Angeles County Flood Control District and Department of Public Works As-Needed Environmental Compliance Services (2014-2018). As part of this contract, Mr. South conducted dozens of biological resources assessments, focused surveys for special-status species, and monitored compliance for a wide variety of water infrastructure project. Notably, Mr. South was the lead biologist for the Eaton Dam Maintenance Projects and for a variety of vegetation management programs within sensitive waterways.

California Coastal Zone Experience (2018-2021).

- Old Chimney Road Development, Santa Monica Mountains LCP (2018-present). Completed a BRA and oak tree survey per the LCP guidelines and presented to the Environmental Review Board (ERB).
- Gold Stone Road Development, Santa Monica Mountain LCP (2019-present). Completed a BRA, oak tree survey, and native tree survey per the LCP guidelines.
- Entrada Road Development, Santa Monica Mountains LCP (2020). Completed a BRA and oak tree survey per the LCP guidelines.
- Schueren Road Development, Santa Monica Mountains LCP (2019-2020). Completed a wetland delineation according to the California Coastal Commission guidelines.
- Decker Edison Road Development, City of Malibu (2020). Completed a BRA per the City of Malibu LCP guidelines.
- Malibou Lake Developments, North Santa Monica Mountains SEA (2020). Completed a biological resources map per the updated SEA guidelines.
- Medley Lane Development, Santa Monica Mountains LCP (2020). Completed a biological inventory per the guidelines of the Santa Monica Mountains LCP.
- Stunt Road Development, Santa Monica Mountains LCP (2018). Completed a BRA per the LCP guidelines.
- Malibou Lake Mountain Club, North Santa Monica Mountains SEA (2018). Completed permit packages for routine maintenance dredging of the lake, including a BRA, Section 404 CWA permit application, and CDFW Lake and Streambed Alteration Agreement.

Email: saltmann@southenvironmental.com
Mobile: 541-620-4438

Scott Altmann

SENIOR BOTANIST & ECOLOGIST

EDUCATION

-MSc, Environmental Sciences and Policy, The Johns Hopkins University

-BA, International Studies, University of Colorado, Boulder

SKILLS

-ESRI ArcGIS Desktop

-Trimble GPS

-Plant identification using dichotomous keys and regional literature

-Application of prominent plant data collection techniques

-Collection, analysis, and presentation of field data

-Statistical modeling and descriptive summaries

TRAINING

-Identification of plant communities with taxonomic keys, Malheur National Forest, 2019

-Ecological restoration of riparian ecosystems, Malheur National Forest, 2019

-Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation, Ochoco National Forest, Prineville, OR, 2019

-Identification of common range grasses, Flagstaff, AZ, 2019

Scott Altmann is a Senior Botanist and Ecologist with 23 years of professional experience. He has a high degree of expertise in plant identification using dichotomous keys and has extensive experience identifying rare and at-risk plants in remote field locations using regional plant guides. Much of his experience was gained in Chile where he worked as a freelance and contract research botanist, ecologist, and conservation biologist for over 13 years in collaboration with local universities, government agencies, and botanical gardens. More recently, Mr. Altmann has worked as a botanist to promote conservation of rare and at-risk species for the US Forest Service. For the past year he has worked for South Environmental working closely with large clients such as Southern California Edison (SCE) and private developers on Biological Resources Assessments, impacts analysis, and regulatory permitting.

Mr. Altmann is currently a senior biologist and ecologist with South Environmental with responsibilities including assessing project regulatory settings, developing an impacts assessment and mitigation approach for projects, and then prepares resources assessment reports, impacts analysis, mitigation and monitoring plans, and permitting documents for major utility projects and for large and small developers. Assessments performed are for protected trees, special-status plants and animals, sensitive natural communities, wetlands and jurisdictional delineations, and sensitive habitats.

Mr. Altmann is an expert at assessing projects according to local and regional, state, and federal laws, including experience in Los Angeles City and County, Ventura County, Orange County, San Bernardino, Riverside, Mono, Inyo, and Santa Barbara. He is familiar with the California Coastal Act and has a variety of experiences working in the coastal zone and with various Local Coastal Programs (LCPs). His experience assessing the regulatory setting for projects allow him to assess potential impacts within a variety of situations and land use types, and he can better assist clients with resources that span multiple jurisdictions and that have a variety of different biological resources that could be impacted.

Mr. Altmann has several publications in peer-reviewed scientific journals and has edited hundreds of technical documents and journal articles. He is a Journal Referee for several prominent scientific journals including Journal of Ecology, Plant Ecology, Annals of Botany, and New Zealand Journal of Botany.

SELECT PROJECT EXPERIENCE

SCE On-Call Biologist – Throughout California (2021-present). Conducts wetland delineations, rare plant surveys, and prepares reports and permitting documents for SCE deteriorated poles and for larger scale projects as needed. Work has been completed in several counties throughout California including Santa Barbara, Ventura, Los Angeles, Riverside, San Bernardino, Mono, Kern, Tulare, and Inyo.

Biological Resources Assessments for dozens of clients (2021-present). Scott is the lead biologist and main author for dozens of Biological Resources Assessment for projects that follow strict reporting guidelines such as the City of Los Angeles, the Western Riverside County MSHCP, and the City of Malibu Local Coastal Program.

Rice Canyon Access Road Project – East Valley Municipal Water District (2021-present). Scott is the lead biologist on this project overseeing the BRA, rare plant surveys, burrowing owl surveys, and the mitigation parcel assessments.

USFS Biological Science Technician – John Day, OR (2019). Surveyed streams as part of the Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation protocol for evaluation of critical habitat of two federally listed fish species:

- Performed as principal identifier of plants including trees, shrubs, forbs, grasses, sedges, and rushes
- Used taxonomic keys and regional botanical literature to identify plants
- Measured stubble height of graminoid species
- Assessed height, age, and animal browse of overstory woody species
- Assessed streambank stability and alteration (animal use) and stream width and gravel size
- Organized, reviewed, and summarized data at the local scale using the MIM analysis module
- Analyzed statistically and summarized data at the landscape scale for use in an end-of-year agency report
- Organized fieldwork logistics including site visits and equipment preparation

USFS Biological Science Technician – Williams, AZ (2017). Surveyed rare, at-risk, and endemic vascular plant species on lands designated for ecological restoration.

- Hiked 8 to 10 miles a day in diverse environments under variable climatic conditions

- Identified plant species in the field and lab using botanical keys and regional flora literature
- Used topographic maps to locate primitive roads and survey areas
- Used hand-held, electronic devices to traverse survey areas and record plant and habitat data
- Developed digital maps delineating plant populations in ArcGIS
- Ensured proper maintenance of field equipment and transport vehicles
- Presented talks to co-workers and school students on the local flora, ecology, and forest safety
- Redacted extensively a key Arizona rare and endemic vascular plant guidebook for plant nomenclature and morphology

Ecology and Botany Researcher – Rancagua, Chile (2003-2017). Developed or collaborated on ecological and botanical initiatives in central Chile with support from organizations including the Mayor University, University of La Serena, National Forestry Agency (CONF), National Agency for the Environment (CONMAN), Agriculture and Livestock Agency (SAG), Center for Investigation of Patagonian Ecosystems (CIEP), and National Botanical Garden. Major research is listed Publication; additional research projects:

- Ecology of the choroy (*Enicognathus leptorhynchus*) and cachaña parrot (*Enicoganthus ferrugineus*)
- Survey of the plant biodiversity including rare and at-risk species and promotion of sustainable development of the Tanume Experimental Forestry Reserve
- Survey of the plant community and assessment of anthropogenic threats of the National Reserve Río Los Cipreses
- Survey of the frequency and abundance of orchid (Orchidaceae) spp. in commercial pine plantations
- Taxonomic work on an orchid (Orchidaceae) of the genus *Chloraea*

- Disseminated information on opportunities to legally develop and protect wilderness areas
- Realized 37 lectures on biodiversity and wilderness protection at primary and secondary schools and community social organizations

USGS Research Assistant, Laurel, MD (2002-2003)

Participated in plant and wildlife habitat research projects including data collection, analysis, and management and report production:

- Effect of deer browsing on the growth of woody species of a forested wetland of Maryland
- Vegetation regeneration as part of an urban wetland restoration project in Washington, D.C.
- Habitat, migration patterns, and diet of two Northern Hemisphere avifauna species: black duck (*Melanitta nigra*) and scoter duck (*Melanitta perspicillata*)
- Effect of extended managed flooding of a North Carolina floodplain on the diversity and abundance of wildlife, vegetation, and macroinvertebrates
- Survey of the wildlife utilization of seasonally-saturated forested wetlands of Maryland
- Effect of different fertilizer types on the growth of seasonal grasses native to Maryland
- Population abundance and habitat of the endangered Delmarva fox squirrel (*Sciurus niger cinereus*) of the Delmarva Peninsula, Maryland

PUBLICATIONS

- Global patterns of herbivory in gap and understory environments, and their implications for woody plant carbon storage. December 2017. https://onlinelibrary.wiley.com/doi/abs/10.1111/oik.04686
- Insect abundance and damage on the deciduous *Nothofagus macrocarpa* increase with altitude at a site in the Mediterranean climate zone of Chile. February 2015. https://onlinelibrary.wiley.com/doi/abs/10.1111/aen.12142
- Crown condition, water availability, insect damage and landscape features: are they important to the Chilean tree *Nothofagus glauca* in the context of climate change? August 2013. http://www.publish.csiro.au/bt/bt13015
- Insect folivore damage in Nothofagus Blume trees of central Chile and its association with bottom-up plant community attributes. 2011. http://www.scielo.org.ar/scielo.php?script=sci_abstract&pid=S1667-782X2011000200001
- Reconocimiento del efecto de Cinara cupressi (Hemiptera: Aphididae) en el estado sanitario de Austrocedrus chilensis mediante imágenes multiespectrales. September 2009. https://scielo.conicyt.cl/scielo.php?pid=S0717-92002009000300005&script=sci_abstract&tlng=e

- Use of satellite-derived hyperspectral indices to identify stress symptoms on an *Austrocedrus chilensis* forest invaded by *Cinara cupressi*. January 2009. https://www.tandfonline.com/doi/abs/10.1080/09670870902725809
- Clasificación y caracterización de las comunidades de vegetación del Fundo Santa Elena, Comuna de Nancagua, Región de O'Higgins, Chile. Year 9 (2). 2006. http://www.chlorischilensis.com

Email: jamesbmcnutt@gmail.com
Mobile: 720-392-5065

EDUCATION

M.S., Earth, Environmental, and Physical Science, Wichita State University, 2012

B.S., Bachelor of Science, Biology, Wichita State University, 2004

PROFESSIONAL EXPERIENCE

AGEISS, Inc. (2020-present), Environmental Scientist

Timberwolf Environmental (2019), Senior Project Manager

Spec Pro Environmental Services, LLC (2019), Contract Field Technician

Nebraska Oil and Gas Conservation Commission (2018-2019), Project Manager

Stelbar Oil Corporation, Inc. (2006-2018), Project Manager

GIS

ESRI ArcGIS Pro, ArcCollector, Survey123, AccGIS online

Trimble GPS

James McNutt, M.S.

ENVIRONMENTAL SCIENTIST AND LEAD DELINEATOR

James McNutt is a Senior Environmental Scientist and Lead Delineator with 15 years' professional experience in environmental project management, jurisdictional and wetland delineations, environmental permitting and technical documents, and geology.

Mr. McNutt brings over 8 years' experience completing wetland delineations in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Delineation Manual Protocols. As a project manager, geologist, and environmental scientist for oil and gas companies, environmental consultants, and agencies in the west and Midwest, he oversaw wetland investigations and delineations on client assets such as well pads and drill-sites using the Criteria Determination Methodologies for Vegetation, Soil, and Hydrology. He has also completed permit applications and successfully negotiated wetlands and waters permits for dozens of projects, closely coordinating with clients, agencies, and managers. This includes projects requiring compliance with the Stormwater Pollution Prevention Plan (SWPPP), implementation of Mitigation Monitoring Reporting Plans, and regulatory compliance and data management.

Since starting at South Environmental in early 2021, Mr. McNutt has participated in dozens of jurisdictional delineations for Southern California Edison (SCE) environmental clearance projects throughout Southern California as a lead delineator. He is responsible for determining the boundary of jurisdictional features near SCE project features, using Trimble GIS to accurately collect data using ArcCollector and Survey123 per SCE attributes and data collection processes. He also is a GIS analyst that creates data packages for SCE JD reporting and permitting documents.

EXPERTISE

- Environmental Regulations and Permitting
- Environmental Project Management
- Jurisdictional and Wetland Delineations
- SWPPP and SPCC Reporting
- USACE Section 401/404 Compliance
- Biological Data Collection and Assessment Methods

SELECT PROJECT EXPERIENCE

Southern California Edison On-Call Environmental Services. Conducted jurisdictional and wetland delineation work, as well as nesting bird surveys for the on-call contract for biological resource assistance for standard construction, maintenance, and emergency projects throughout southern California. Activities include conducting wetland and jurisdictional delineations and monitoring work near protected resources.

Stelbar Oil Corporation Drill Site Environmental Investigation and Remediation Projects. Administered and managed the company's site environmental compliance efforts related to sampling, delineation, and site remediation, and wrote technical reports for site regulatory compliance. Oversaw the wetland investigations and delineations on drill-sites and company assets according to Sections 401/404 of CWA and USACE guidelines. Led data management for site regulatory compliance and oversaw variables for SWPPP and SPCCs. Served in a role dedicated to site environmental remedial tasks and was managed environmental consultants and state agency representatives regarding these efforts.

Nebraska Oil and Gas Conservation Commission Environmental Compliance and Permitting Projects. Served as a staff petroleum engineer and project manager responsible for coordinating site compliance, drilling permits, and well plugging efforts between oil companies, environmental consultants, and state agencies. Oversaw wetland investigations and delineations on drill sites and company assets. Held a key role as the representative for Groundwater Protection Council (GPC) meetings with the Environmental Protection Agency. Documented relevant public infrastructure and oil and gas facilities using TerraSync GIS program. Led database management for all state wells and oversaw reports for SWPPP and SPCC.

Timberwolf Environmental Consulting Projects. Served as a lead senior editor for the review and submittal of all company reports drafted by project scientists and project managers that also included Environmental Site Assessments and 3rd Party Audit Reports. Oversaw SWPPP and SPCC reporting efforts. Managed client Underground Storage Tank regulations and wetland investigation and delineations on BLM lands.

SPEC Pro Environmental Services, LLC Reece Air Force Base Projects. Served as a contract geologist conducting fieldwork, reporting, and mapper for base pollutants. Served as a project manager for inventory related to site functions, water treatment tank maintenance, and proper courier, chain-of-custody, and laboratory testing protocols.

AGEISS, Inc. Edwards Air Force Base Environmental Compliance Projects. Serves as an environmental scientist responsible for 3rd party review of numerous environmental reports submitted by various environment contractors, including Superfund (CERCLA) documents, site work plans, QAPP reports, Groundwater Monitoring reports, Conceptual Site Model reports, Bench Scale Study Reports, MMRP reports, and Well Installation reports. Developed a comprehensive understanding of the Superfund (CERCLA) funding and remediation processes and of the Compliance and Restoration Program. Requires consistent communication and coordination with the California State Water Resources Control Board, California Department of Toxic Substances Control, and the United States Environmental Protection Agency – Region 9.