

KLUTZ BIOLOGICAL CONSULTING



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**RE: Draft Biological Letter Report for Spring Valley Housing,
Record ID: PDS2019-TM-5636.
Project Address: Grand Ave. and Eucalyptus Street, APN: 578-161-02-00**

The following letter report documents onsite biological resources and anticipated impacts to biological resources related to the proposed Spring Valley Housing project located just west of Grand Avenue on, Assessor Parcel Number (APN) 578-161-02.

SUMMARY

The proposed project is a 7-lot residential subdivision with new single-family detached residences and an eighth lot that will be comprised entirely of a biological open space easement. Access to the proposed project will be from Grand Avenue. All proposed improvement will occur on-site. No off-site impacts are proposed or are necessary.

Habitats occurring within the study area (project site and a 100-foot buffer) include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub and developed land. Eight sensitive species were observed during surveys in 2018 and 2019 including Munz's sage, San Diego barrel cactus, Palmer's grappling hook, ashy spike moss, San Diego sunflower, California gnatcatcher, coastal cactus wren, and Cooper's hawk.

The project will impact approximately 4.07 acres of disturbed and undisturbed Diegan coastal sage scrub habitat (DCSS). DCSS impacts will be mitigated by the on-site conservation of 5.73 acres of Diegan coastal sage scrub and off-site purchase of 0.38-acre of DCSS (or Tier II habitat) at a County approved habitat mitigation bank. The project will also impact six individual San Diego barrel cactus. Mitigation for impacts to San Diego barrel cactus will include conserving two San Diego barrel cactus on-site and translocating an additional six San Diego barrel cacti to the on-site open space lot (Appendix F).

INTRODUCTION, PROJECT DESCRIPTION, LOCATION, AND SETTING

Project Description

The proposed project is a residential subdivision that proposes to split APN 578-161-02-00 (9.92 acres) into seven (7) legal lots that each will contain seven single family detached residences and one open space lot. Access to the proposed project will be from Grand Avenue.

Project Location

The Spring Valley Housing Project (project) is located in the southern portion of the community of Spring Valley, San Diego County, California (Figure 1). The map location of the project site is in the northeastern quarter of Section 5, Township 17 South, Range of the United States Geologic Service (USGS) 7.5' Jamul Mountains, California Quadrangle (UTM: 11-S: 500,300mE; 3,620,200mN) (Figure 2). The property lies southwest of the intersection of Grand Avenue and Eucalyptus Street. Grand Avenue is adjacent to the eastern boundary of the property. The property is located within the boundaries of the South County Segment of the San Diego County's Multiple Species Conservation Program (MSCP) Plan.

Project Setting

The study area includes the project APN and a 100-foot buffer from the parcel boundaries. In general, the project site is comprised of undeveloped open space lands that has been periodically impacted presumably by land uses associated with the adjacent residential properties. North, east, and west of the project site, single family and multi-family residential residences occur. South of the site a partially graded residential lot is undeveloped but also impacted by past grading activities. The northwestern portion of the project site connects to an isolated patch of open space that is approximately 15 acres in size. Northeast of the project site existing residences and a large open space area occurs. The open space area includes the upper slopes and peak of Dictionary Hill. This open space area was purchased by the County of San Diego in 2016 and is now part of the County of San Diego's MSCP South County Preserve.

The study area slopes moderately from the southwestern portion of the site to the northeastern portion of the site. The onsite elevations range from approximately 490 feet above mean sea level to 670 feet above mean sea level. The soils on the property are mapped by Bowman as San Miguel-Exchequer rocky silt loams, 9 to 70 percent slopes (SnG) (Bowman 1973). San Miguel-Exchequer soils form in residuum weathered from metavolcanic rocks. Specifically, the soil onsite (SnG) is comprised of 50% by San Miguel silt loam, 40% Exchequer silt loam and about 10 percent by rock outcrops (Bowman 1973).

Site Survey

The site was surveyed initially by Korey Klutz on February 2nd, 2018 from 11:10 A.M to 2:00 P.M. Weather conditions at the time of the survey consisted of clear skies, a light breeze, and a temperature of approximately 80 degrees Fahrenheit. Additional surveys were also conducted for spring rare plants, Quino checkerspot butterfly (Attachment A) and coastal California gnatcatcher (Attachment B). A summary of the surveys conducted are provided in Table 1. Please note that surveys conducted on the same day were not conducted at the same time. For instance, once Quino checkerspot butterfly surveys were completed, the surveyor would focus their attention on detecting or mapping rare plants. Similarly, three survey dates included conducting California gnatcatcher surveys in morning, Quino checkerspot butterfly survey during the mid-day hours, and then finally conducting rare plant surveys only after the other surveys were already completed. Survey methods for California gnatcatcher and Quino checkerspot butterfly surveys followed USFWS standard protocols. Please see Attachments A and B for further details regarding the protocols implemented and survey conditions.

Habitat or vegetation communities mapping was performed following the Biological Resource Mapping Guidelines within the Report Format and Content Requirements: Biological Resources (County 2010). Wildlife was identified directly by sight or by vocalizations, and indirectly by scat, tracks, or burrows. Field notes were maintained throughout each survey. The primary focus of the initial survey was to document and map the size, location, and general quality of all habitat types and determine the presence or potential presence of any sensitive resources (plant or wildlife) onsite.

Nomenclature for this report conforms to Hickman (1993), for plants, Holland (2008) and Oberbauer (1996) for plant communities and habitat types, American Ornithological Union (AOU 1998 and 2000) for birds, Jennings (1983) and Stebbins (2003) for reptiles and amphibians, Jones (1992) for mammals, and Powell (1979) for insects.

Table 1 Field Survey Summary

Survey	Personnel	Date
2018 Biological Surveys		
General Survey	K Klutz	2/2/2018
QCB #1 – RP	K Klutz (TE-036065-2)	2/26/2018
QCB #2 – RP	K Klutz (TE-036065-2)	3/7/2018
QCB #3 – RP	K Klutz (TE-036065-2)	3/12/2018
QCB #4 – RP	K Klutz (TE-036065-2)	3/19/2018
QCB #5 – RP	K Klutz (TE-036065-2)	3/28/2018
QCB #6 – RP - CAGN	A Borchert (TE-092162-2)	4/6/2018

QCB #7 – RP - CAGN	A Borchert (TE-092162-2)	4/13/2018
QCB #8 – RP - CAGN	A Borchert (TE-092162-2)	4/20/2018
QCB #9 – RP	K Klutz (TE-036065-2)	4/27/2018
QCB #10 – RP	K Klutz (TE-036065-2)	5/2/2018
QCB #11 – RP	K Klutz (TE-036065-2)	5/7/2018
QCB #12 – RP	K Klutz (TE-036065-2)	5/14/2018
RP	K Klutz	5/29/2018
2019 Quino Checkerspot Butterfly Surveys		
QCB #1	Weather conditions were not within protocol conditions the entire week.	
QCB #2	K. Klutz (TE-036065-2), L. Willrick	2/25/2019
QCB #3	K. Klutz (TE-036065-2)	3/4/2019
QCB #4	L. Willrick	3/13/2019
QCB #5	K. Klutz (TE-036065-2)	3/23/2019
QCB #6	K. Klutz (TE-036065-2)	3/30/2019
QCB #7	C. Brungraber	5/7/2019
QCB #8	C. Brungraber	5/12/2019
QCB #9	C. Brungraber	5/19/2019
QCB #10	C. Brungraber	5/26/2019
QCB #11	C. Brungraber	5/5/2019
QCB #12	Adult flight season ended. Permission was received from the USFWS to end surveys during Week #11.	
QCB = focused United States Fish & Wildlife Service (USFWS) Quino checkerspot butterfly survey. RP = spring rare plant survey. CAGN = focused USFWS coastal California gnatcatcher survey.		

Biological Resources Present

The site is comprised of undeveloped open space lands dominated by Diegan coastal sage scrub plant species. A moderate level of disturbance has occurred onsite and is presumably due to the indirect effects of the adjacent residential community.

REGIONAL CONTEXT

The project is located within the Unincorporated Land in the Metro-Lakeside-Jamul Segment of the County’s South County MSCP. The northeastern boundary is approximately 100-feet away from the southwestern portion of the County’s Dictionary Hill Preserve (Figure 3). The Dictionary Hill Preserve is part of the larger SC MSCP Preserve system.

HABITATS AND VEGETATION COMMUNITIES

The following is a summary of the existing habitats and vegetation communities on the site. This section includes information on the habitat types, the dominant species present, and the habitat quality. Species abundance, composition, and diversity are discussed in terms of vegetative structure and wildlife, as well as the habitat sensitivity level and regional and local importance of conserving each habitat type.

Habitats

Habitats were classified and mapped based on Terrestrial Vegetation Communities in San Diego County based in Holland's Descriptions (Oberbauer 2008). The best-fit definition based on the dominant plant species and County's current description is provided. Habitats occurring within the study area include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, and developed land. A complete list of all plant species observed during the field surveys is provided as Attachment C.

Diegan Coastal Sage Scrub (Habitat Code: 32510, Tier II)

Diegan coastal sage scrub typically is comprised of sparse, low-growing shrubs that are aromatic, soft, and mostly gray-green in color. Common plants include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and lemonadeberry (*Rhus integrifolia*). Onsite this habitat includes several special status rare plants including Munz's Sage (*Salvia munzii*), San Diego barrel cactus (*Ferrocactus viridescens*), ashy spike most (*Selaginella cinerascens*), and San Diego sunflower (*Bahiopsis laciniata*). San Diego sunflower is a codominant shrub onsite and the other three rare plants are sparsely distributed throughout the site (Figure 3).

The project site also contains areas mapped as disturbed Diegan coastal sage scrub (Figure 5). These areas have been impacted by pedestrian use, dumping, and there is also evidence (burn scars) of a relatively recent fire that impacted primarily the southern portion of the site. This disturbed portion of the site contains a higher percentage of invasive weeds including shortpod mustard (*Hirschfeldia incana*), filarre (*Erodium* sp.) and non-native grasses (rip-gut (*Bromus diandrus*), slender wild oat (*Avena barbata*) and foxtail (*Bromus rubens*).

Urban/Developed Lands (Habitat Code: 12000, Tier IV)

Developed lands occur adjacent to the project site on all four sides (north, south, west, and east). These developed lands include a paved road (Grand Avenue), a dirt driveway/road (south of project site) and residential buildings (north, west, and east).

Wildlife

In total, 25 vertebrate species were detected during the surveys, including 20 species of birds. A complete list of vertebrate species detected during the surveys is presented in Attachment D.

Special Status Species

The following is a summary of all sensitive species with potential to occur on the site or on land immediately adjacent to the project area. Sensitive or special status plant and wildlife species and habitats are those that are considered rare, threatened, or endangered within the state or region by local, state, or federal resource conservation agencies. Sensitive species are so called because of their limited distribution, restricted habitat requirements, susceptibility to human disturbance, degradation due to development or invasion by non-native species, or a combination of all of these factors.

The following were used in the determination of sensitive biological resources: U.S. Fish and Wildlife Service (USFWS) (2007, 2010); California Department of Fish and Game (CDFG) (2009, 2010a, 2010b, 2010c), County Sensitive Plant and Animal list (County 2010), California Native Plant Society (CNPS) online inventory (2018), and the California Natural Diversity Database (CNDDDB 2018).

Sensitive Plants

The literature search identified 32 sensitive plants that have the potential to occur on or have been observed relatively close to the project site. Plants with potential to occur include: San Diego needlegrass (*Acanatherum diegoensis*), San Diego Ambrosia (*Ambrosia pumila*), Palmer's sagebrush (*Artemisia palmeri*), Dean's milk-vetch (*Astragalus deani*), Orcutt's brodiaea (*Brodiaea orcuttii*), Brewer's calandrinia (*Calandrinia breweri*), Lewis's sun cup (*Camissonia lewissii*), Slender Pod Jewelflower (*Caulanthus stenocarpus*), Prostrate spineflower (*Chorizanthe procubens*), Summer holly (*Comarostaphylis diversifolia diversifolia*), small flowered morning glory (*Convolvulus simulans*), western dichondra (*Dichondra occidentalis*), Variegated dudleya (*Dudleya variegata*), Palmer's goldenbush (*Ericameria palmeri palmeri*), Large leaf fillary (*Erodium macrophyllum macrophyllum*), San Diego button celery (*Eryngium aristulatum parishii*), Coast barrel cactus (*Ferocactus viridescens*), Mission blue cups (*Githopsis difusa filicaulis*), Palmer's grappling hook (*Harpagonella palmeri*), Graceful tarplant (*Holocarpa virgata elongata*), Decumbant goldenbush (*Isocoma menziesii decumbens*), San Diego marsh elder (*Iva hayesiana*), Robinson's peppergrass (*Lepidium virginicum robinsonii*), Rush like bristle bush (*Xanthisma junceum (Machaeranthera juncea)*), Willowy monardella (*Monardella viminea (Monardella linoides viminea)*), San Diego goldenstar (*Bloomeria clevelandii (Muilla clevelandii)*), Little mousetail (*Myosurus minimus apus*), Spreading navarretia (*Navarretia fossalis*), Golden-rayed pentachaeta

(*Pentachaeta aurea aurea*), Munz's sage (*Salvia munzii*), ashy spike moss (*Selaginella cinerascens*), and San Diego sunflower (*Bahiopsis laciniata* (*Viguiera laciniata*)).

Of these plants, five were observed onsite including Munz's sage, San Diego barrel cactus, San Diego sunflower, Palmer's grappling hook, and ashy spike moss. The potential for all sensitive plant species with potential to occur onsite is discussed in more detail in Attachment E. The five sensitive plants observed during the field surveys are discussed in more detail below. No additional sensitive plants are considered to have high potential to occur (Attachment E).

Munz's Sage

Munz's sage is a perennial shrub that is a member of the Mint Family (Lamiaceae). This fragrant shrub occurs in coastal sage scrub and chaparral habitats primarily in the southwestern portion of San Diego County. Munz's sage has a California Rare Plant Rank (CRPR) of CRPR 2B.2, which means it is fairly endangered in California. Munz's sage is also listed by the County on their rare plant list as a List B species. Onsite Munz's sage occurs in three locations within the center portion of the study parcel (Figure 3). There are approximately 7 individual shrubs onsite.

San Diego Barrel Cactus

San Diego barrel cactus is a succulent, low growing cacti that occurs in openings of Diegan coastal sage scrub and maritime succulent scrub. This species has a CRPR rank of 2B.2 and is also recognized by the County as a List B species on their rare plant list. Surveys documented three separate locations where there are approximately 8 individuals (Figure 3).

San Diego Sunflower

San Diego sunflower is a low growing shrub that occurs in Diegan coastal sage scrub and maritime succulent scrub. This species has a CRPR rank of 4.3 (not very rare in California) and is recognized as a List D species by the County of San Diego. Onsite this species is relatively common component of the Diegan coastal sage scrub habitat and was not mapped at the species-specific level (habitat mapping only).

Palmer's Grappling Hook

Palmer's grappling hook is a small, annual wildflower that primarily occurs in heavy clay soils within a variety of habitats including grasslands, Diegan coastal sage scrub, and a variety of chaparral types. When found in shrubland habitat it will often occupy openings within the shrub canopy. This species has a CRPR rank of 4.2 (not very rare in California) and is recognized as a List D species by the County of San Diego. Onsite this species occurs in one concertation within the southeastern portion of the project site (Figure 3). It should be noted that this species was not observed in 2018 but was observed during an above average rainy season in 2019.

Ashy spike moss

Ashy spike moss is small, prostrate bryophyte that occurs in openings of scrub and chaparral habitats. This species has a CRPR rank of 4.3 (not very rare in California) and is recognized as a List D species by the County of San Diego. Onsite this species occurs in several patches or openings where the soils have not been previously disturbed (Figure 3).

Sensitive Wildlife

The literature search identified 49 sensitive wildlife species that have the potential to occur on or have been observed relatively close to the project site. Sensitive wildlife with potential to occur include: Cooper's hawk (*Accipiter cooperi*), Sharp-shinned hawk (*Accipiter striatus*), Rufous-crowned sparrow (*Aimophila ruficeps canescens*), grasshopper sparrow (*Ammodramus savannarum*), Bell's sage sparrow (*Amphispiza belli belli*), Silvery legless lizard (*Anniella pulchra pulchra*), Pallid bat (*Antrozous pallidus*), Golden eagle (*Aquila chrysaetos*), Great blue heron (*Ardea herodias*), Burrowing owl (*Athene cunicularia hvauaea*), Ringtail cat (*Bassariscus astutus*), Ferruginous hawk (*Buteo regalis*), Coastal cactus wren (*Campylorhynchus brunnicapillus sandiegensis*), Turkey vulture (*Cathartes aura*), Dulzura California pocket mouse (*Chaetodipus californicus femoralis*), Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Rosy boa (*Charina trivirgata roseofusca*), Mexican long-tongued bat (*Choeronycteris mexicana*), Northern harrier (*Circus cyaneus hudsonius*), Orange-throated whiptail (*Cnemidophorus hyperythrus*), coastal whiptail (*Cnemidophorus tigris multiscutatus*), San Diego banded gecko (*Coleonyx variegatus abbottii*), Townsend's big-eared bat (*Corynorhinus townsendii*), Northern red diamond rattlesnake (*Crotalus ruber ruber*), San Diego ringneck snake (*Diadophis punctatus similis*), White-tailed kit (*Elanus caeruleus*), Horned lark (*Eremophila alpestris actis*), Coronado skink (*Eumeces skiltonianus interparietalis*), Greater western mastiff bat (*Eumops perotis californicus*), Quino checkerspot butterfly (*Euphydryas editha quino*), Dun skipper (*Euphys vestris harbisoni*), Prairie falcon (*Falco mexicanus*), Mountain lion (*Felis concolor*), Loggerhead shrike (*Lanius ludovicianus*), California gull (*Larus californicus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), Hermes copper (*Lycaena hermes*), California leaf-nosed bat (*Macrotus californicus*), Small-footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), San Diego desert woodrat (*Neotoma lepida intermedia*), Big free-tailed bat (*Nyctinomops macrotis*), Pocketed free-tailed bat (*Nyctinomops femorosaccus*), Southern mule deer (*Odocoileus hemionus*), Southern grasshopper mouse (*Onychomys torridus ramona*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), California gnatcatcher (*Poliophtila californica californica*), Western spadefoot toad (*Spea (Scaphiopus) hammondii*), and American badger (*Taxidea taxus*).

Of these species three (California gnatcatcher, Coastal cactus wren, and Cooper's hawk) were detected during the 2018 surveys. Each of these species are discussed in more detail below. Furthermore, a habitat assessment for Quino checkerspot butterfly is provided

below as well. Please note that no Quino checkerspot butterflies were observed onsite during focused surveys conducted in 2018 and 2019.

California gnatcatcher (*Polioptila californica californica*)

Status: Federally Threatened, California Species of Concern, County Group 1

The California gnatcatcher is a small blue-gray songbird which measures only 4.5 inches (11 cm) and weighs 0.2 ounces (6 grams). It has dark blue-gray feathers on its back and grayish-white feathers on its underside. The males have a black cap during the summer which is absent during the winter. California gnatcatchers primarily occur within Diegan coastal sage scrub habitat. Onsite one pair was documented during focused USFWS surveys conducted by Andrew Borchert (TE-092162-2) (Figure 3).

Coastal cactus wren (*Campylorhynchus brunnicapillus sandiegensis*)

Status: California Species of Special Concern, County Group 1

The Coastal cactus wren has a very limited range, extending from extreme northwestern Baja California north through the coastal lowlands of San Diego County and into southern Orange County. Coastal cactus wren nest in thickets or stands of cacti including coastal cholla (*Cylindropuntia prolifera*) and prickly pear (*Opuntia littoralis*). Coastal cactus wren was detected foraging in the northwestern portion of the property (Figure 3). Suitable nesting habitat occurs onsite but in 2018 no active nest were observed. The pair observed foraging in 2018 was likely nesting off-site northwest of the property.

Cooper's Hawk (*Accipiter cooperi*)

Status: California Species of Concern when nesting, County Group 1

The Cooper's hawk when nesting is listed as a California Special Concern species by California Department of Fish and Wildlife. This species is a year-long resident in southern California. It is most likely to occur in areas with dense stands of live oak, riparian, deciduous, or other forest habitats near water. However, it is also known to nest in urban areas with large trees. Surveys in 2018 observed this species flying overhead. No Cooper's hawk individuals were observed foraging or nesting onsite. However, suitable foraging habitat does occur onsite, but the project site lacks suitable nesting habitat.

Quino checkerspot butterfly (*Euphydryas editha quino*)

Status: Federally Endangered, County Group 1

Suitable Quino habitat includes sparsely vegetated openings embedded in a variety of vegetation types, including coastal sage scrub, flat-topped buckwheat scrub, maritime succulent scrub, chaparral, coastal sage scrub/chaparral ecotones, grasslands, vernal pools, juniper woodlands, and agricultural lands that are no longer cultivated and are recovering

their habitat value. Quino show a preference for relatively open areas that may include features such as cryptogamic crusts, with few vascular plants, surrounded by low-growing vegetation. Where their primary host plant dwarf plantain is present, optimum vegetation structure for Quino consists of patchy shrub landscapes with openings of several meters between large plants. Additional secondary host plants include woolly plantain, white snapdragon, Chinese houses, thread-leaved bird's beak or purple owl's clover. Quino males, and to a lesser extent female, are frequently observed on hilltops and ridgelines, even in the absence of nearby larval host plants where they bask and seek mates. As a result, hilltops and ridgelines near host plants are believed to be crucial elements of population survival (USFWS 2003).

The entire site was considered to be potential Quino checkerspot butterfly habitat. Thus, protocol surveys were conducted in 2018 and again in 2019. Based on the author's own observations, personal communication with other USFWS permitted Quino biologist and review of the USFWS GIS database it was clear that the 2019 adult Quino flight season was a banner year. Since Quino were not observed during focused surveys in 2019 it is unlikely that Quino occurs on-site and is unlikely that it will occur on-site in the future.

Raptor Nesting & Foraging

Raptors are large predatory or scavenger birds that typically require tall trees for perching and nesting associated with adjacent open grasslands to forage. Due to declining habitat and the associated declining numbers of these species on the whole, many raptor species have been designated as California Species of Special Concern by the CDFW. These species are protected, especially during their critical nesting and wintering stages. Raptors are protected under the CDFW California Raptor Protection Act (Title 14, Section 670). No suitable nesting trees or nests were observed onsite during the 2018 surveys. However, the project site is considered to have suitable raptor foraging habitat. The 9.92 acres of Diegan coastal sage scrub habitat provides significant foraging habitat for raptors that utilize habitats both on-site and off-site.

Jurisdictional Wetlands and Waterways

As detailed in the methods section, the general site survey conducted on February 2nd, 2018, included mapping the size, location, and general quality of all habitat types onsite. This included carefully walking the entire site and determining if any wetlands or drainages (waterways) occurred onsite. The site survey determined that no jurisdictional (by the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB)) wetlands or waterways occur within the study area. Furthermore the study area does not contain any wetland or waters that are regulated by the County's Resource Protection Ordinance (RPO). The property is comprised entirely of upland habitat.

Other Unique Features/Resources

This section provides a brief description of unique features/resources including:

- Wildlife Corridors, Linkages & Large Mammal Use
- Topography/Connectivity
- Other biological functions such as foraging, hill-topping, roosting, rock outcroppings
- Sensitive soils

Wildlife Corridors, Linkages and Large Mammal Use of the Site

As can be seen in Figure 4, dense residential development occurs to the south (just beyond study area), east, and west of the project site. Sparse residential housing occurs north of the site. Open space or natural habitats also occur northwest, northeast, and immediately south of the study area. The habitat patch northwest of the study area is approximately 15 acres in size and is comprised primarily of Diegan coastal sage scrub. This habitat patch provides a direct connection for wildlife movement on-site to off-site habitat. Wildlife including large mammals could potentially move from on-site to the northwest through this connection to access additional habitat to the east (Dictionary Hill Preserve) (Figure 4).

However, sparse residential buildings occur between the northwestern open space and the larger Dictionary Hill Preserve that is northeast of the study area (Figure 4). Habitat within the Dictionary Hill Preserve is dominated by Diegan coastal sage scrub plant species. South of the study area a small patch of habitat is associated with an urban canyon that lacks a direct connection to the open space areas north of the project site. The study area likely provides cover and refugia for wildlife species attempting to move between and among the isolated patches of habitat that occur within the general project vicinity. However, the site likely provides limited cover and refugia for large mammal species due to the residential buildings that occur surrounding the site. Furthermore, no important regional wildlife corridors or linkages occur on-site.

Wildlife Nursery Sites

Wildlife nursery sites are locations where wildlife concentrate for hatching and/or raising young, such as rookeries, spawning areas and bat colonies. The project site does not contain any wildlife nursery sites.

Topography/Connectivity

As detailed in the project setting section, the topography of the site is comprised of moderately sloped land from approximately 490 feet AMSL to 670 feet AMSL. Other than the fact the site contains 9.92 acres of native Diegan coastal sage scrub, the project site does not contain any other unique topographic or unique connectivity areas.

Other biological functions such as foraging, hill-topping, roosting, rock outcroppings
 No additional unique or rare biological features such as significant foraging areas, hill-topping, roosting sites or significant rock outcrops occur on-site.

Sensitive Soils

The project site does not contain any soils that are considered sensitive by the BMO.

Significance of Project Impacts and Proposed Mitigation

The project site is located within the County of San Diego's South County MSCP. The impact analysis and associated mitigation requirements are consistent with the County of San Diego's Biological Guidelines and the Biological Mitigation Ordinance (BMO).

Impacts to Vegetation Communities

Since the project site supports a number of sensitive species, including a pair of nesting California gnatcatchers, it was determined to be a biological resources core area (BRCA). Project impacts to vegetation communities are shown on Figure 5 and detailed in Table 2. The project will impact approximately 4.07 acres of disturbed and undisturbed Diegan coastal sage scrub habitat. The mitigation ratio as determined by Attachment M of the County's BMO details that the project must meet a 1.5:1 mitigation ratio for Diegan coastal sage scrub habitat when the impacts and mitigation are both within a BRCA. Mitigation for DCSS will be achieved by conserving 6.11 acres of DCSS habitat by the on-site conservation of 5.73 acres and off-site purchase of 0.38-acre at a County approved mitigation bank.

Table 2. Habitat Impacts and Mitigation

Habitat/Vegetation Community	Existing (acres)	Onsite Impacts (acres)	Required Mitigation Ratio	Mitigation Required (acres)	Onsite Mitigation (acres)	Off-site Mitigation
Diegan Coastal Sage Scrub (Including Disturbed Diegan Coastal Sage Scrub)	9.92	4.07	1.5:1	6.11	5.85ac* within on-site open space. 5.73-ac counts towards mitigation	0.38ac
* = excludes 0.12-acre of DCSS habitat that occurs within an existing SDG&E easement						

Impacts to Special Status Species

Based upon the County's Guidelines for Determining Significance for Biological Resources (2010), a significant impact to special status species would occur if:

Federally or State Endangered or Threatened Species

California gnatcatcher a federally threatened species was identified on the project site in 2018. The project will impact 4.07 acres of California gnatcatcher habitat. The project will mitigate impacts of 4.06 acres through the conservation of 5.73 acres onsite. In addition, the location of the 2018 nest and nest territory will be conserved in the onsite biological open space easement. No other federal or state endangered or threatened species were observed onsite in 2018 or 2019.

County List A or B Plant Species/County Group I Animal Species/State Species of Concern

Surveys did not detect any County list A plant species. Two County List B plant species were observed (Munz's sage and San Diego barrel cactus) and three Group I animal species (California gnatcatcher, coastal cactus wren, and Cooper's Hawk). Impacts will occur to two patches or six individual San Diego barrel cacti. No impacts will occur to Munz's sage. The project will impact 4.07 acres of suitable habitat for both California gnatcatcher and coastal cactus wren. The project will also impact 4.07 acres of suitable foraging habitat for Cooper's Hawk and other raptor species.

Mitigation for impacts to San Diego barrel cactus will consist of conserving two barrel cacti on-site and translocating six individuals into the proposed on-site biological open space. This represents a 1.33:1 mitigation ratio for San Diego barrel cactus. Translocation of San Diego barrel cactus individuals will be done by a qualified restoration contractor and monitored by a County approved biologist. Mitigation for impacts to suitable California gnatcatcher, coastal cactus wren habitat and Cooper's hawk foraging habitat will be accomplished through the on-site conservation of 5.73 acres of Diegan coastal sage scrub habitat.

County List C or D Plant Species/County Group II Animal Species

Three County D plant species (Palmer's grappling hook, ashy spike moss, and San Diego sunflower) were detected onsite, and no County Group II animal species were observed. The project will entirely impact the only Palmer's grappling population on-site (Figure 5). Ashy spike moss will be impacted in four locations by the proposed development (Figure 5). Impacts to San Diego sunflower will also occur as this species is a codominant within both the disturbed and undisturbed Diegan coastal sage scrub habitat on-site. Impacts to these three species will not threaten the regional long-term survival of either species because although each of these species have limited range in California, they are somewhat common throughout San Diego County. Furthermore, the proposed biological open space easement will conserve occupied or suitable habitat for these species including four additional patches of ashy spike moss and 5.73 acres of occupied San Diego sunflower habitat (Figure 5).

Arroyo Toad Aestivation, Breeding or Foraging Habitat

The project site does not support appropriate aestivation, breeding or foraging habitat for the arroyo toad. The arroyo toad prefers sandy or cobbly washes with swift currents and associated upland and riparian habitat. The project site does not support this type of habitat. Therefore, no impact is identified for this subthreshold.

Golden Eagle Habitat

No golden eagles have been recorded in the project area and no nesting sites are known within 4000 feet of the project site; therefore, the proposed project is not expected to result in impacts to habitat actively utilized by golden eagles.

Raptor Foraging Habitat

As detailed previously, 4.07 acres of suitable raptor foraging habitat will be impacted by the proposed project. These impacts will be mitigated by the conservation of 6.11 acres of Diegan coastal sage scrub.

Core Wildlife Area

The project site has been deemed a BRCA because it supports a number of special status species including occupied coastal California gnatcatcher and coastal cactus wren habitat. Project impacts (4.07 acres) to core wildlife habitat will be mitigated at a 1.5:1 ratio through the conservation of 6.11 acres of habitat.

Indirect Impacts

As detailed previously the project site is surrounded on three sides by existing residential development. The proposed project will increase the potential indirect impacts to conserved habitat within with proposed biological conservation easement. However, a limited building zone (LBZ) buffers the conserved habitat from proposed residential improvements.

Burrowing Owl Habitat

The project will not impact burrowing owl or burrowing owl habitat. Burrowing owl were not observed onsite and due to the lack of suitable burrows and burrowing owl signs they are not anticipated to occupy the property in the future.

Coastal Cactus Wren Habitat

The project will impact 4.07 acres coastal cactus wren habitat. Cactus wren were observed in the northwestern portion of the project site. Suitable nesting habitat occurs within the northwestern portion of the project site, but no active nests were observed in 2018. It is likely based on observed behavior that the coastal cactus wren observed in 2018 were nesting offsite northwest of the project site. Impacts to 4.07 acres of coastal cactus wren habitat will be mitigated by the onsite conservation of 5.73 acres of Diegan coastal sage scrub habitat.

Hermes Copper Habitat

The project will not impact Hermes copper butterfly or Hermes copper butterfly habitat. Hermes copper was not observed on site and it is not anticipated to occupy the property in the future. The study area does not contain spiny redberry the larval host plant for the Hermes copper butterfly.

Impacts to Federal Wetlands

The project site does not contain any federally regulated wetlands. No impacts will occur to federally regulated wetlands.

Impacts Wildlife Movement and Nursery Sites

The project site likely provides cover and refugia for wildlife dispersing across the isolated and patchy open space areas that occur within the general project vicinity. However, due to the fairly disturbed nature of more than 50% of the habitat onsite and the projects proximity to the adjacent residential areas no important local or regional wildlife corridor were identified. Therefore, impacts to wildlife corridors would be less than significant. The project site does not contain any significant wildlife movement corridors or wildlife nursery sites.

Impacts to Local Plans, Ordinances and Adopted Plans

Based upon the County Guidelines for Determining Significance for Biological Resources (County 2010a), a significant impact related to local policies, ordinances and adopted plans would occur if the project would:

- A. For lands outside of the MSCP, the project would impact coastal sage scrub (CSS) vegetation in excess of the County's 5% habitat loss threshold as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines. – The project is within the approved SC MSCP and is not subject to the 5% habitat loss threshold.
- B. The project would preclude or prevent the preparation of the subregional Natural Communities Conservation Planning Process (NCCP). – The project will mitigate habitat and sensitive species impact per the BMO. Implementation of the project would not result in a significant impact to the preparation of the subregional NCCP.
- C. The project will impact any amount of wetlands or sensitive habitat lands as outlined in the Resource Protection Ordinance (RPO). – The project site does not contain any wetlands or sensitive habitat as outline in the RPO. Implementation of the project would not result in significant impacts to wetland or sensitive habitats as outlined in the RPO.
- D. The project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Communities Conservation Planning Process (NCCP) Guidelines. – The project is consistent with Section 4.3 of the

- NCCP Guidelines. Implementation of the project would not result in a significant impact to Section 4.3 of the NCCP guidelines.
- E. The project does not conform to the goals and requirements as outlined in any applicable Habitat Conservation Plan (HCP), Habitat Management Plan (HMP), Special Area Management Plan (SAMP), Watershed Plan, or similar regional planning effort. – The project as proposed is consistent with the SC MSCP. Implementation of the project would not result in a significant impact to any HCPs, HMPs, SAMPs, Watershed Plans or any other regional planning effort.
 - F. For lands within the Multiple Species Conservation Program (MSCP), the project would not minimize impacts to Biological Resource Core Areas (BRCAs), as defined in the Biological Mitigation Ordinance (BMO). – The project site is located in the South County MSCP and the on-site habitat is considered a BRCA. Project impacts are mitigated per the BMO requirements for BRCA lands. Implementation of the project would not result in a significant impact to lands within the MSCP.
 - G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines. – The project as proposed will not impact any areas of high habitat values as defined by the Southern California Coastal Sage Scrub NCCP Guidelines. Implementation of the project would not result in a significant impact to connectivity areas within the Southern California Coastal Sage Scrub NCCP Guidelines.
 - H. The project does not maintain existing movement corridors and/or habitat linkages as defined by the Biological Mitigation Ordinance (BMO). –The project site is located in the South County MSCP and is subject to BMO requirements. Implementation including project mitigation is consistent with the County’s SC MSCP BMO. The project would not result in a significant impact to lands within the MSCP including any existing movement corridors and/or habitat linkages.
 - I. The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics. – No narrow endemic species were observed on-site. Implementation of the project would not result in a significant impact to narrow endemic species.
 - J. The project would reduce the likelihood of survival and recovery of listed species in the wild. – The project does not contain any listed species and will not result in a significant impact to listed species.
 - K. The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (Migratory Bird Treaty Act). – The proposed project will impact 4.07 acres of native habitat. No sensitive bird species will be directly impacted by the project, although MBTA bird species have the potential to nest on-site. To avoid the direct loss of nest(s) protected under the MBTA a pre-construction nesting survey will be required. If project brushing, clearing, grubbing, grading, or construction activities are proposed within 500 feet of nesting raptor habitat and/or 300 feet of migratory bird nesting habitat during the migratory bird

breeding season (February 1 through August 31), a qualified County-approved biologist shall conduct a pre-construction survey no more than three days prior to the proposed activities to determine the presence/absence of nesting raptors and/or other migratory birds to ensure that active nests are not impacted. If active nest(s), are detected, no construction activities should occur until the young have fledged and are no longer returning to the nest(s), as determined by the project biologist. If no active nests are present, construction activities may commence following concurrence by the USFWS and CDFW that the project will not directly or indirectly impact nesting migratory birds and/or raptors.

- L. The project would result in the take of eagles, eagle eggs or any part of an eagle (Bald and Golden Eagle Protection Act) (BGEPA). – Due to the isolated nature of the site from large open space areas, its proximity to residential areas and lack of nesting habitat it is unlikely that any eagles utilize the project site. The project site does not contain suitable breeding or foraging habitat for eagles. As proposed the project would not result in a significant impact to eagles protected under the BGEPA.

Cumulative Impacts

Due to relative size of the project site and the study areas isolation from other large habitat patches, the loss of 4.07 acres of Diegan coastal sage scrub habitat is not anticipated to result in a significant cumulative impact.

MITIGATION

Impacts to 4.07 acres of Diegan coastal sage scrub require mitigation in order to comply with the County's BMO. Therefore, 5.73 acres of DCSS will be conserved onsite in a biological open space easement and 0.38-acre will be conserved in a County approved mitigation bank. In order to help conserve the open space on-site additional protection measures have been incorporated into the project design and these include a limited building zone, perimeter fencing, and open space signage (Figure 6). The project also proposes to salvage and translocate six San Diego barrel cactus. The salvage and reestablishment of these cacti is fully detailed in a site-specific revegetation plan (Attachment F).

Diegan coastal sage scrub habitat could provide nesting habitat for bird species such as the California gnatcatcher, coastal cactus wren, and other birds protected under the MBTA and FGC. This represents a potentially significant impact. As a mitigation measure for this potential impact, if any construction work is proposed to occur during the County of San Diego bird breeding season (February 1– August 31), a qualified County-approved biologist shall conduct a pre-construction survey no more than three days prior to the proposed activities to determine the presence/absence of nesting raptors and/or other migratory birds to ensure that active nests are not impacted. If active nest(s), are detected,

no construction activities should occur until the young have fledged and are no longer returning to the nest(s), as determined by the project biologist. If no active nests are present, construction activities may commence following concurrence by the USFWS and CDFW that the project will not directly or indirectly impact nesting migratory birds and/or raptors.

Siltation and erosion control BMPs will be implemented during construction, including boundary silt fencing, gravel bags, fiber rolls, weed-free straw wattles and mulch, and slope stabilization.

The limits of project impacts (including construction staging areas and access routes) will be clearly delineated with temporary construction fencing, stakes, flags, or markers that will be installed in a manner that does not impact habitats to be avoided and such that they are clearly visible to personnel on foot and operating heavy equipment. This delineation will be conducted under the supervision of the County-approved biologist prior to commencement of construction activities and will remain in place during all construction activities. All temporary fencing will be shown on grading plans and/or associated construction documents. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the County. Temporary construction fencing, and markers will be maintained in good repair until the completion of project construction and removed upon project completion.

The landscape plan will stipulate that project landscaping will not include exotic plant species listed on the California Invasive Plant Council's (Cal-IPC) "Invasive Plant Inventory" list.

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If you have any question regarding this draft report, please feel free to contact me at (760) 492-3342 or at korey@klutzbio.net

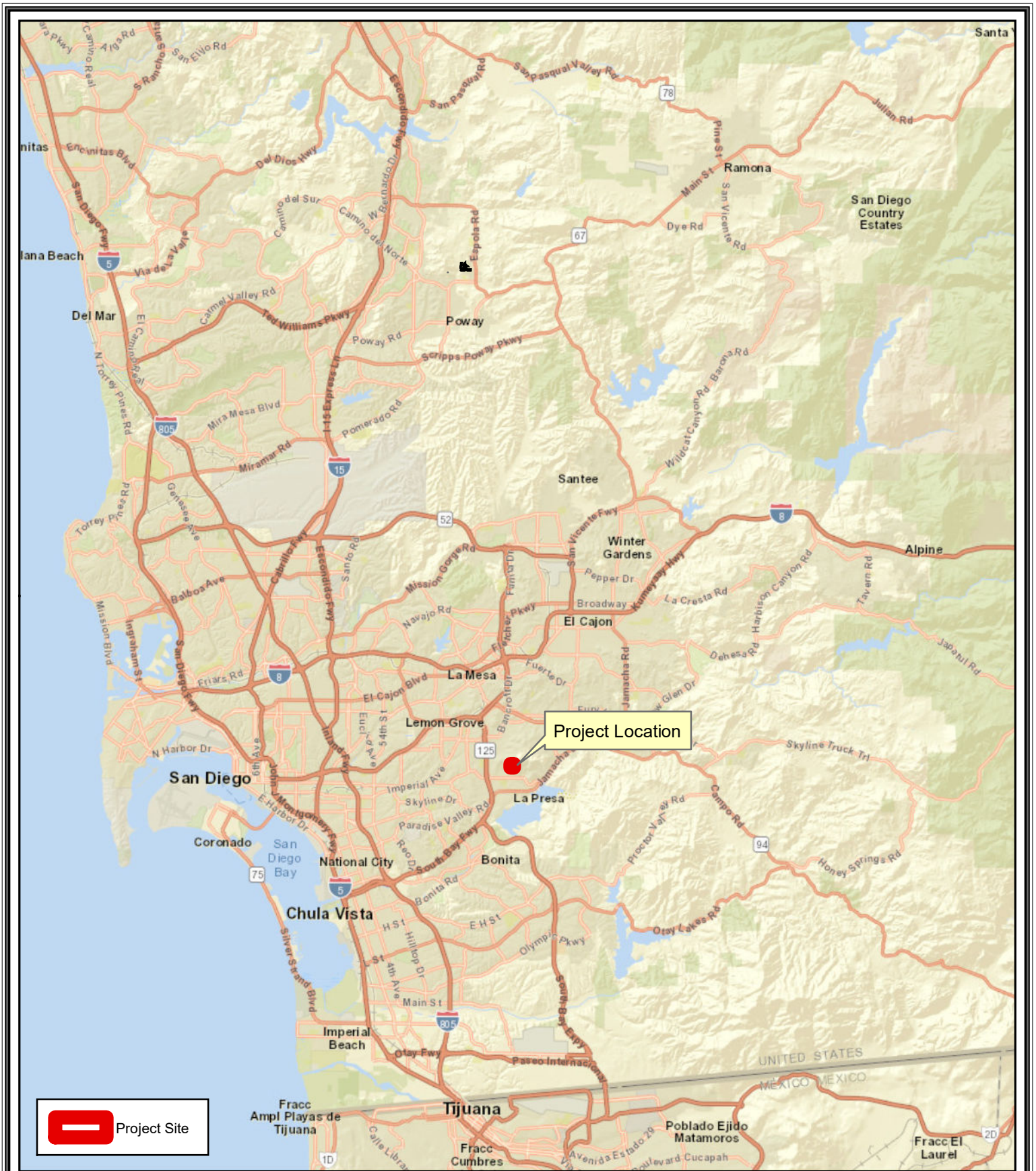
Prepared by:



Korey Klutz
County Approved Biologist

Attachments:

Attachment A 2019 Focused USFWS Quino checkerspot butterfly survey report
Attachment B Focused USFWS California gnatcatcher survey report
Attachment C Plant List
Attachment D Wildlife List
Attachment E Sensitive Species with Potential to Occur
Attachment F San Diego Barrel Cactus Translocation



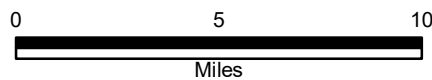
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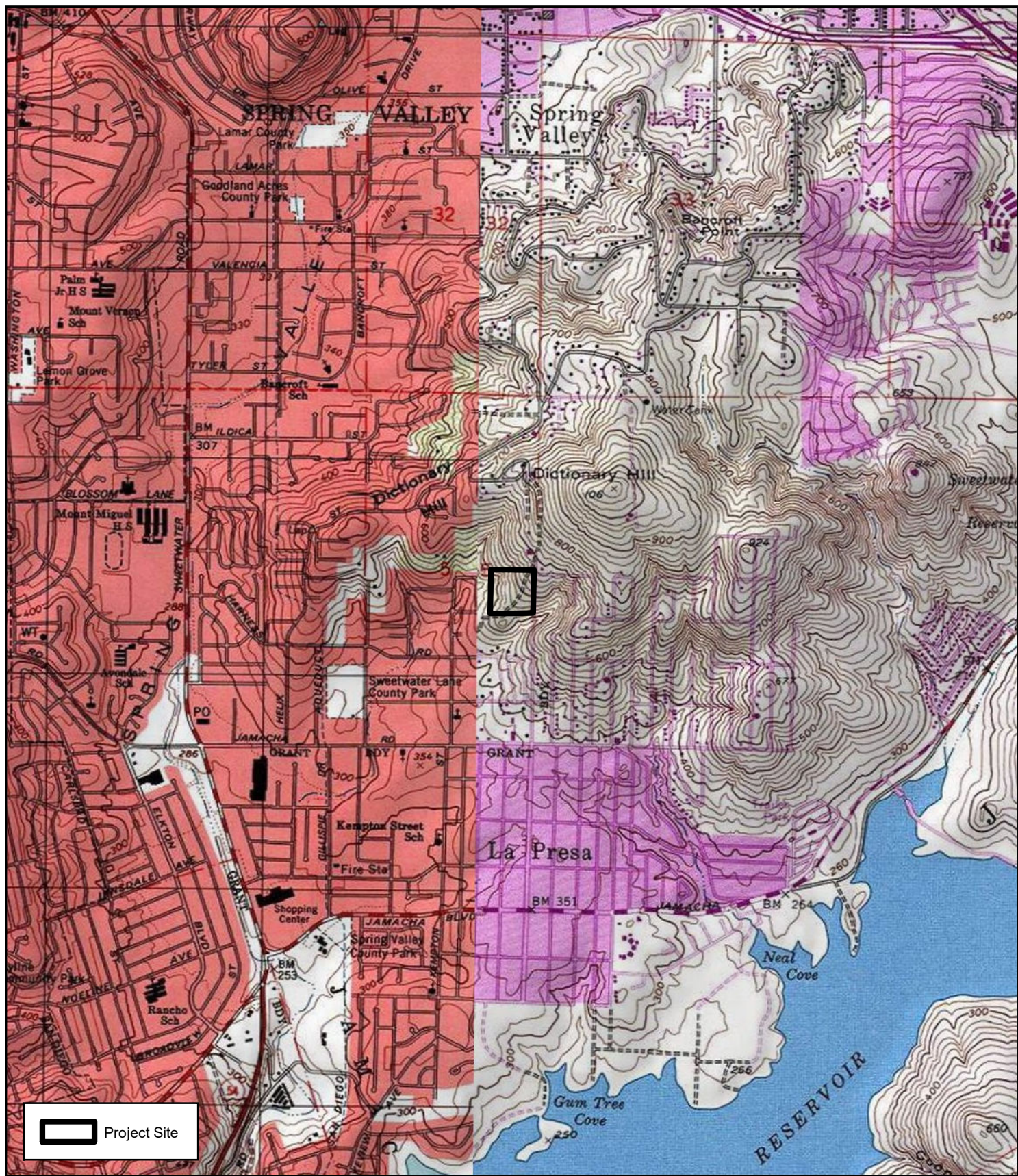
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**Figure 1
Regional Location**



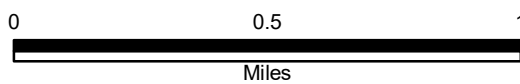
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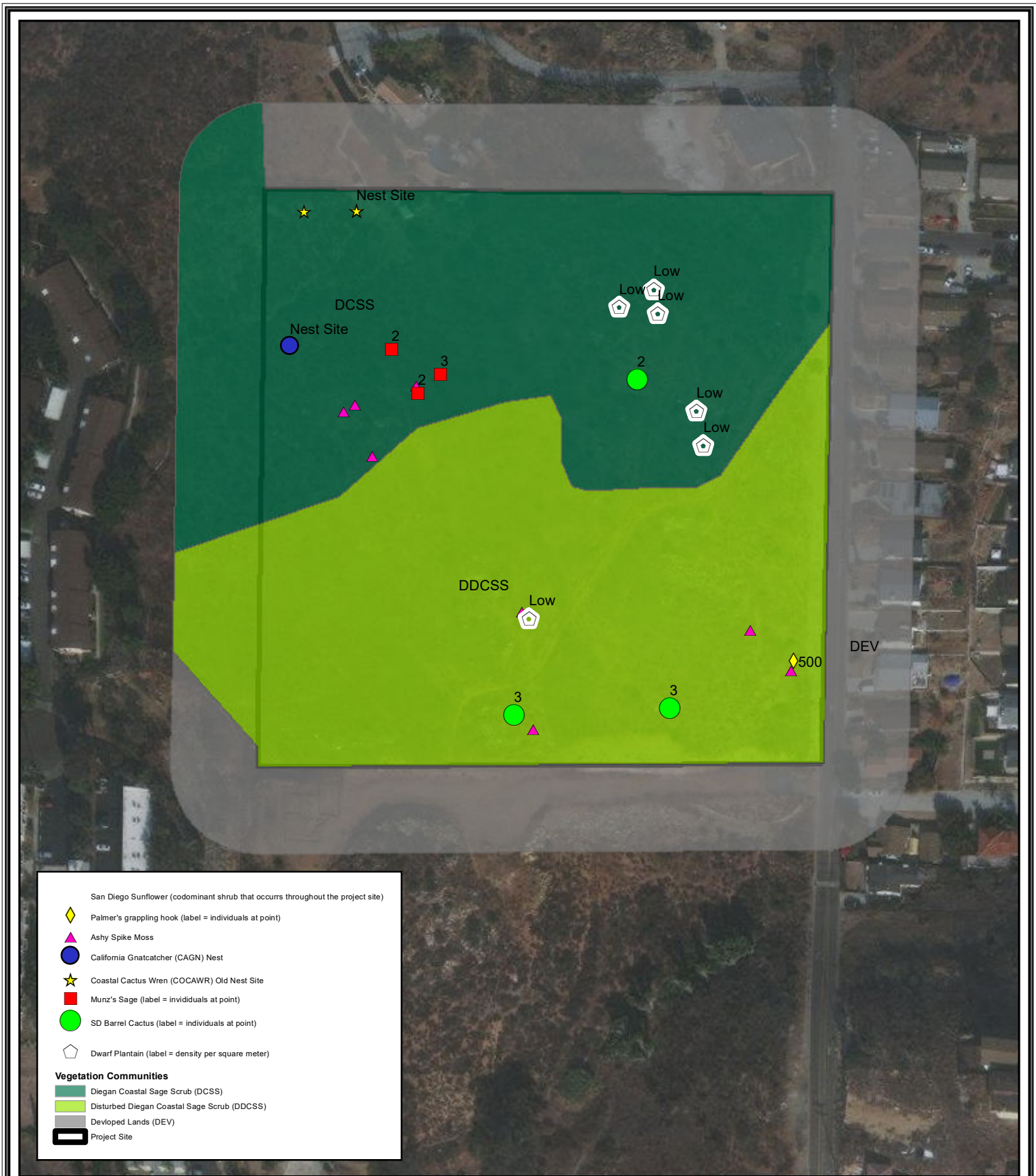
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**Figure 2
Project Location**



San Diego Sunflower (codominant shrub that occurs throughout the project site)

Palmer's grappling hook (label = individuals at point)

Ashy Spike Moss

California Gnatcatcher (CAGN) Nest

Coastal Cactus Wren (COCAWR) Old Nest Site

Munz's Sage (label = individuals at point)

SD Barrel Cactus (label = individuals at point)

Dwarf Plantain (label = density per square meter)

Vegetation Communities

- Diegan Coastal Sage Scrub (DCSS)
- Disturbed Diegan Coastal Sage Scrub (DDCSS)
- Developed Lands (DEV)
- Project Site

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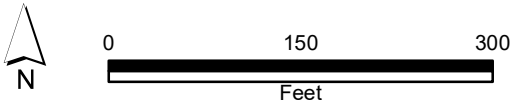
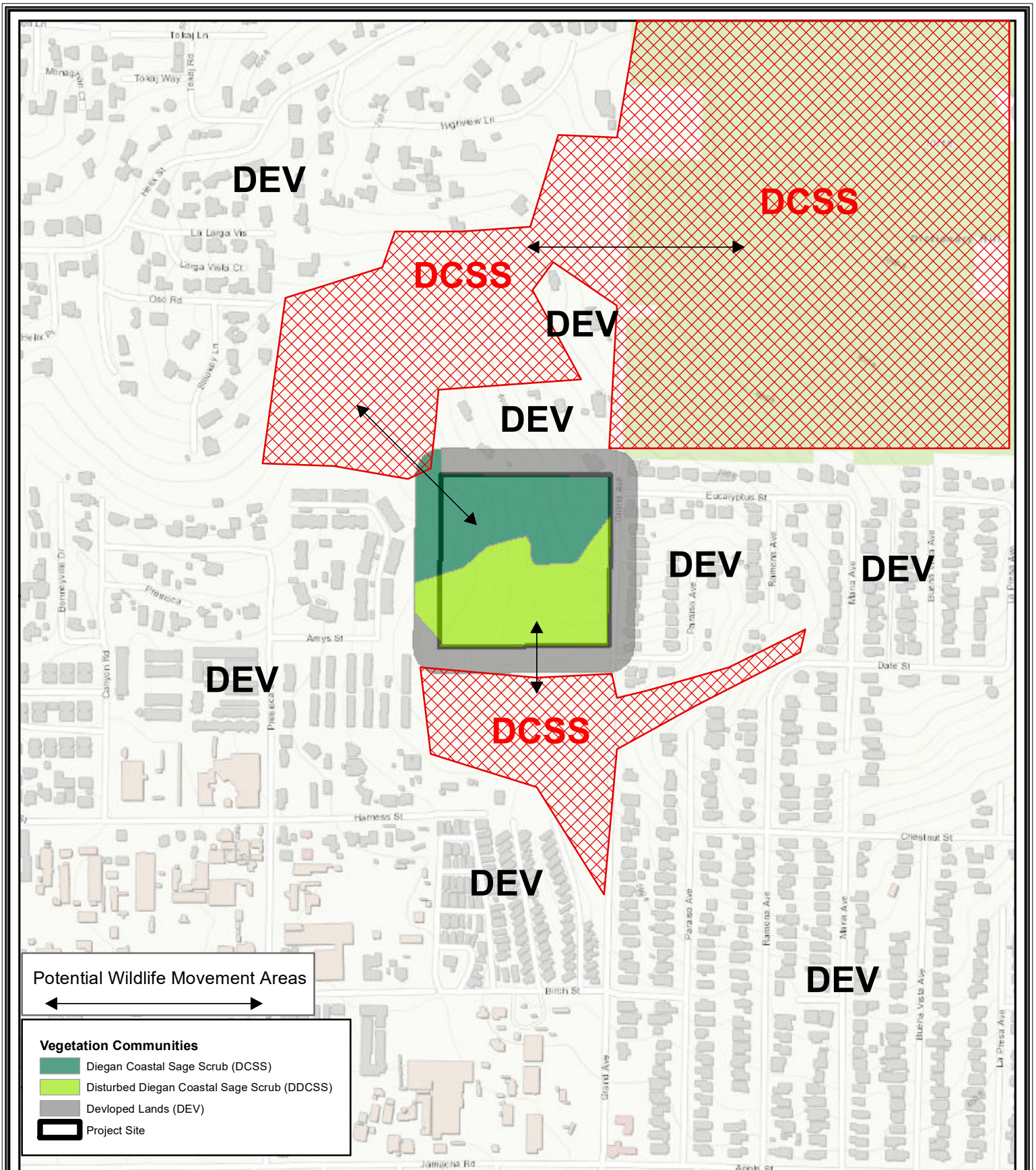


Figure 3
Vegetation Map & Sensitive Species



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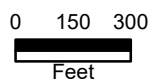
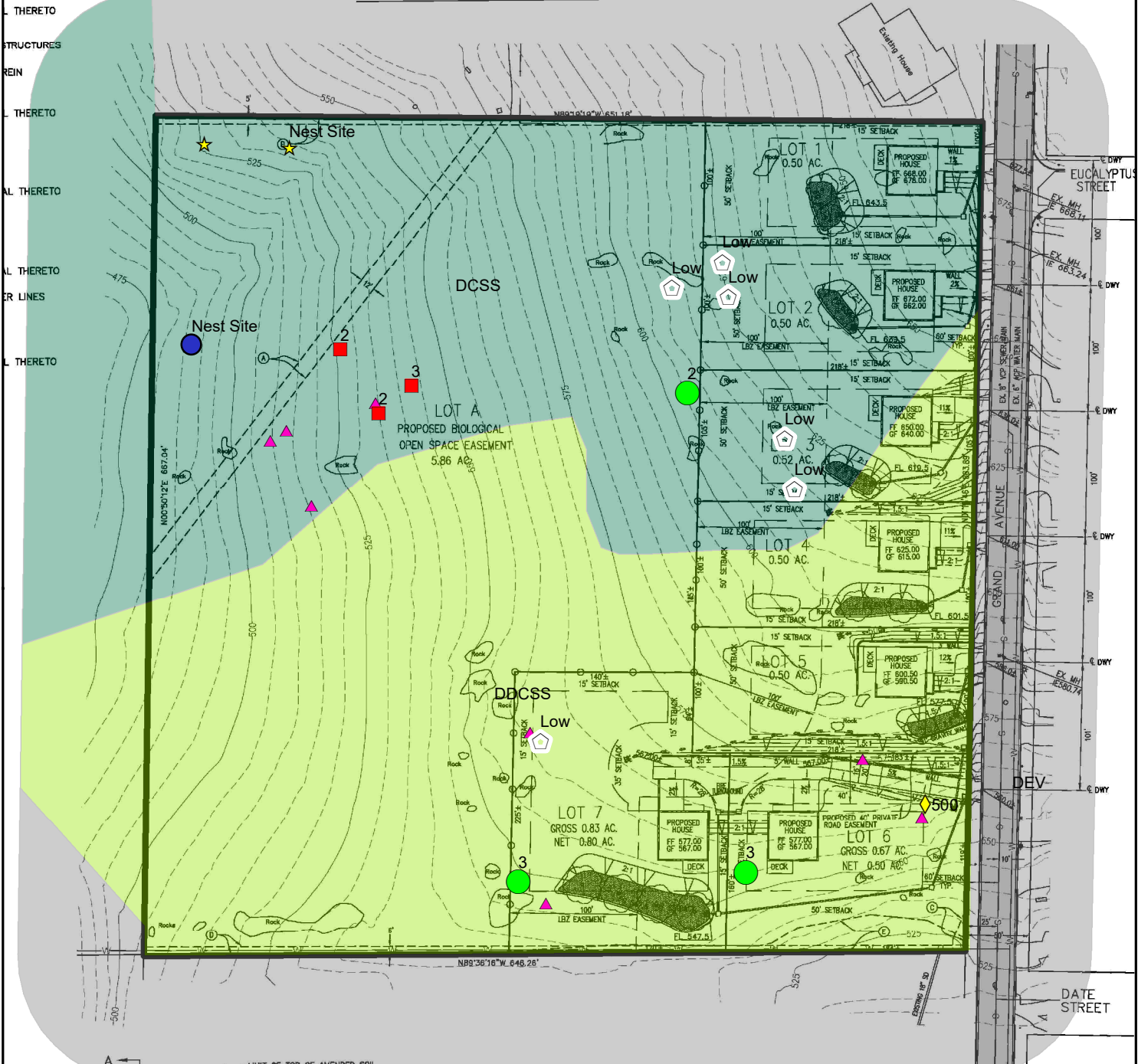


Figure 4
Biological Resources Onsite & Open Space Habitat Located Outside the Study Area

PRELIMINARY GRADING PLAN



<ul style="list-style-type: none"> San Diego Sunflower (codominant shrub that occurs throughout the project site) Palmer's grappling hook (label = individuals at point) Ashy Spike Moss California Gnatcatcher (CAGN) Nest Coastal Cactus Wren (COCAWR) Old Nest Site 	<ul style="list-style-type: none"> Munz's Sage (label = individuals at point) SD Barrel Cactus (label = individuals at point) Dwarf Plantain (label = density per square meter) 	<p>Vegetation Communities</p> <ul style="list-style-type: none"> Diegan Coastal Sage Scrub (DCSS) Disturbed Diegan Coastal Sage Scrub (DDCSS) Developed Lands (DEV) Project Site 	
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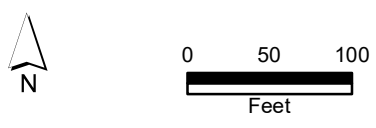










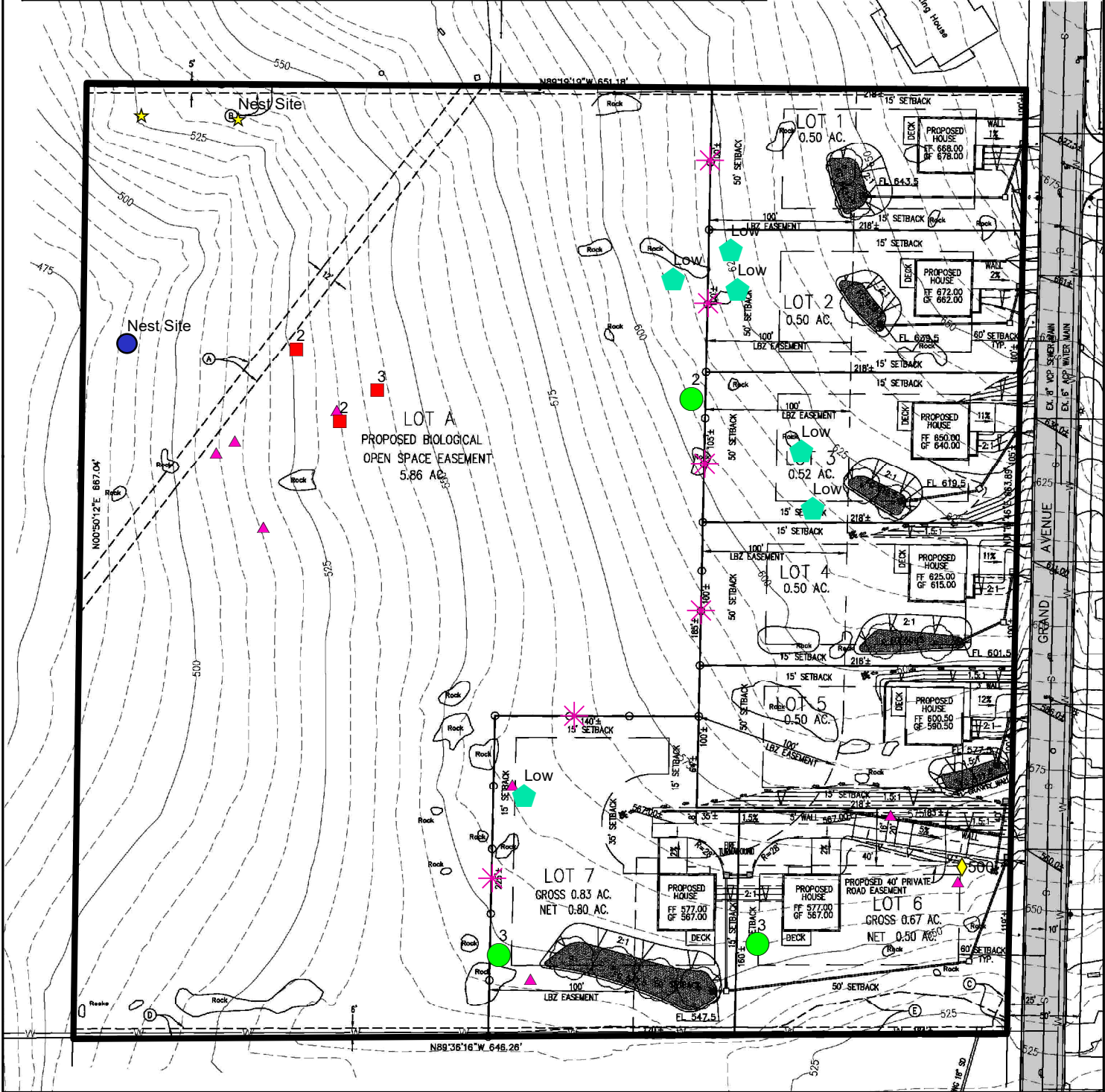


Figure 5
Project Impacts

PLAN

 open space sign	 Coastal Cactus Wren (COCAWR)
 San Diego Sunflower (codominant shrub that occurs throughout the project site)	 Munz's Sage (label = individuals at point)
 Palmer's grappling hook (label = individuals at point)	 SD Barrel Cactus (label = individuals at point)
 Ashy Spike Moss	 Dwarf Plantain (label = density per square meter)
 California Gnatcatcher (CAGN) Nest	 Project Site



Spring Valley Housing

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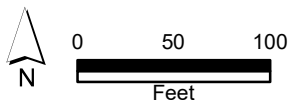


Figure 6
Open Space Map

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C O N S U L T I N G



June 20, 2019

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Suite 250
Carlsbad, CA 92008

RE: Spring Valley Housing Project 2019 USFWS Focused Presence/Absence Surveys for Quino Checkerspot Butterfly (*Euphydryas editha quino*)

The purpose of this letter report is to document the results of focused presence/absence surveys conducted for the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) on Assessor Parcel Number (APN) APN: 578-161-02 located in Spring Valley and unincorporated community of San Diego County (County). Focused surveys were conducted by Klutz Biological Consulting (KBC) under Threatened and Endangered Species Permits TE 036065-2.

The proposed project is a residential subdivision of one legal lot into eight (8) legal lots including seven that will contain new single-family detached residences and an eighth lot that will be comprised of biological open space. Access to the proposed project will be from Grand Avenue. Habitats occurring within the study area (project site and a 100-foot buffer) include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub and developed land. Seven sensitive species were observed during surveys in 2018 and 2019 including Munz's sage, San Diego barrel cactus, Palmer's grappling hook, ashy spike moss, San Diego sunflower, California gnatcatcher, coastal cactus wren and Cooper's hawk.

PROJECT LOCATION

The Spring Valley Housing Project (project) is located in the southern portion of the community of Spring Valley, San Diego County, California (Figure 1). The map location of the project site is in the northeastern quarter of Section 5, Township 17 South, Range of the United States Geologic Service (USGS) 7.5' Jamul Mountains, California Quadrangle (UTM: 11-S: 500,300mE; 3,620,200mN) (Figure 2). The property lies southwest of the intersection of Grand Avenue and Eucalyptus Street. Grand Avenue is adjacent to the eastern boundary of the property. The property is located within the boundaries of the South County Segment of the San Diego County's Multiple Species Conservation Program (MSCP) Plan.

PROJECT DESCRIPTION

The proposed project is a residential subdivision that proposes to split APN 578-161-02 (9.91 acres) into eight (8) legal lots that each will contain seven single family detached residences and one open space lot. Access to the proposed project will be from Grand Avenue.

METHODS

Focused presence/absence surveys for the Quino were conducted in accordance with the United States Fish and Wildlife Service (USFWS) Quino Checkerspot Butterfly Survey Guidelines (USFWS 2014). The survey protocol calls for weekly surveys to be conducted between the third week of February through the second Saturday in May. However, surveys were not initiated until the fourth week of February due to inclement weather. Eric Porter of the USFWS approved delaying surveys on February 20, 2019, and the first protocol survey was conducted the following week on February 26, 2019. The first observation of adult Quino in San Diego County was reported on February 24, 2019, near Otay Lakes (Quino Biologists United 2019). A total of 10 site visits were conducted between February 26 and May 5th, 2019, by KBC biologists (Attachment A) (Table 1). No surveys were conducted during the second week in May because of inclement weather. Susan Wynn of the USFWS approved termination of the surveys based on the forecasted weather and lack of recent QCB observations at reference sites within the area. The last publicly reported observation of QCB was on May 1, 2019 near Potrero which is located over 18 miles southeast of the project near the U.S./Mexico border (Quino Biologist United 2019).

Table 1. 2019 Quino Checkerspot Butterfly Surveys

QCB #1	Weather conditions were not within protocol conditions the entire week.	
QCB #2	L. Willrick (TE-61175B-0)	2/25/2019
QCB #3	K. Klutz (TE-036065-2)	3/4/2019
QCB #4	L. Willrick (TE 61175B-0)	3/13/2019
QCB #5	K. Klutz (TE-036065-2)	3/23/2019
QCB #6	K. Klutz (TE-036065-2)	3/30/2019
QCB #7	C. Brungraber (TE-14231A-3)	5/7/2019
QCB #8	C. Brungraber (TE-14231A-3)	5/12/2019
QCB #9	C. Brungraber (TE-14231A-3)	5/19/2019
QCB #10	C. Brungraber (TE-14231A-3)	5/26/2019
QCB #11	C. Brungraber (TE-14231A-3)	5/5/2019
QCB #12	Adult flight season ended. Permission was received from the USFWS to end surveys during Week #11.	

Larval host plants within the Quino survey area were mapped when encountered during each survey (Figure 3). Biologists walked meandering transects within the survey area recording the location, size, and conditions of host plants. Host plants were mapped with the aid of hand-held global positioning system (GPS) units. Per the USFWS protocol, patches of host plants were categorized as low density (less than 10 plants per square meter), medium density (10 to 99 plants per square meter), high density (100 to 1,000 plants per square meter), or very high density (greater than 1,000 plants per square meter) (USFWS 2014). Dates, times, and

weather conditions at the beginning and end of each of the 10 surveys are presented in Attachment A (Survey Summary).

Identification of butterflies was based on personal knowledge, museum specimens, the San Diego Natural History Museum website, and field guides by Shiraiwa (2009) and Glassberg (2001). Other nomenclature for this report is taken from Holland (1986) and Oberbauer (2008) for vegetation communities, and Baldwin et al. (2012) and the Jepson eFlora (Jepson Flora Project 2019) for plants.

RESULTS

Focused surveys did not detect Quino within the Quino survey area. A total of 21 species of butterflies were recorded during the surveys. The most common butterflies observed were Pacific Sara orangetip (*Anthocharis sara sara*), Behr's metal mark (*Apodemia mormo virgulti*), and painted lady (*Vanessa cardui*). Of note, surveys detected an unusually high amount of painted lady butterflies relative to past Quino survey years (2001-2018). All butterflies observed during the survey effort are documented in Attachment A.

Quino host plants detected included Purple owl's clover (*Castilleja exserta*) and dwarf plantain (*Plantago erecta*). Host plant patches were generally isolated from one another and consisted of only low-density patches. No medium or high-density patches were detected. Nine potential nectar resources were noted within the QCB survey area: San Diego sunflower (*Bahiopsis laciniata*), blue dicks (*Dichelostemma capitatum*), onion (*Allium* sp.), fiddleneck (*Amsinckia intermedia*; *A. menziesii*), goldenstar (*Bloomeria crocea*), popcorn flower (*Cryptantha* sp.; *Plagiobothrys* sp.), California buckwheat (*Eriogonum fasciculatum*), goldfields (*Lasthenia* sp.). It should also be noted that weather conditions in 2019 were ideal for both host plants and nectar plants. Through the entire survey effort (February-May), annual wildflowers flourished and there was little die-off observed.

QUINO 2019 ADULT FLIGHT SEASON DISCUSSION

The 2019 Quino adult flight season was above average with regards to survey detections throughout San Diego County (Figure 4). Adult Quino were first reported on February 25th, 2019 and last reported on May 1st, 2019. The USFWS reported 128 unique observation locations of Quino thorough out San Diego County (USFWS 2019). In addition, locations where ongoing monitoring surveys were conducted the number of adult observations were greater than normal (KBC 2019). By all accounts, the 2019 Quino season was a banner year for both Quino adults and their host plants.

The project area is in close proximity to one relatively recent (2017 adult flight season) Quino observation that included the observation of two adult Quino within the County's Dictionary Hill Open Space Preserve that occurs northeast of the project site. Although It should be noted, that no Quino were reported at Dictionary Hill in 2018 or 2019. Thus the long-term suitability of the Dictionary Hill Preserve for Quino is unknown at this time.

CERTIFICATION

We certify that the information in this survey report and enclosed exhibits fully and accurately represents our work. Please contact Korey Klutz at (760) 492-3342 should you have any questions.

Prepared by:



Korey Klutz, (TE 036065-2)



Lindsay Willrick, (TE 61175B-0)



Chez Brungraber, (TE-14231A-3)

ATTACHMENTS:

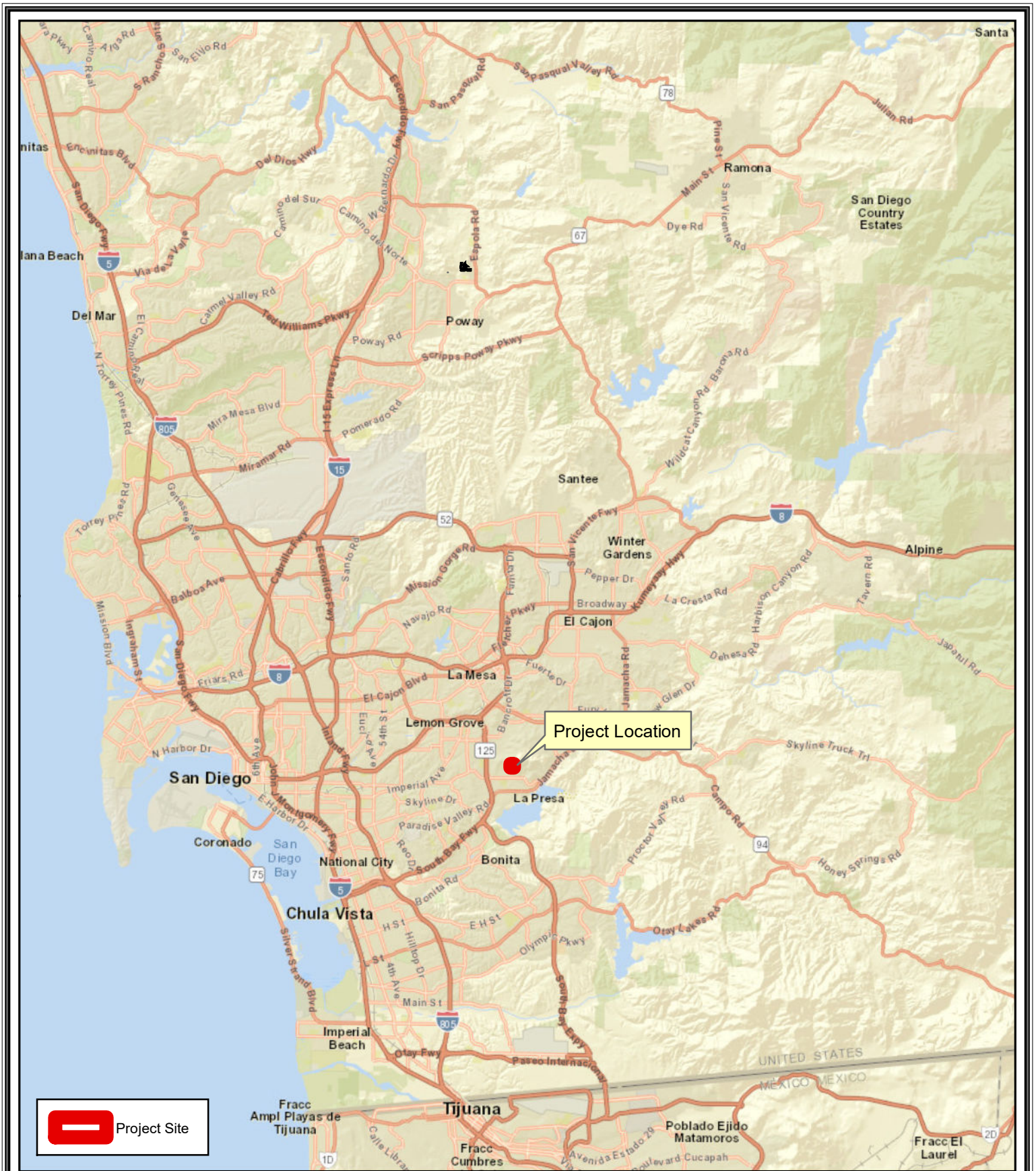
- Figure 1 Regional Vicinity
- Figure 2 Project Vicinity
- Figure 3 Quino Survey Area
- Figure 4 2019 Quino Observation within southern San Diego County

Attachment A Survey Forms (includes survey conditions and butterflies detected)

REFERENCES

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Project Site

Spring Valley Housing

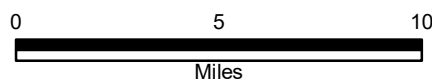
KLUTZ BIOLOGICAL CONSULTING



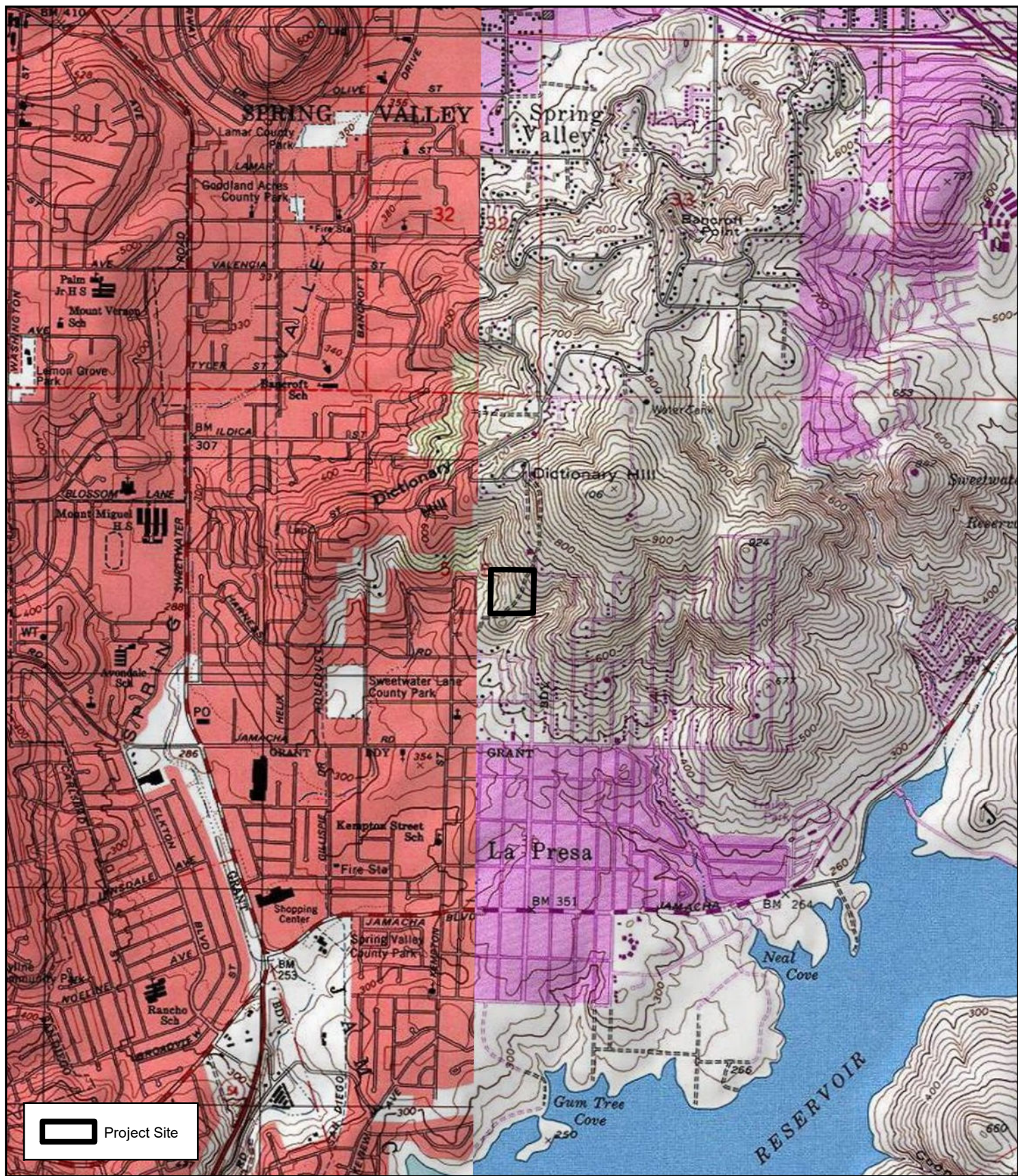
Date Printed: 5/14/2018

Author: Korey Klutz

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**Figure 1
Regional Location**



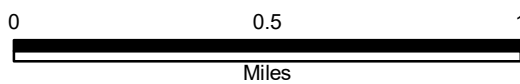
Spring Valley Housing

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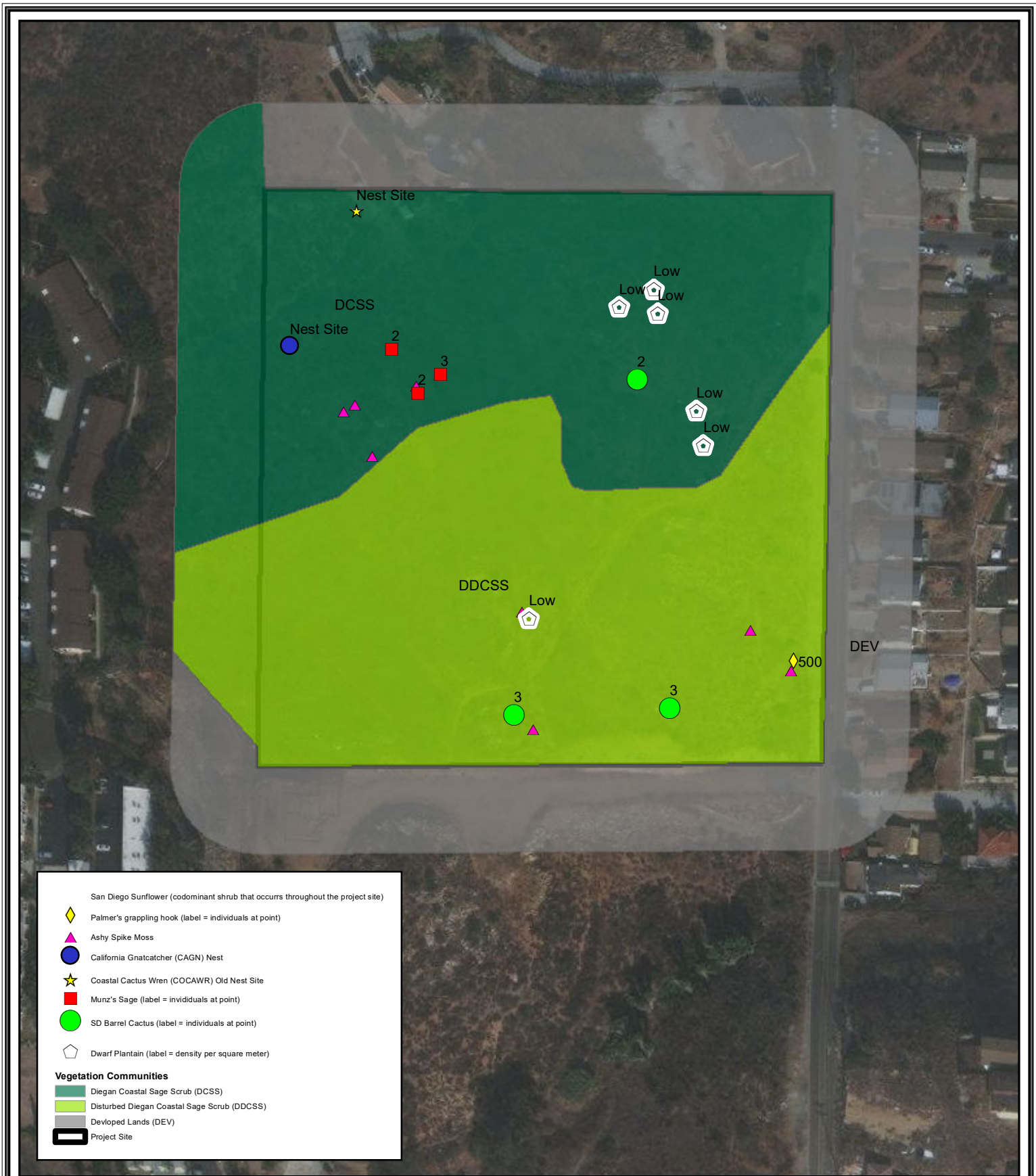
Date Printed: 5/14/2018

Author: Korey Klutz

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**Figure 2
Project Location**



San Diego Sunflower (codominant shrub that occurs throughout the project site)

- Palmer's grappling hook (label = individuals at point)
- Ashy Spike Moss
- California Gnatcatcher (CAGN) Nest
- Coastal Cactus Wren (COCAWR) Old Nest Site
- Munz's Sage (label = individuals at point)
- SD Barrel Cactus (label = individuals at point)
- Dwarf Plantain (label = density per square meter)

Vegetation Communities

- Diegan Coastal Sage Scrub (DCSS)
- Disturbed Diegan Coastal Sage Scrub (DDCSS)
- Developed Lands (DEV)
- Project Site

Spring Valley Housing

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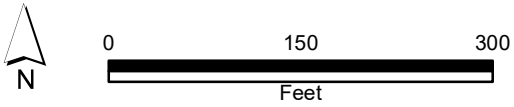
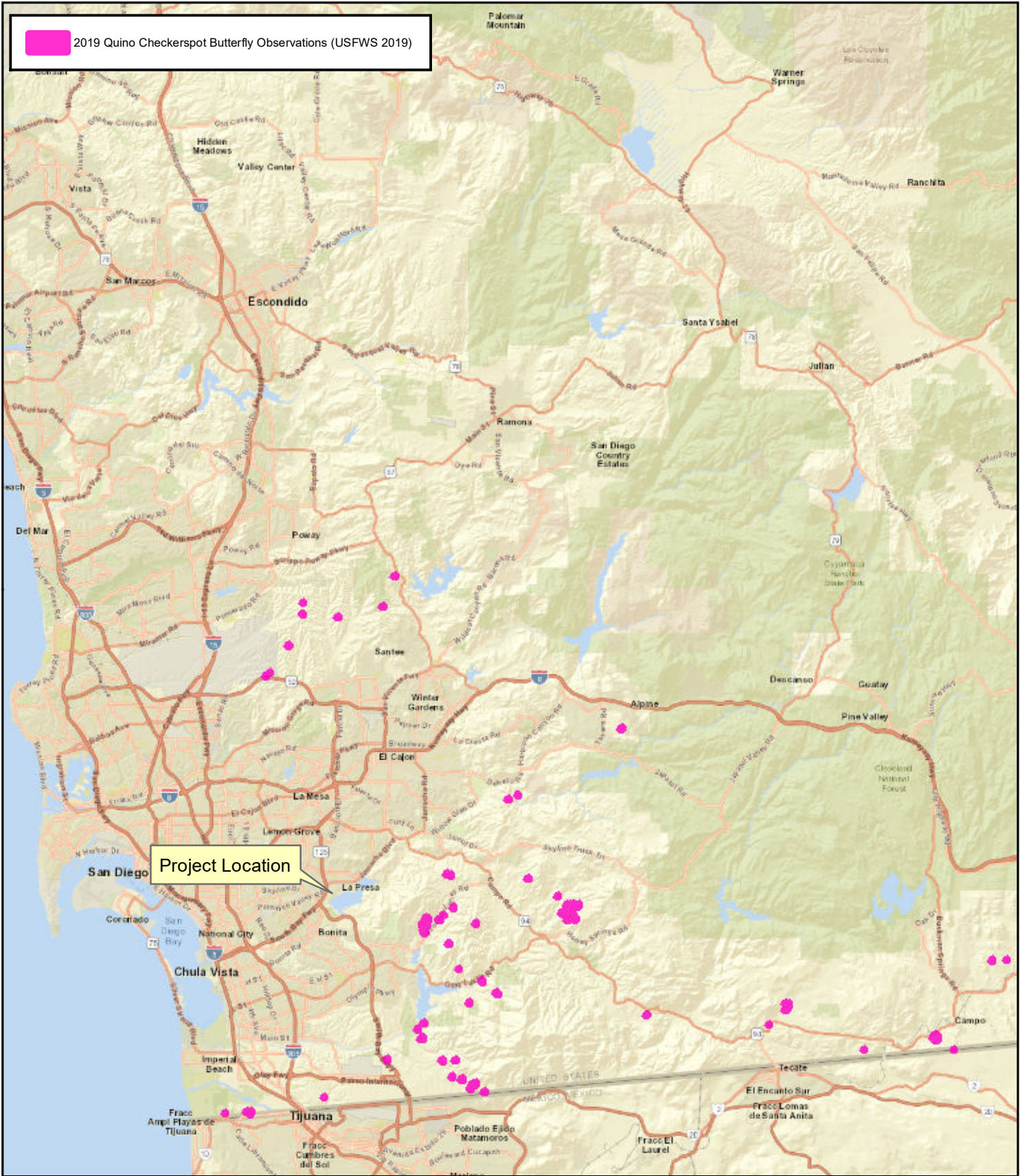


Figure 3
Vegetation Map & Sensitive Species

2019 Quino Checkerspot Butterfly Observations (USFWS 2019)



Project Location

Sweewater Loop Trail

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Date Printed: 6/19/2019 | Author: Korey Klutz

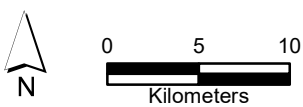


Figure 4
2019 Quino Observations within Southern San Diego County

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 02-25-2019
Site Name: Grand **Site Visit No:** 2
Area Surveyed Entire site **Acres Surveyed** 10 **Survey Time:** 2.25 hrs **Acres per Hour:** 5
Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1300	73	0-2	0
End	1515	75	2-7	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, and *Dichelostemma capitatum*.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) <u>Yes</u> No		New Area or Existing Area (circle) New <u>Existing</u> Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcon checkerspot (<i>E. chalcon chalcon</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	35+
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	3
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	1	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	4	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)	1		
unidentified sulphur			
Column Subtotal	6	Column Subtotal	39
		Total	45

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Korey Klutz Date: 03-4-2019

Site Name: Grand Site Visit No: 3

Area Surveyed Entire site Acres Surveyed 10 Survey Time: 2 hrs Acres per Hour: 5

Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	930	61	2-4	25
End	1130	65	2-5	25
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <u>No</u>		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcona chalcona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	35+
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginiensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	2	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	5	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	5	Column Subtotal	35
			Total
			40

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick Date: 03-13-2019

Site Name: Grand Site Visit No: 4

Area Surveyed Entire site Acres Surveyed 10 Survey Time: 2 hrs Acres per Hour: 5

Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1035	61	2-4	45
End	1230	72	2-5	25
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <u>No</u>		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	35+
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginiensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	5	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		5	Column Subtotal
			35
			Total
			40

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Korey Klutz Date: 03-23-2019

Site Name: Grand Site Visit No: 5

Area Surveyed Entire site Acres Surveyed 10 Survey Time: 2 hrs Acres per Hour: 5

Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	930	63	2-8	25
End	1130	69	2-8	5
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <u>No</u>		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	50+
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	2	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	10	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	3	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	5	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		20	Column Subtotal
			50
			Total
			72

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Korey Klutz Date: 03-23-2019 Site: _____

Site Name: Grand Visit No: 6

Area Surveyed Entire site Acres Surveyed 10 Survey Time: 2 hrs Acres per Hour: 5

Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	930	63	2-8	25
End	1130	69	2-8	5
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <u>No</u>		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	50+
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginiensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	2	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	10	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	3	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	5	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		20	Column Subtotal
			50
			Total
			72

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Chez Brungraber, Griffin Brungraber Date: 04-07-2019

Site Name: Grand Site Visit No: 7

Area Surveyed Entire site Acres Surveyed 10 Survey Time: 1hr, 10 min Acres per Hour: 4.25

Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1445	89	0-2	10
End	1555	87	0-2	10
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
 Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)	yes	goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	27
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	4	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	1
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	9	funereal duskywing (<i>Erynnis funeralis</i>)	3
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	35	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	3
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	2	Duskywing sp.	2
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	50	Column Subtotal	36
		Total	86

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Chez Brungraber **Date:** 04-12-2019
Site Name: Grand **Site Visit No.:** 8
Area Surveyed: Entire site **Acres Surveyed:** 10 **Survey Time:** 1hr, 50 min **Acres per Hour:** 5.5
Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1202	77	2-6	40
End	1350	76	2-6	20
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
 Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	yes	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)	yes	goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		New Area or Existing Area (circle) New <input type="checkbox"/> Existing <input checked="" type="checkbox"/> Both <input type="checkbox"/>	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcon checkerspot (<i>E. chalcon chalcon</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	3
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	2	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	1
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)	1	Skippers	
unidentified white	1	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	80	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Duskywing sp.	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		84	
			Column Subtotal
			5
		Total	
		89	

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Chez Brungraber **Date:** 04-19-2019
Site Name: Grand **Site Visit No:** 9
Area Surveyed Entire site **Acres Surveyed** 10 **Survey Time:** 1hr, 22 min **Acres per Hour:** 4.1
Other Surveyors Present: Griffin Brungraber

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1200	80	1-3	10
End	1322	71	2-4	10
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <input type="radio"/> No <input checked="" type="radio"/>		New Area or Existing Area (circle) New <input type="radio"/> Existing <input checked="" type="radio"/> Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcon checkerspot (<i>E. chalcon chalcon</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	2
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	2
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	2	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	1
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	1
checkered (common) white (<i>Pontia protodice</i>)	2	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)	2	Skippers	
unidentified white	9	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	80	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Duskywing sp.	
sleepy orange (<i>Eurema nicippe</i>)		Harford's Sulphur	1
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		95	
			Column Subtotal
			7
		Total	
		102	

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Chez Brungraber **Date:** 04-26-2019
Site Name: Grand **Site Visit No:** 10
Area Surveyed Entire site **Acres Surveyed** 10 **Survey Time:** 1hr, 25 min **Acres per Hour:** 8.5
Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1145	81	2-6	0
End	1310	81	2-6	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
 Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	yes
Host Plant Mapping Updated (circle) Yes <input type="radio"/> No <input checked="" type="radio"/>		New Area or Existing Area (circle) New <input type="radio"/> Existing <input checked="" type="radio"/> Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcon checkerspot (<i>E. chalcon chalcon</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	1
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	6
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	1	unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	1	Swallowtails	
unidentified blue	6	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	3	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)	10	common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)	7	mourning cloak (<i>Nymphalis antiopa</i>)	1
spring white (<i>P. sisymbrii</i>)	6	Skippers	
unidentified white	38	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	1
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	45	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Duskywing sp.	
sleepy orange (<i>Eurema nicippe</i>)		Square spotted blue	1
cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Fritillary	1
unidentified sulphur			
Column Subtotal		117	Column Subtotal
			Total
			128

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Chez Brungraber, Griffin Brungraber Date: 05-05-2019

Site Name: Grand Site Visit No: 11

Area Surveyed Entire site Acres Surveyed 10 Survey Time: 1hr, 15 min Acres per Hour: 4

Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
Start	1345	74	2-8	40
End	1500	75	3-7	40
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
 Open coastal sage scrub dominated by *Artemisia californica*, *Bahiopsis laciniata*, *Malosma laurina*, and *Eriogonum fasciculatum*. Additional nectar sources include: *Plantago erecta*, *Lepidium* sp., *Harpagonella palmeri*, *Dichelostemma capitatum*, *Erodium cicutarium*, *E. botrys*, *E. moschatum*.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	yes
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	yes
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	2	painted lady (<i>V. cardui</i>)	6
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	3	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	1
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)	7	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)	1	Skippers	
unidentified white	12	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	1
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	38	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1	Duskywing sp.	1
sleepy orange (<i>Eurema nicippe</i>)		Square spotted blue	8
cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Reakirt's blue	1
unidentified sulphur			
Column Subtotal		64	Column Subtotal 18
			Total 82

RESULTS OF COASTAL CALIFORNIA GNATCATCHER SURVEYS FOR THE SPRING VALLEY HOUSING PROJECT (GRAND AVE PARCEL)

PREPARED FOR:

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May 2018

KLUTZ BIOLOGICAL
CONSULTING 

BORCHER
Environmental Management 

Borcher Environmental Management, Inc. Results of California Gnatcatcher Surveys for the Spring Valley Housing Project. Spring Valley, CA. Prepared for Klutz Biological Consulting, San Marcos, CA.

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Summary

Borcher Environmental Management, Inc. was retained by Klutz Biological Consulting to conduct biological surveys and prepare a report regarding the status of the coastal California gnatcatcher (*Polioptila californica californica*) for the Spring Valley Housing Project (Grand Ave; Project Area, Project Parcel) totaling approximately 14 acres in the City of Spring valley, San Diego County, California. The proposed project includes an 8-unit subdivision for single-family attached units with two separate open space areas. Access to the proposed project would be from Grand Ave to the east.

Specifically, the Spring Valley Housing Project is in the southern portion of the community of Spring Valley, San Diego County, California (Figure 1). The map location of the project site is in the northeastern quarter of Section 5, Township 17 South, Range I West of the San Bernardino Base and Meridian; USGS 7.5' Jamul Mountains, California Quadrangle (UTM: 11-S: 500,300mE; 3,620,200mN) (Figure 2). The property lies southeast of the intersection of Grand Avenue and Eucalyptus Street. Grand Avenue is adjacent to the eastern boundary of the property. The property is located within the boundaries of the South County Segment of the San Diego County's Multiple Species Conservation Program (MSCP) Plan.

Protocol surveys for coastal California gnatcatcher were conducted between April 6 and April 20, 2018, by Andrew Borcher according to U.S. Fish and Wildlife Service protocol. One pair of coastal California gnatcatcher was observed with an active nest in the northwestern portion of the property boundary.

Project Description

Borcher Environmental Management, Inc. was retained by Klutz Biological Consulting to conduct protocol surveys for coastal California gnatcatcher (*Polioptila californica californica*; CAGN) on parcel (578-16-102; 14 acres) east located approximately 2.0 miles south of Highway 94 and 1.0 mile east of Highway 125 (See attached maps). A private client is currently performing analysis on the parcel for future development and/or mitigation potential. The proposed project includes an 8-unit subdivision for single-family attached units with two separate open space areas. Access to the proposed project would be from Grand Ave to the east. The entire project parcel is considered potential CAGN habitat.

Specifically, the Spring Valley Housing Project is in the southern portion of the community of Spring Valley, San Diego County, California (Figure 1). The map location of the project site is in the northeastern quarter of Section 5, Township 17 South, Range I West of the San Bernardino Base and Meridian; USGS 7.5' Jamul Mountains, California Quadrangle (UTM: 11-S: 500,300mE; 3,620,200mN) (Figure 2). The property lies southeast of the intersection of Grand Avenue and Eucalyptus Street. Grand Avenue is adjacent to the eastern boundary of the property. The property is located within the boundaries of the South County Segment of the San Diego County's Multiple Species Conservation Program (MSCP) Plan.

Environmental Setting

The project parcel supports Diegan Coastal Sage Scrub (DCSS) and Disturbed Diegan Coastal Sage Scrub (DDCSS) (Holland 1986) (Figure 3). The property is adjacent to Grand Avenue to the east, residential properties, natural habitat (DCSS), and disturbed habitat (DDCSS) to the north, west and south. The property is connected to undeveloped habitat in the northwest corner that extend to the top of Dictionary Hill. The property generally slopes steeply and moderately steeply to the west and south.

Coastal California Gnatcatcher

Coastal California gnatcatcher (CAGN) is a small resident insectivorous species whose occurrence is strongly associated with sage scrub habitats found throughout southern California and northern Baja California, Mexico. The U.S. Fish and Wildlife Service (USFWS) listed this species as threatened in 1993. It is also considered a CDFW species of special concern.

Historically, CAGN range extended from southern Ventura County south through Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, and into Baja California to approximately 30 degrees north latitude near El Rosario, Mexico (Atwood 1990). Habitat destruction, fragmentation, and modification have led to this species' decline (USFWS 1993). Agriculture and urban development were leading causes of habitat loss until 2003, when the Cedar

Fire destroyed almost 28% of the remaining habitat that the USFWS believed suitable for CAGN (Bond and Bradley 2003).

Although CAGN has a close association with sage scrub, this species has also been documented using coastal sage-chaparral scrub, chamise chaparral, and other habitat types (Campbell et al. 1998, Bontrager 1991). The breeding season extends from mid-February through mid-August.

Survey Area and Habitat Suitability

A general habitat assessment of the property was conducted by Andrew Borchert prior to the first survey performed on April 6, 2018. All other assessments were made during a preliminary desktop review. The initial assessment included a California Natural Diversity Database (CNDDDB) records search and the production of a vegetation map. A non-specific historic observation of CAGN was recorded in 2002 over a larger polygon that's southwestern boundary occurs approximately 300 feet to the northwest (CNDDDB 2018). There is no center point for the observation polygon.

The project parcel supports DCSS and DDCSS (Figure 3). Both DCSS and DDCSS present were considered potential habitat for CAGN. The DCSS is dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebush (*Artemisia californica*), prickly pear (*Opuntia littoralis*), and San Diego sunflower (*Bahiopsis laciniata*). The DDCSS supports the same shrubs as the DCSS but sparser due to previous disturbance including areas of bare ground, and previous dirt paths. The DCSS is fully developed and represents high quality habitat suitable for CAGN. The DDCSS is sparser and represents moderate quality habitat for CAGN.

Survey Methods

Andrew Borchert (TE-092162-2) conducted focused surveys for CAGN from April 6 through April 20, 2018 (Table 1). Mr. Borchert is authorized to conduct presence/absence surveys and nest monitoring in accordance with their federal endangered species permit. The surveys were conducted throughout the parcel in accordance with USFWS protocols and included use of pre-recorded audio playback. Audio playback was used during each survey, roughly every 30 minutes or whenever the surveyor was in areas where the previous playback could not have been heard. Access through each of the parcels was possible due to openings in vegetation and the presence of footpaths.

Table 1. Survey Conditions

Survey No.	Date (2016)	Start Time	End Time	Temp (°F)	Wind Speed (mph)	Sky Condition (Start/End)	Surveyor
1	April 6	0745	1000	61-66	0-2	Clear	A. Borchert
2	April 13	0715	0900	62-64	0-5	Clear	A. Borchert
3	May 10	0730	0845	61-65	0-1	Overcast	A. Borchert

Coastal California gnatcatcher and an active nest was observed on all three visits (Nest location; - 116.999293, 32.721596). The nest is located in a California sagebrush shrub near the northwest corner of the parcel (Figure 4). During the first visit on April 6 a male CAGN was observed calling near mid-site. The male was observed moving south and eventually with a female CAGN. The birds were observed building a nest in a California sagebrush. The nest was approximately 90% complete. On the second visit on April 13, the same pair of CAGN was observed near the nest location. The nest contained two CAGN eggs. During the third and final visit on April 20, the female was observed sitting on the nest and the male was observed foraging nearby. The territory mapped on Figure 3 shows the extent of the CAGN observations combining all three visits. Another CAGN was heard calling offsite to the south. This CAGN was not observed directly and did not enter the parcel boundary during the survey. No other CAGN were observed. The area surveyed supports high quality occupied CAGN habitat. The property boundary contains high quality (DCSS) and moderate quality (DDCSS) CAGN habitat.

In total, 25 vertebrate species were detected during the surveys, including 20 species of birds. A complete list of vertebrate species detected during the surveys is presented in Table 2.

Table 2. Vertebrate Species Detected

Common Name	Scientific Name	Special Status
Reptiles		
Western fence lizard	<i>Sceloporus occidentalis</i>	--
Side-blotched lizard	<i>Uta stansburiana</i>	--
Birds		
Cooper's hawk	<i>Accipiter cooperii</i>	--
Western scrub-jay	<i>Aphelocoma californica</i>	--
Red-tailed hawk	<i>Buteo jamaicensis</i>	--
California quail	<i>Callipepla californica</i>	--
Anna's hummingbird	<i>Calypte anna</i>	--
Costa's hummingbird	<i>Calypte costae</i>	--
San Diego Cactus Wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	CSC*
Lesser goldfinch	<i>Carduelis psaltria</i>	--
House finch	<i>Carpodacus mexicanus</i>	--
Wrentit	<i>Chamaea fasciata</i>	--
American crow	<i>Corvus brachyrhynchos</i>	--
Northern mockingbird	<i>Mimus polyglottos</i>	--
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	--
California towhee	<i>Pipilo crissalis</i>	--
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT**

Common Name	Scientific Name	Special Status
Bushtit	<i>Psaltriparus minimus</i>	--
Black-chinned sparrow	<i>Spizella atrogularis</i>	--
Bewick's wren	<i>Thryomanes bewickii</i>	--
California thrasher	<i>Toxostoma dedivivum</i>	--
Mourning dove	<i>Zenaida macroura</i>	--
Mammals		
Coyote	<i>Canis latrans</i>	--
Desert cottontail	<i>Sylvilagus auduboni</i>	--
Botta's pocket gopher	<i>Thomomys bottae</i>	--

*CSC = California Species of Special Concern

**FT = Federally Threatened

Chapter 4 Certification

We certify that the information in this survey report and attached exhibits fully and accurately represent our work.



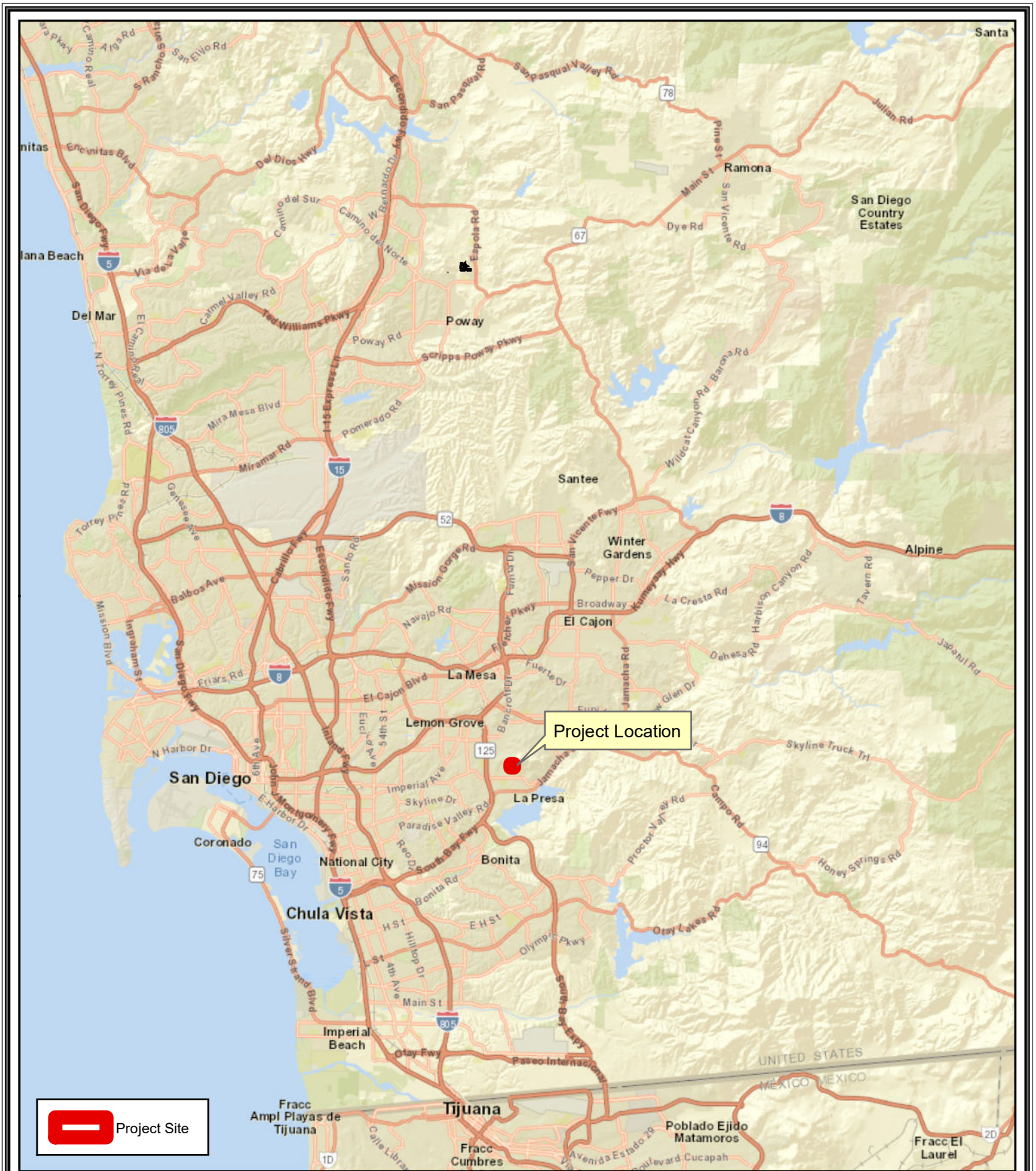
Andrew Borchers (TE-092162-2)
Principal Biologist
Borchers Environmental Management, Inc.

May 18, 2018
Date

Chapter 5

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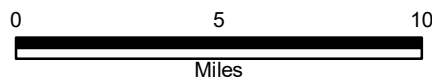
Spring Valley Housing

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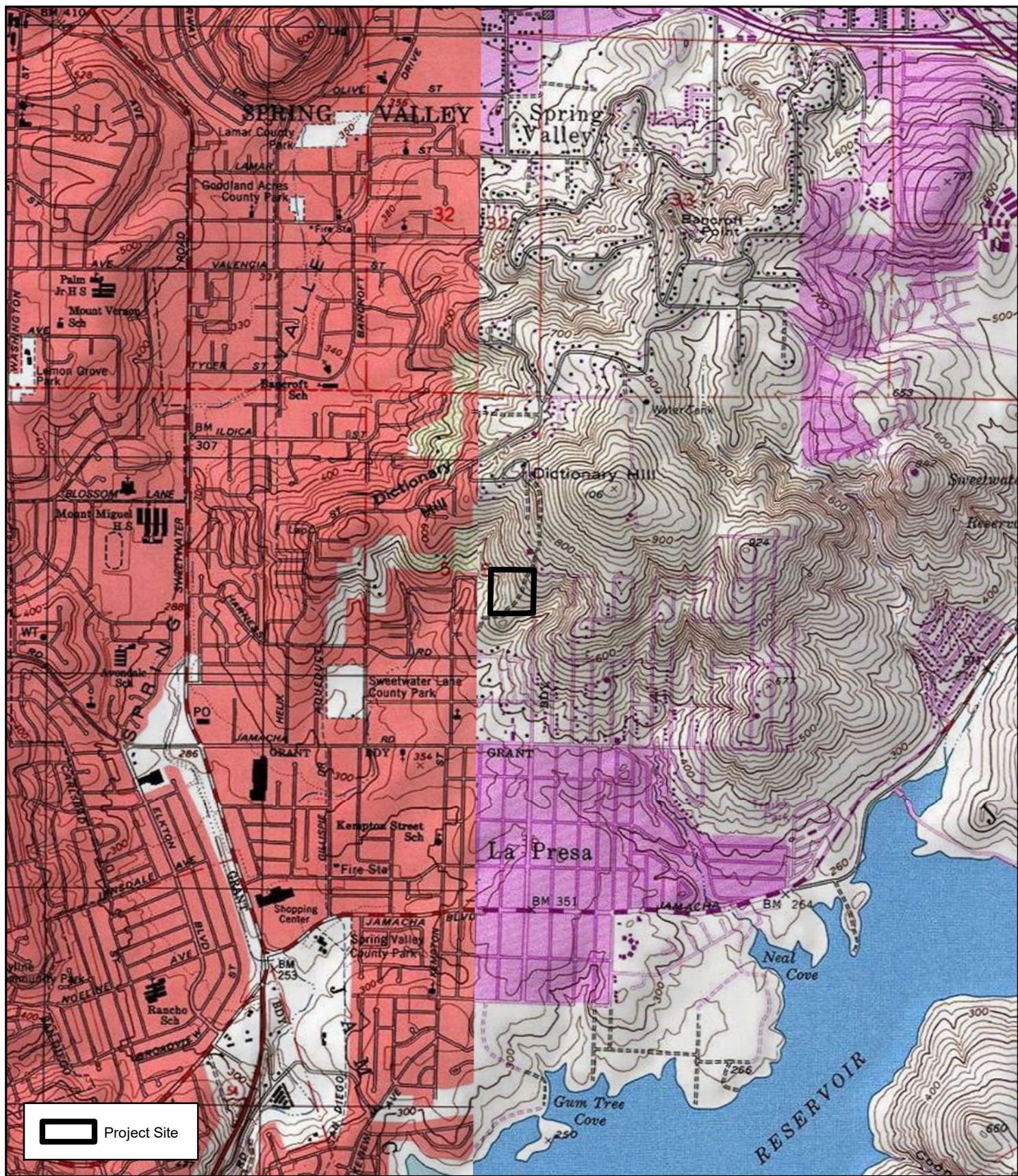
Date Printed: 5/14/2018

Author: Korey Klutz

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**Figure 1
Regional Location**



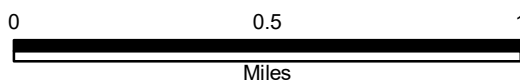
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**Figure 2
Project Location**



Vegetation Communities

- Diegan Coastal Sage Scrub (DCSS)
- Disturbed Diegan Coastal Sage Scrub (DDCSS)
- Developed Lands (DEV)
- Project Site

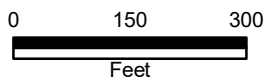
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**Figure 3
Vegetation Map**






**Spring Valley
Housing Project**



Date Printed: 5/18/2018

Author: Andrew

BEM KBC/Grand

-  Parcel Boundary
-  CAGN Nest Location
-  Approximate CAGN Territory

**Figure 4
Coastal California Gnatcatcher
Survey Results**



Attachment C CHECKLIST OF PLANT SPECIES OBSERVED AT THE SPRING VALLEY HOUSING
PROJECT SITE

CRYPTOGAMS

Ferns

Pteridaceae - Brake Family

Cheilanthes newberryi (D.C. Eaton) Domin California Cotton Fern

Selaginellaceae - Spike-Moss Family

Selaginella bigelovii Underw. Bigelow's Mossfern

Selaginella cinerascens A.A. Eat. Mesa spike-moss

DICOTYLEDONS

Anacardiaceae - Sumac Family

Malosma laurina (Torr. & Gray) Abrams Laurel Sumac

Apiaceae - Carrot Family

Apiastrum angustifolium Nutt. Mock Parsley

Asteraceae - Sunflower Family

Artemisia californica Less. California Sagebrush

Baccharis sarothroides Gray Broom Baccharis

**Centaurea melitensis* L. Tocalote

Eriophyllum confertiflorum (DC.) Gray var. *confertiflorum* Golden-yarrow

Filago californica Nutt. California Filago

**Filago gallica* L. Narrow-leaf Filago

**Hedypnois cretica* (L.) Willd. Crete Hedypnois

Hemizonia fasciculata (DC.) Torrey & Gray Fascicled Tarplant

**Hypochoeris glabra* L. Smooth Cat's-ear

**Lactuca serriola* L. Wild Lettuce

Lessingia filaginifolia (Hook. & Am.) M.A. Lane var. *jilaginifolia* Cudweed Aster

Stebbinoseris heterocarpa (Nutt.) Chambers

Stephanomeria virgata Benth. ssp. *virgata* Virgate Wreath-plant

Stylocline gnaphalioides Nutt. Everlasting Nest Straw

Viguiera laciniata Gray San Diego County Sunflower

Boraginaceae - Borage Family

Cryptantha intermedia (Gray) Greene Nievitas Cryptantha

Pectocarya linearis ssp. *ferocula* (Jtn.) Thome Slender Pectocarya

Plagiobothrys collinus (Philbr.) J.M. Johnston var. *californicus* (A. Gray) Riggings California

Popcornflower

Brassicaceae - Mustard Family

**Hirschfeldia incana* (L.) Lagr.-Fossat Short-pod Mustard

Lepidium nitidum Nutt. var. *nitidum* Shining Peppergrass

**Sisymbrium irio* L. London Rocket

Cactaceae - Cactus Family

Ferocactus viridescens (Nutt.) Britton & Rose San Diego Barrel Cactus

Opuntia ficus-indica

Opuntia littoralis

Opuntia prolifera Engelm. Coast Cholla

Caryophyllaceae - Pink Family

**Cerastium glomeratum* Thuill. Mouse-ear Chickweed

**Silene gallica* L. Common Catchfly

**Spergularia bocconii* (Scheele) Merino Buccone's Sand-spurry

Chenopodiaceae - Goosefoot Family

**Chenopodium murale* L. Nettle-leaf Goosefoot

**Salsola tragus* L. Russian Thistle

Convolvulaceae - Morning-Glory Family

Calystegia macrostegia (Greene) Brumm. ssp. *arida* (Greene) Brumm. Finger-leaf Morning-glory

**Convolvulus arvensis* L. Bindweed

Crassulaceae - Stonecrop Family

Crassula connata (Ruiz & Pav.) Berger Dwarf Stonecrop

Dudleya pulverulenta (Nutt.) Britt. & Rose Chalk-lettuce

Cucurbitaceae - Gourd Family

Marah macrocarpus (Greene) Greene var. *macrocarpus* Cucamonga Manroot, Wild-cucumber

Euphorbiaceae - Spurge Family

Chamaesyce polycarpa (Benth.) Millsp. Small-seed Sandmat

Fabaceae - Legume Family

Astragalus gambelianus Sheld. Gambel's Locoweed

Lathyrus vestitus Nutt. ssp. *alefeldii* (White) Isely San Diego Sweetpea

Lotus salsuginosus Greene ssp. *salsuginosus* Alkali Lotus

Lotus scoparius (Nutt.) Ottley var. *scoparius* Coastal Deerweed

Lotus strigosus (Nutt.) Greene Bishop's Lotus

Lupinus bicolor Lindl. Miniature Lupine

Lupinus hirsutissimus Benth. Stinging Lupine

**Medicago polymorpha* L. California Burclover

Gentianaceae - Gentian Family

Centaurium venustum (Gray) Rob. Canchalagua

Geraniaceae - Geranium Family

**Erodium botrys* (Cav.) Bertol. Long-beak Filaree

**Erodium moschatum* (L.) L'Her. White-stem Filaree

Hydrophyllaceae - Waterleaf Family

Emmenanthe penduliflora Benth. Whispering Bells

Phacelia cicutaria Greene var. *hispida* Gray Caterpillar Phacelia

Phacelia ramosissima Lehm. var. *latifolia* (Torrey) Cronq. Caterpillar Phacelia

Pholistoma racemosum (Nutt.) Const. Nuttall's Fiesta Flower

Lamiaceae – Mint Family

Salvia munzii – Munz's sage

Salvia columbare – chia

Salvia apiana – white sage

Malvaceae - Mallow Family

Malacothamnus fasciculatus (Nutt.) Greene Mesa Bush Mallow, Chaparral Mallow

**Malva parviflora* L. Cheeseweed. Little Mallow

Myoporaceae - Myoporum Family

**Myoporum laetum* Forst. F. Ngaio

Nyctaginaceae - Four-O'Clock Family

Mirabilis californica Gray California Wishbone Plant

Papaveraceae - Poppy Family

Eschscholzia californica Cham. California Poppy

Plumbaginaceae - Leadwort Family

**Limonium perezii* (Stapf.) Hubb Perez Rosemary

Polemoniaceae - Phlox Family

Eriastrum sapphirinum (Eastw.) Mason Sapphire Woolly-star

Polygonaceae - Buckwheat Family

Eriogonum fasciculatum Benth. var. *fasciculatum* Flat-top Buckwheat

Rubiaceae - Madder Family

Galium angustifolium Nutt. ex Torrey & Gray ssp. *angustifolium* Narrow-leaf Bed-straw

Saxifragaceae - Saxifrage Family
Jepsonia panyi (Torr.) Small Coast Jepsonia

Scrophulariaceae - Figwort Family
Antirrhinum nuttallianum DC. ssp. *subsessile* (Gray) Thompson Nuttall's Snapdragon
Mimulus brevipes Benth. Slope Monkeyflower
Scrophularia californica Cham. & Schldl. ssp. *gloribunda* (Greene) Shaw California Figwort

Solanaceae - Nightshade Family
**Nicotiana glauca* Grab. Tree Tobacco
Solanum parishii Heller Parish's Nightshade

MONOCOTYLEDONS

Arecaceae - Palm Family
**Washingtonia robusta* Wendle. Thread Palm

Liliaceae - Lily Family
Allium praecox Bdg. Early Onion
Chlorogalum parviflorum Wats. Small-flower Soap-plant
Dichelostemma capitatum Wood ssp. *capitatum* Wild Hyacinth

Poaceae - Grass Family
**Avena barbata* Link Slender Wild Oat
**Bromus hordeaceus* L. Soft Chess
**Bromus madritensis* L. ssp. *rubens* (L.) Husnot Red Brome
**Hordeum murinum* ssp. *leporinum* (Link) Arcang. Hare Barley
**Lamarckia aurea* (L.) Moench Golden-top
**Lolium perenne* L. Perennial Ryegrass
Nassella lepida (A.S. Hitchcock) Barkworth Foothill Needlegrass
**Rhynchelytrum repens* (Willd.) Hubb. Natal Grass
**Schismus barbatus* (L.) Thell. Mediterranean Schismus
**Vulpia myuros* (L.) Gmelin var. *hirsuta* (Hackett) Asch & Graetoner Foxtail Fescue
Vulpia octojlora (Walter) Rydb. Tufted Fescue

* - Denotes non-native plant taxa

Attachment D Wildlife Species Detected

Common Name	Scientific Name	Special Status
Reptiles		
Western fence lizard	<i>Sceloporus occidentalis</i>	--
Side-blotched lizard	<i>Uta stansburiana</i>	--
Birds		
Cooper's hawk	<i>Accipiter cooperii</i>	--
Western scrub-jay	<i>Aphelocoma californica</i>	--
Red-tailed hawk	<i>Buteo jamaicensis</i>	--
California quail	<i>Callipepla californica</i>	--
Anna's hummingbird	<i>Calypte anna</i>	--
Costa's hummingbird	<i>Calypte costae</i>	--
San Diego Cactus Wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	CSC*
Lesser goldfinch	<i>Carduelis psaltria</i>	--
House finch	<i>Carpodacus mexicanus</i>	--
Wrentit	<i>Chamaea fasciata</i>	--
American crow	<i>Corvus brachyrhynchos</i>	--
Northern mockingbird	<i>Mimus polyglottos</i>	--
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	--
California towhee	<i>Pipilo crissalis</i>	--
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT**

Common Name	Scientific Name	Special Status
Bushtit	<i>Psaltriparus minimus</i>	--
Black-chinned sparrow	<i>Spizella atrogularis</i>	--
Bewick's wren	<i>Thryomanes bewickii</i>	--
California thrasher	<i>Toxostoma dedivivum</i>	--
Mourning dove	<i>Zenaida macroura</i>	--
Mammals		
Coyote	<i>Canis latrans</i>	--
Desert cottontail	<i>Sylvilagus auduboni</i>	--
Botta's pocket gopher	<i>Thomomys bottae</i>	--

*CSC = California Species of Special Concern

**FT = Federally Threatened

Attachment E Sensitive Species with Potential to Occur

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Acanthomintha ilicifolia</i>	San Diego Thornmint	FE, CE, CRPR 1B, County List A	Friable clay soils in coastal sage scrub, chaparral and grassland.	Not detected. Low potential to occur. Suitable soils do not occur on-site.
<i>Acanatherum diegoensis</i>	San Diego needlgrass	CRPR 4, County List D	Chaparral and coastal scrub	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Adolphia californica</i>	California adolpha	CRPR 2, County List B	Maritime succulent scrub, Diegan coastal sage scrub	Not detected. Low potential to occur. Suitable occurs onsite, but this species would have been easily recognizable during field surveys.
<i>Ambrosia pumila</i>	San Diego Ambrosia	FE, CRPR 1B	Occurs on a variety of soil types including sandy loam, clay or alkaline conditions. This species will persist in disturbed landscapes and has been documented in chaparral, coastal scrub, grasslands and vernal pool habitats.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed during field surveys.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Artemisia palmeri</i>	Palmer's sagebrush	CRPR 4, County List D	A perennial semi-deciduous shrub that occurs primarily beneath the understory of coast live oak woodland and in other shaded areas. Can also occur in chaparral, coastal scrub, riparian forest, riparian scrub and riparian woodland.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed during field surveys.
<i>Astragalus deani</i>	Dean's milk-vetch	CRPR 1B, County List A	A perennial herb that occurs in chaparral, cismontane woodland, coastal scrub and riparian forest. Blooms from February-May.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	CRPR 1B, County List A	This perennial bulbiferous herb blooms from April-May on mesic or clay soils. Prefers openings in chaparral, woodlands, meadows, grasslands and sometimes adjacent to vernal pools.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Calandrinia breweri</i>	Brewer's calandrinia	CRPR 4, County List D	Chaparral and coastal scrub with sandy or loamy soils. Often follows disturbances or fire.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.

<i>Latin Name</i>	<i>Common Name</i>	Status	Habitat	Potential to occur on-site
<i>Camissonia lewissii</i>	Lewis's sun cup	CRPR 3, County List C	This annual wildflower blooms from March-May in sandy or clay soils.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Caulanthus stenocarpus</i>	Slender Pod Jewelflower	No status - Species was considered but rejected for CRPR status. Jepson manual describes this species as a synonym with <i>C. heterophyllus</i> .	Annual mustard, with purple or yellow/creamy white petals. Blooming time Mar-May in dry, open scrub, chaparral and particularly following fires.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Chorizanthe procubens</i>	Prostrate spineflower	No status - Species was considered but rejected for CRPR status.	Commonly occurs in sand or gravel within openings of scrub/chaparral habitats.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Comarostaphylis diversifolia</i>	Summer holly	CRPR 1B, County List A	Coastal and foothill canyon in dense chaparral.	Not detected. Low potential to occur. Suitable habitat does not occur onsite. Presumed to be absent from the site or considered to be unlikely to occur.
<i>Convolvus simulans</i>	small flowered morning glory	CRPR 4, County List D	Occurs in heavy clay soils, in coastal scrub and grassland habitats.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Dichondra occidentalis</i>	western dichondra	CRPR 4, County List D	A perennial rhizomatous herb that is detectable from Mar-Jul. Habitats include chaparral, cismontane woodland, coastal scrub and grasslands.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Dudleya variegata</i>	Variegated dudleya	CRPR 1B, County List A	Occurs on clay soils in the following habitats: chaparral, woodlands, coastal scrub, grasslands and vernal pools. The blooming period for this species is from April-June.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed.
<i>Ericameria palmeri</i>	Palmer's goldenbush	CRPR 1B, County List A	This perennial shrub occurs in mesic areas of chaparral and coastal scrub.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed during field surveys.
<i>Erodium macrophyllum</i>	Large leaf fillary	Considered but rejected by CRPR. Notes state too common statewide. County List B	This annual wildflower occurs on heavy clay soils.	Not detected. Low potential to occur. Marginally suitable soils occur onsite, but this species was not observed.
<i>Eryngium aristulatum parishii</i>	San Diego button celery	FE, CRPR 1B, County List A	Vernal pools	Not detected. Low potential to occur. Suitable habitat does not occur onsite. Presumed to be absent from the site or considered to have low potential to occur.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Ferocactus viridescens</i>	Coast barrel cactus	CRPR 2, County List B	Perennial stem succulent that occurs in chaparral, coastal scrub, grasslands and adjacent to vernal pools.	Detected. See figure 3 for observation locations.
<i>Githopsis difusa filicaulis</i>	Mission blue cups	CRPR 3, County List C	Mesic areas in chaparral and coastal scrub (Mission Valley).	Not detected. Low potential to occur. Suitable mesic conditions do not occur on site. Presumed to be absent from the site or considered to have low potential to occur.
<i>Harpagonella palmeri</i>	Palmer's grappling hook	CRPR 4, County List D	Clay soils in chaparral, coastal scrub and grasslands.	Detected. See Figure 3 for location located in southeastern portion of the project site.
<i>Holocarpha virgata elongata</i>	Graceful tarplant	CRPR 4, County List D	Scrub and grassland habitats. Blooms from May-Nov.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed. Presumed to be absent from the site or considered to have low potential to occur.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Isocoma menziesii decumbens</i>	Decumbant goldenbush	CRPR 1B, County List A	A perennial shrub that occurs in chaparral and coastal scrub.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed. Presumed to be absent from the site or considered to have low potential to occur.
<i>Iva hayesiana</i>	San Diego marsh elder	CRPR 2, County List B	A perennial shrub that occurs in wet habitats including marshes, swamps, riparian scrub and playas.	Not detected. Low potential to occur. Suitable habitat does not occur onsite. Presumed to be absent from the site or considered to have low potential to occur.
<i>Lepidium virginicum robinsonii</i>	Robinson's peppergrass	CRPR 4 (previously CRPR 1B but more common than originally known), County List A	Annual herb that occurs in chaparral, coastal scrub and grasslands. Blooms from Jan-July.	Not detected. Low potential to occur. Suitable habitat occurs onsite, but this species was not observed. Presumed to be absent from the site or considered to have low potential to occur.

<i>Latin Name</i>	<i>Common Name</i>	Status	Habitat	Potential to occur on-site
<i>Xanthisma junceum</i> (<i>Machaeranthera juncea</i>)	Rush like bristle bush	CRPR 4, County List D	This perennial herb blooms from May-Jan in chaparral and coastal scrub.	Not detected. Low potential to occur. Suitable habitat occurs onsite but this species was not observed. Presumed to be absent from the site or considered to have low potential to occur.
<i>Monardella viminea</i> (<i>Monardella linoides viminea</i>)	Willow monardella	CRPR 1B, County List A	Perennial herb that occurs in alluvial ephemeral washes.	Not detected. Low potential to occur. Suitable habitat does not occur onsite. Presumed to be absent from the site or considered to have low potential to occur.
<i>Bloomeria clevelandii</i> (<i>Muilla clevelandii</i>)	San Diego goldenstar	CRPR 1B, County List A	Perennial bulbiferous herb that prefers openings in chaparral, coastal scrub, grasslands and adjacent to vernal pools. Blooms period is April-May.	Not detected. Low potential to occur. Suitable habitat occurs onsite but this species was not observed. Presumed to be absent from the site or considered to have low potential to occur.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Myosurus minimus apus</i>	Little mousetail	CRPR 3, County List C	Vernal pools.	Not detected. Low potential to occur. Suitable habitat does not occur onsite. Presumed to be absent from the site or considered to have low potential to occur.
<i>Navarretia fossalis</i>	Spreading navarretia X	FT, CRPR 1B, County List A	Vernal pools, chenopod cscrub and playas.	Not detected. Low potential to occur. Suitable habitat does not occur onsite. Presumed to be absent from the site or considered to have low potential to occur.
<i>Pentachaeta aurea</i>	Golden-rayed pentachaeta	CRPR 4, County List D	This annual wildflower blooms from Mar-Jul in chaparral, scrub, woodland lower montane forest and grassland habitats.	Not detected. Low potential to occur. Suitable habitat occurs onsite but this species was not observed. Presumed to be absent from the site or considered to have low potential to occur.
<i>Salvia munzii</i>	Munz's sage	CRPR 2, County List B	Perennial shrub that occurs in coastal scrub and chaparral. Blooms from Feb-Apr.	Detected. See figure 3 for observation locations.
<i>Selaginella cinerascens</i>	Mesa club moss	CRPR 4, County List D	Perennial rhizomatous herb that occurs in chparral and coastal scrub	Detected. See figure 3 for observation locations.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Bahiopsis laciniata</i> (<i>Viguiera laciniata</i>)	San Diego sunflower	CRPR 4, County List D	Coastal scrub.	Detected. Co-dominant shrub within the coastal sage scrub onsite.
<i>Accipiter cooperi</i>	Cooper's hawk	CDFW Watch List (nesting), County Group 1	Woodlands	Detected. A lone individual was observed flying over the site. Suitable nesting habitat does not occur onsite.
<i>Accipiter striatus</i>	Sharp-shinned hawk	CDFW Watch List (nesting), County Group 1	Mixed forest and woodlands.	Not detected. Low potential to occur. Not expected to nest on-site due to the lack of suitable habitat.
<i>Aimophila ruficeps canescens</i>	Rufous-crowned sparrow	CDFW Watch List (nesting), County Group 1	Coastal sage scrub and chaparral	Not detected. Suitable habitat occurs onsite but this species was not observed. Moderate potential exists for this species to occur onsite.
<i>Ammodramus savannarum</i>	grasshopper sparrow	CDFW SSC (nesting), County Group 1	Occurs in grassland, hayfields, prairies. Prefers dry habitats and fields/prairies, especially those with tall grasses and little shrub cover.	Not detected. Suitable habitat occurs onsite but this species was not observed. Moderate potential exists for this species to occur onsite.
<i>Amphispiza belli</i>	Bell's sage sparrow	CDFW Watch List (nesting), County Group 1	Coastal sage scrub	Not detected. Suitable habitat occurs onsite but this species was not observed. Moderate

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
				potential exists for this speices to occur onsite.
<i>Anniella pulchra</i>	Silvery legless lizard	CDFW SSC, County Group 2	Occurs in grasslands, dunes, chaparral and coastal scrub. This lizard usually forages at the base of shrubs or other vegetation either on the surface or just below it in leaf litter or sandy soil.	Not detected. Suitable habitat occurs onsite but this sepecies was not observed. Moderate potential exists for this speices to occur onsite.
<i>Antrozous pallidus</i>	Pallid bat	County Group 2, SSC	Roost in rock crevices in a variety of habitats.	Not detected. Suitable habitat does not occur onsite. Low potential to occur due the lack of suitable roosting habitat.
<i>Aquila chrysaetos</i>	Golden eagle	USFWS Birds of Conservation Concern, USFWS Bald Eagle and Golden Eagle Act, CDFW Fully Protected, CDFW Watch List, County Group 1	Nest sites are usually on cliffs sometimes on large trees. Requires large open space areas for foraging. Will avoid foraging areas near development.	Not detected. Suitable habitat does not occur onsite. Low potential to occur.
<i>Ardea herodias</i>	Great blue heron	CDF Sensitive, Group 2	Marshes, swamps, shores, tideflats. Forages in any kind of calm waters or slow-moving rivers.	Not detected. Suitable habitat does not occur onsite. Low potential to occur.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
Athene cunicularia hvauaea	Burrowing owl	USFWS Bird of Conservation Concern, CDFW SSC, County Group 2	Open grasslands, prairies, farmland, airfields. Favors areas of flat open ground with very short grass or bare soil.	Not detected. The site was searched for suitable burrows and sign but none were detected. Low potential to occur.
Bassariscus astutus	Ringtail cat	CDFW Fully Protected, County Group 2	Ringtail cats are nocturnal and solitary. They are timid towards humans and seen much less frequently than raccoons. Typically occurs rocky habitats where it will nest in cavities of trees or other cavities.	Not detected. Suitable habitat does not occur onsite. Low potential to occur.
Buteo regalis	Ferruginous hawk	USFWS Bird of Conservation Concern, CDFW Watch List (wintering), County Group 2	Nest sites include woodlands and cliffs.	Not detected. Suitable habitat does occur onsite. Low potential to occur.
Campylorhynchus brunnicapillus sandiegensis	Coastal cactus wren	USFWS Sensitive, USFWS Bird of Conservation Concern, CDFW SSC, County Group 1	Coastal scrub and maritime succulent scrub. Nest in cactus thickets.	Detected foraging in the northwestern portion of the property. Suitable habitat occurs onsite. In 2018 this species was likely nesting off-site (northwest) but an old nest location was observed onsite (Figure 3).

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Cathartes aura</i>	Turkey vulture	County Group 1	Occurs/forages in a variety of habitats. Prefers isolated rocky cliffs or woodlands for nesting.	Not detected. Moderate potential to forage onsite.
<i>Chaetodipus californicus femoralis</i>	Dulzura California pocket mouse	CDFW SSC, County Group 2	Coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	Not detected. Moderate potential remains for this species to occur onsite.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	CDFW SSC, County Group 2	Coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	Not detected. Moderate potential remains for this species to occur onsite.
Charina trivirgata roseofusca	Rosy boa (southern rubber boa is more accurately associated with <i>Charina umbratica</i>)	County Group 2	Rosy boas are thick-bodied slow-moving snakes of deserts and rocky shrublands in southern California. They are most often active at night, and in the evening.	Not detected. Moderate potential remains for this species to occur onsite.
Choeronycteris mexicana	Mexican long-tongued bat	CDFW SSC, County Group 2	This species is a nectar feeder that occupies desert and montane riparian, desert succulent shrub, desert scrub and pinyon-juniper habitats. Roots in caves, mines and buildings.	Not detected. Low potential to occur onsite due to the lack of suitable roosting habitat.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Circus cyaneus hudsonius</i>	Northern harrier	CDFW SSC, County Group 1	Marshes, grasslands and scrub habitats.	Not detected. Due to the small size and proximity to existing development the site represents low to moderate quality foraging habitat.
<i>Cnemidophorus hyperythrus</i>	Orange-throated whiptail	CDFW Watch List, County Group 2	Diegan coastal sage scrub, grasslands and chaparral.	Not detected. Due to the small size and proximity to existing development the site represents low quality habitat.
<i>Cnemidophorus tigris multiscutatus</i>	coastal whiptail	CDFW SSC, County Group 2	Chaparral and coastal sage scrub	Not detected. Moderate potential occurs for this species to occur.
<i>Coleonyx variegatus abbottii</i>	San Diego banded gecko	CDFW SSC	Prefers rocky areas in coastal sage and chaparral.	Not detected. Low potential to occur due to the lack of suitable habitat.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	CDFW SSC County Group 2	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts.	Not detected. Low potential to occur due to the lack of suitable roosting habitat.
<i>Crotalus ruber</i>	Northern red diamond rattlesnake	CDFW SSC County Group 2	Occurs from sea level to 900 m (3000 ft) in chaparral, woodland, and arid desert habitats in rocky areas and dense vegetation.	Not detected. Moderate potential remains for this species to occur.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Diadophis punctatus similis</i>	San Diego ringneck snake	County Group 2	Occurs in a variety habitat types including coastal sage scrub, chparral, and grasslands	Not detected. Moderate potential remains for this species to occur.
<i>Elanus caeruleus</i>	White-tailed kit	CDFW Fully Protected, County Group 1	Inhabits herbaceous and open stages of most habitats mostly in cismontane California.	Not detected. Moderate potential remains for this species to occur/forage onsite.
<i>Eremophila alpestris actis</i>	Horned lark	CDFW Watch List, County Group 2	Grasslands	Not detected. Moderate potential remains for this species to occur onsite.
<i>Eumeces skiltonianus interparietalis</i>	Coronado skink	CDFW Watch List, County Group 2	Occurs in a variety habitat types including coastal sage scrub, chparral, and grasslands	Not detected. Moderate potential remains for this species to occur.
<i>Eumops perotis californicus</i>	Greater western mastiff bat	CDFW SSC, County Group 2	Ideal habitat for this bat must have large open area with roost sites having vertical faces. They will roost in small colonies in rock fissures in high cliff faces.	Not detected. Low potential to occur due to the lack of roosting habitat onsite.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE, County Group 1	Openings in Diegan coastal sage scrub and chaparral. Primary host plant is dwarf plantain (<i>Plantago erecta</i>).	Not detected. Moderate potential to occur but focused surveys for this species in 2018 and 2019 were negative. Presumed absent from the site and unlikely to occur due to lack of significant host plant patches (see Figure 3 – Dwarf Plantain only occurs in low density onsite). Please note that moderate potential remains because the habitat onsite is suitable for adult nectaring and dispersal.
<i>Euphys vestris harbisoni</i>	Dun skipper	County Group 1	Riparian woodlands with host plant San Diego sedge (<i>Carex spissa</i>)	Not detected. Low potential to occur onsite due to the lack of suitable habitat and its host plant was not observed.
<i>Falco mexicanus</i>	Prairie falcon	CDFW Fully Protected (nesting)	Primarily known from the eastern portion of San Diego County. Nest on ledges on cliffs or bluffs and forage in open desert or grassland.	Not detected. Low potential to occur due the site location outside of the birds typical range.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Felis concolor</i>	Mountain lion	CDFW SSC, County Group 2	Solitary animals that require large ranges within a variety of habitats.	Not detected. Low potential to occur due to the developed nature of the site and surrounding rural residences.
<i>Lanius ludovicianus</i>	Loggerhead shrike	CDFW SSC	Openings in chaparral, coastal sage scrub and grasslands with perch sites.	Not detected. Low potential to occur due the disturbed nature of the site.
<i>Larus californicus</i>	California gull (non breeding)	CDFW Watch List, County Group 2	A fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades, and an abundant visitor to coastal and interior lowlands in nonbreeding season	Not detected. Low potential to occur due to the lack of suitable habitat.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	CDFW SSC, County Group 2	Abundant at lower elevations in herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats.	Not detected Moderate potential to occur onsite.
<i>Lycaena hermes</i>	Hermes copper	USFWS Candidate, County Group 1	Chaparral and coastal sage scrub with Spiny Redberry (<i>Rhamnus crocea</i>) and primary nectaring plant California buckwheat (<i>Eriogonum fasciculatum</i>).	Not detected. Low potential to occur onsite because its primary larval host plant Spiny Redberry was not observed onsite.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Macrotus californicus</i>	California leaf-nosed bat	CDFW SSC, County Group 2	Habitats occupied include desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Females form maternity colonies in summer, preferring tunnels and caves.	Not detected. Low potential to occur due to the lack of suitable roosting habitat.
<i>Myotis ciliolabrum</i>	Small-footed myotis	CDFW SSC, County Group 2	It occurs in a wide variety of habitats, primarily in relatively arid wooded and brushy uplands near water. This species is found from sea level to at least 2700 m	Not detected. Low potential to occur due to the lack of nearby water sources.
<i>Myotis yumanensis</i>	Yuma myotis	CDFW SSC, County Group 2	Grasslands and coastal scrub where water sources are available. Roosts in buildings, caves, mines and under bridges.	Not detected. Low potential to occur due the lack of suitable roosting habitat.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CDFW SSC, County Group 2	Common to abundant in Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats. Also found in a variety of other habitats.	Not detected. Moderate potential remains for this species to occur onsite.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Nyctinomops macrotis</i>	Big free-tailed bat	CDFW SSC, County Group 2	Prefer rocky terrain, feed largely on moths and roosts in buildings, caves and occasionally in holes within trees	Not detected. Suitable roosting habitat does not occur onsite. Low potential to occur.
<i>Nyctinomops femorosaccus</i>	Pocketed free-tailed bat	CDFW SSC, County Group 2	Occurs where large sources of water are abundant in the following habitats: in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Roosts in rock crevices, caverns or buildings.	Not detected. Water sources and suitable roosting habitat do not occur onsite.
<i>Odocoileus hemionus</i>	Southern mule deer	County Group 2	Range throughout the western United States, including the deserts. Forage on fresh green leaves, twigs, grasses herbs, weeds, berries and cactus fruit	Not detected. Moderate potential remains for this species to occur onsite.
<i>Onychomys torridus ramona</i>	Southern grasshopper mouse	County Group 2	Inhabits a variety of low, open and semi-open scrub lands including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs.	Not detected. Moderate potential remains for this species to occur onsite.

<i>Latin Name</i>	<i>Common Name</i>	Status	Habitat	Potential to occur on-site
<i>Phrynosoma coronatum blainvillei</i>	San Diego horned lizard	CDFW SSC, County Group 2	Diegan coastal sage scrub and maritime succulent scrub	Not detected. Moderate potential remains for this species to occur onsite.
<i>Polioptila californica</i>	California gnatcatcher	FT, CDFW SSC, County Group 1	Coastal sage scrub, broom baccharis scrub.	Detected. One pair was observed onsite (Figure 3).
Spea (Scaphiopus) hammondii	Western spadefoot toad	CDFW SSC, County Group 2	Occurs primarily in grasslands, but occasional populations also occur in valley-foothill hardwood woodlands. Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains.	Not detected. Suitable breeding habitat does not occur onsite.
<i>Taxidea taxus</i>	American badger	CDFW SSC, County Group 2	Open grasslands, primarily a nocturnal feeding animal.	Not detected. Low potential to occur onsite.

<i>Latin Name</i>	Common Name	Status	Habitat	Potential to occur on-site
<i>Perognathus longimembris pacificus</i>	Pacific Pocket Mouse	FE, SSC, County Group 1	Occurs on fine-grain, sandy substrates in open coastal sage scrub, coastal strand, coastal dune, and river alluvium habitats. The subspecies is threatened by habitat destruction and fragmentation, documented depredation by domestic cats, and recreational activities.	The closest reported location for pacific pocket mouse location by the CNDDDB is 20 kilometers southwest of the site. This is site is presumed extirpated. The closest known extant population is located 35 kilometers northwest of the site. The project site is considered to have a low potential to support this species because it is outside the currently known range.

SPRING VALLEY HOUSING PROJECT

SAN DIEGO COUNTY, CALIFORNIA

Record ID: PDS2019-TM-5636.

**Project Address: Grand Ave. and Eucalyptus Street,
APN: 578-161-02**

Prepared for:

**County of San Diego
Planning and Development Services
5510 Overland Avenue, 3rd Floor, Room 310
San Diego, California 92123**

Project Applicant:

**Mark Khouli
Lighthouse Builders, Inc.
1620 La Pressa
Spring Valley, CA 91977**

Prepared by:

Korey Klutz, Senior Revegetation Planner

Signature _____

korey@klutzbio.net

KLUTZ BIOLOGICAL 
CONSULTING

October 26th, 2021

1.0 DESCRIPTION OF THE DEVELOPMENT PROJECT FOR WHICH REVEGETATION IS BEING INSTALLED

The proposed project is a residential subdivision that proposes to split APN 578-161-02 (9.92 acres) into seven (7) legal lots that each will contain seven single family detached residences and one open space lot. Translocation of six San Diego barrel cactus (*Ferocactus viridescens*) from the proposed development area to the on-site open space lot will be a required component of the project's mitigation. This report summarizes the proposed translocation effort and the associated 5 years of biological/revegetation monitoring.

1.1 Responsible Parties

This revegetation plan has been prepared for the Mark Khouli of Lighthouse Builders, Inc., The property owner(s) are responsible for the implementation of this plan. The current property owner is:

Mark Khouli
Lighthouse Builders, Inc.
1620 La Pressa
Spring Valley, CA 91977
markkhouli@sbcglobal.net

1.2 Location of the Development Project

The Spring Valley Housing Project (project) is located in the southern portion of the community of Spring Valley, San Diego County, California (Figure 1). The map location of the project site is in the northeastern quarter of Section 5, Township 17 South, Range of the United States Geologic Service (USGS) 7.5' Jamul Mountains, California Quadrangle (UTM: 11-S: 500,300mE; 3,620,200mN) (Figure 2). The property lies southwest of the intersection of Grand Avenue and Eucalyptus Street. Grand Avenue is adjacent to the eastern boundary of the property. The property is located within the boundaries of the South County Segment of the San Diego County's Multiple Species Conservation Program (MSCP) Plan.

1.3 Summary of Overall Development Project

The proposed project is a 7-lot residential subdivision with new single-family detached residences and an eighth lot that will be comprised entirely of a biological open space. Access to the proposed project will be from Grand Avenue. All proposed improvements will occur on-site. No off-site impacts are proposed or are necessary.

Habitats occurring within the study area (project site and a 100-foot buffer) include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub and developed land. Eight sensitive species were observed during surveys in 2018 and 2019 including Munz's sage, San Diego barrel

cactus, Palmer's grappling hook, ashy spike moss, San Diego sunflower, California gnatcatcher, coastal cactus wren and Cooper's hawk.

The project will impact approximately 4.07 acres of disturbed and undisturbed Diegan coastal sage scrub (DCSS) habitat. 5.85 acres of Diegan coastal sage scrub habitat will be conserved onsite in a biological open space easement. An additional 0.38-acre of DCSS will be conserved at an off-site mitigation bank.

1.3.1 Land Use

On-site the current land use includes open space areas dominated by plants commonly associated with Diegan coastal sage scrub habitat. The property is often used as a through-fare by pedestrians accessing residential areas that surround the property on all sides.

1.3.2 Plant Communities

A biological resources report prepared by Klutz Biological Consulting identified two land cover types on the property including Diegan coastal sage scrub, and disturbed Diegan coastal sage scrub (Figure 3) (KBC 2021). Urban/developed lands consisting of residential buildings also occur within the mapping buffer and these areas surround all sides of the property (Figure 3).

1.3.3 Faunal Resources

Wildlife associated with the project site is characteristic of that within and adjacent scrub habitats including songbirds, birds of prey, small mammals, reptiles, and amphibians. In total, 25 vertebrate species were detected during the surveys, including 20 species of birds.

1.3.4 Topography

The project parcel is moderately sloped from the southwestern portion of the site to the northeastern portion of the site. The on-site elevations range from approximately 490 feet above mean sea level to 670 feet above mean sea level (Figure 2).

1.3.5 Soils

Soils on the property include: acid igneous rock, Fallbrook sandy loam, Visalia sandy loam, The soils on the property are mapped by Bowman as San Miguel-Exchequer rocky silt loams, 9 to 70 percent slopes (SnG) (Bowman 1973). San Miguel-Exchequer soils form in residuum weathered from metavolcanic rocks. Specifically, the soil onsite (SnG) is comprised of 50% by San Miguel silt loam, 40% Exchequer silt loam and about 10 percent by rock outcrops (Bowman 1973).

1.3.6 Sensitive Species

Eight sensitive species were observed on-site during surveys in 2018 and 2019 including Munz's sage, San Diego barrel cactus, Palmer's grappling hook, ashy spike moss, San Diego sunflower, California gnatcatcher, coastal cactus wren and Cooper's hawk.

2.0 GOALS OF THE REVEGETATION PROJECT

2.1 Responsibilities

2.1.1 Project Owner

The owner of the project site shall be responsible for the success of the project. The owner's responsibilities include contracting an installation contractor, a revegetation biologist/monitor, and a revegetation maintenance contractor. The project owner is also responsible for providing the funding for the project. It will be the project owner's responsibility to see that all required monitoring is conducted, all recommended maintenance (including reseeding or replanting) is carried out, and all required reports are submitted in a timely manner.

2.1.2 County of San Diego

The County is responsible for ensuring that the revegetation plan is implemented as described, that maintenance, monitoring, and reporting occur, and that final success criteria described in the revegetation plan are attained. The County shall determine if the translocation is implemented and functioning as presented in this plan.

2.1.3 Revegetation Project Designer

The revegetation project designer shall be on the County's CEQA consultant list for privately initiate projects for Revegetation Planning. The designer shall also be knowledgeable about the plant communities proposed for the revegetation site, have at least two years of experience in native habitat design and function, and at least two years of experience identifying and sampling native vegetation and classifying/describing native plant communities in the San Diego region.

The revegetation project designer is responsible for preparing a final revegetation plan based on the conceptual plan. The plan shall address site conditions, site preparation, plant palette¹, seed application, container plants, container plant installation, irrigation, maintenance, monitoring,

¹ The plant palette consists of the seed and container plants selected for the project. The seed palette shall be based on conditions on the proposed revegetation site and/or in similar immediately adjacent habitat. All plant materials in the plant palette shall be collected in San Diego County and the suppliers shall certify in writing that the materials are local in origin.

reporting², and success criteria. The plan shall include landscape drawings in sufficient detail to be implemented by the installation contractor. If the revegetation project designer is not a landscape architect, the project designer shall oversee a landscape architect in the preparation of all design drawings. The drawings shall be in sufficient detail to permit the revegetation installation and maintenance contractors to prepare accurate and realistic proposals and scopes of work. Design drawings shall conform to guidelines provided in conformance with Part III of the *Revegetation Plans Applicant's Guide*, "General Requirements for the Construction Implementation Drawings," Section 2.11 of the *County of San Diego Report Format and Content Requirements Revegetation Plans*, "Drawing Requirements."

2.1.4 Installation Contractor

The installation contractor shall be responsible for installing vegetation in accordance with the plans contained in the final revegetation plan. The installation contractor shall work in close cooperation with the revegetation biologist/monitor. The installation contractor shall be responsible for maintaining the revegetation site throughout the 120-day PEP. Maintenance responsibilities include removal and replacement of all dead container plants installed as part of this plan, removal of all non-native invasive plants in the revegetation area, prevention of herbivory³ and the replacement of all plants damaged by grazing or browsing.

The installation contractor shall report all visits to the site. The reports shall include the date of the site visit, the purpose of the site visit, hours spent on the site, and work completed. Site visit reports shall be submitted to the project owner and the revegetation biologist/monitor.

2.1.5 Revegetation Biologist/Monitor

The revegetation biologist/monitor shall have a minimum four-year degree in botany, wildlife biology, or ecology. The revegetation biologist/monitor shall have at least two years experience with local, native revegetation/restoration projects. The revegetation biologist/monitor shall have at least five years experience identifying and sampling native vegetation and classifying/describing local native plant communities.

The revegetation biologist/monitor shall be responsible for the overall supervision of installation, maintenance, and monitoring of this revegetation project. This individual shall have the authority to make substitutions of plant material and change the conditions of this plan as site conditions may dictate, as long as the County and the property owner are consulted. The revegetation biologist/monitor will educate all participants regarding the revegetation goals and

² Maintenance, monitoring, and reporting shall include requirements for the 120-day plant establishment period (PEP) and the five-year monitoring period.

³ Herbivory is damage or destruction of plants through browsing by rodents and other animals. The installation of caging to protect container stock will be used as necessary to prevent herbivory.

requirements. This individual will provide guidance to the project owner and contractors throughout the 120-day PEP and the five-year maintenance and monitoring period.

The revegetation biologist/monitor is responsible for ensuring that revegetation is implemented in accordance with this plan. The revegetation biologist/monitor shall be present during site preparation, seeding, installation of container plants, and installation of the irrigation system. A written report certifying the installation of these features shall be submitted to the project owner and copies provided to the County.

The revegetation biologist/monitor is responsible for monitoring the revegetation site throughout the 120-day PEP and the five-year monitoring period. Monitoring shall be performed in accordance with the procedures described in Section 6.0 of this plan. Monitoring reports shall be completed and submitted to the project owner, the revegetation maintenance contractor, and the County within 10 working days of completion.

During periodic inspections, the revegetation biologist/monitor shall identify plants requiring replacement because they are dead, damaged, or diseased. Areas that were seeded, but where germination does not meet success criteria, shall be identified. Areas where weeds (non-native invasive plants) have become established shall be identified. Barrier maintenance, sign maintenance, and litter control issues shall be identified. Deficiencies and recommended remediation shall be included in the site visit report. This report will be submitted to the project owner and the County. A copy of the report shall be provided to the revegetation maintenance contractor. It is the responsibility of the revegetation biologist/monitor to work in concert with the revegetation maintenance contractor to ensure that success criteria for the project are attained.

The revegetation biologist/monitor shall report all visits to the site. The reports shall include the date of the site visit, the purpose of the site visit, hours spent on the site, deficiencies noted, and work completed. Site visit reports shall be submitted to the project owner for submittal to the County within five working days of the site visit. Copies of the site visit reports shall be attached to invoices for work performed when they are submitted to the project owner or the owner's designee.

The revegetation biologist/monitor shall prepare an annual report summarizing all monitoring, maintenance, and management activity. The report shall objectively describe how well success criteria are being met and propose remedial action when appropriate. The report shall be prepared for submission on the anniversary of the start of the five-year monitoring period. This report shall be submitted to the project owner and the County. The revegetation biologist/monitor shall be provided a copy of the report.

2.1.6 Revegetation Maintenance Contractor

After the 120-day PEP is accepted and deemed complete by the County, the project owner shall hire a revegetation maintenance contractor for the five-year monitoring period. This contractor may be the installation contractor. During periodic inspections described in this plan, the revegetation biologist/monitor shall identify plants requiring replacement because they are dead, damaged, or diseased. Areas where weeds (non-native invasive plants) have become established shall be identified. Barrier maintenance, sign maintenance, and litter control issues shall be identified. It shall be the revegetation maintenance contractor's responsibility to remediate the deficiencies reported by the revegetation biologist/monitor. It is the responsibility of the revegetation maintenance contractor to work in concert with the revegetation biologist/monitor to ensure that success criteria for the project are attained.

The revegetation maintenance contractor shall report all visits to the site. The reports shall include the date of the site visit, the purpose of the site visit, hours spent on the site, and work completed. Site visit reports shall be submitted to the project owner and the revegetation monitor/biologist within five working days of the site visit. Copies of the site visit reports shall be attached to invoices for work performed when they are submitted to the project owner or the owner's designee.

2.2 Type and Area of Habitat to Be Revegetated

Prior to any grading or clearing of the development site (seven residential lots), two patches (six individuals) of San Diego barrel cactus will be salvaged from the project footprint and relocated to the on-site open space (Figure 3). The relocation area will be closely associated with an existing patch of barrel cactus (two individuals) that will be conserved on-site within the open space lot (Figure 3). Salvaging the six individuals will ensure successful mitigation of species-based mitigation requirements as outlined in the project's biological resources letter report (KBC 2021). Additionally, there is the possibility of planting nursery-propagated individuals to offset salvaged cactus mortalities and ensure successful mitigation. Coast barrel cactus conservation status, biology, rationale for expecting translocation success, and site selection are described in the following sections.

2.3 Functions and Values

Since this restoration plan focuses on the translocation of San Diego barrel cactus and is not habitat based the functions and values to be restored consists entirely of meeting a 1:1 mitigation for individuals impacted by the proposed residential project. This will consist of translocating six individual barrel cacti and monitoring the translocated cacti to ensure 100% survivorship after five years.

2.4 Time Lapse

The translocation effort must be implemented prior to the issuance of the project's grading plan and building permits. A minimum of five-years of monitoring will be required to ensure successful species-based mitigation is achieved.

2.5 Cost

This estimate includes a three percent annual increase for monitoring, report preparation, and maintenance. A 20 percent contingency fee is also included.

Table 1 Cost Estimate	
120-Day PEP	\$10,000.00
Maintenance & Monitoring and Reporting: Year 1	\$5,000.00
Monitoring and Reporting: Year 2	\$4,000.00
Monitoring and Reporting: Year 3	\$3,500.00
Monitoring and Reporting: Year 4	\$3,500.00
Monitoring and Reporting: Year 5	\$5,000.00
Subtotal	\$31,000.00
20 percent contingency fee	\$6,200.00
Total	\$37,200.00

3.0 DESCRIPTION OF THE REVEGETATION SITE

3.1 Site Selection

The revegetation site is located adjacent to an existing patch of San Diego barrel cactus (Figure 3). The site is suitable because it already supports San Diego barrel cactus and will also be preserved in perpetuity as the location will become an open space lot.

3.2 Location and Size of the Revegetation Site

The revegetation area is located on Lot A as shown on Figure 4. Lot A will be conserved in perpetuity by a biological conservation easement (BCE). Six-barrel cactus will be translocated into an area that is approximately 7,200 square feet in size. The translocation site includes an existing patch of two San Diego barrel cactus (Figure 4).

3.3 Functions and Values

The proposed revegetation area currently is comprised of plants that are typical of Diegan coastal sage scrub. This includes California sagebrush (*Artemisia californica*), black sage (*Salvia*

mellifera), and San Diego sunflower (*Bahiopsis laciniata*). The translocation of San Diego barrel cactus into the revegetation area will further enhance the overall quality the habitat in the open space and increase the functions and values of the conserved Diegan coastal sage scrub habitat.

3.4 Present and Proposed Uses

The current land use of the restoration consists of open space areas that are not protected or managed. The approval of the proposed project will create a new open space lot that will be conserved within a BCE. The BCE will conserve and protect the biological resources on-site including the proposed restoration area. Furthermore fencing and signage will be required along the perimeter of the open space. An example of the signage is provided below.

Sensitive Environmental Resources Area Restricted by Easement.

Entry without the express written permission of the County of San Diego is prohibited. To report a violation, or for more information about easement restrictions and exceptions, contact County of San Diego Planning and Development Services.

3.6 Reference Site

The revegetation area contains two existing San Diego barrel cactus. These individuals will be assessed for survivorship over the lifespan of the maintenance and monitoring period. Maintenance activities will be conducted in a manner to decrease overall non-native plant cover and enhance the long-term viability of the of the San Diego barrel cactus that already occur within the revegeation area.

4.0 IMPLEMENTATION PLAN

4.1 Rationale for Expecting Implementation Success

It is anticipated that the revegetation effort will succeed for the following reasons:

- The site currently supports San Diego barrel cactus,
- Open, bare ground areas suitable for translocation are abundant,
- Other succulent plants occur on-site including several individuals of coastal cholla (*Cylindropuntia prolifera*)
- The revegetation site will be protected in perpetuity by an open space designation and an adjacent limited building zone (LBZ),
- Financial assurances shall be in place to ensure that management of the site shall be funded.

4.2 Financial Assurances

The revegetation plan shall be the responsibility of property owner. In accordance with the County's conditions of approval for the Spring Valley Housing project (**Record ID: PDS2019-TM-5636**), a Revegetation Plan shall be provided and approved in order to mitigate species specific mitigation for San Diego barrel cactus.

Should the property be sold, the revegetation plan and subsequent management of the revegetation area shall be transferred to the new owner. Upon acceptance of this plan by the County, a revegetation agreement shall be prepared. The agreement will cover all aspects of this plan and appropriate security shall be provided. The means and amount of the security shall be sufficient to cover the cost of implementation of this plan, including long-term monitoring, and will be determined by the County. A revegetation agreement shall be signed by the property owner following approval of this revegetation plan and accompanied by the required security as agreed upon by the County.

4.3 Schedule

This general description of time periods and resource constraints is provided to assist the applicant in the proper methods to implement a successful San Diego barrel cactus translocation effort.

4.3.1 *Optimum Planting Season*

The timing for salvaging and translocating barrel cacti is not as critical as it may be for other plants and may occur at any time of year. However, planting will be limited to approximately October 15 to February 15 in order to coincide with appropriate moist and cool weather conditions. Planting salvaged barrel cacti directly into open space eliminates the need for extended storage of cacti; however, if environmental conditions are not appropriate for planting at the time of salvage, the cacti will be stored at either on-site or at native plant nursery.

4.4 Site Preparation

4.4.1 Equipment Required

Other than hand tools, no heavy equipment will be required for the translocation effort or the ongoing maintenance.

4.4.2 Site Access

Access to the revegetation area will be from a private road easement that extends from Grand Avenue to Lot 7 (Figure 4).

4.4.5 Start and Completion Dates

Start and completion dates have not been established at this time.

4.4.6 Container Plants

The project only consists of translocating six individual San Diego barrel cactus from the project's impact area to the proposed revegetation area. No further container plants are proposed.

4.4.7 Seed Mixes

The project will not include the application of seed mixes within the revegetation area.

4.4.8 Sources for Plant Materials

If survivorship of translocated San Diego barrel cactus becomes a problem, the revegetation monitor may suggest remedial measures that include purchasing and planting additional barrel cactus on-site. San Diego barrel cactus can be purchased from the following native plant nurseries:

- RECON Native Plants, Inc.
1755 Saturn Boulevard
San Diego, California 92154
619-423-2284
www.reconnativeplants.com
- Tree of Life Nursery
33201 Ortega Highway
San Juan Capistrano, California 92675
949-728-0685
www.californianativeplants.com
- Moosa Creek Nursery
28435 Wilkes Road
Valley Center, California 92082
760-749-3216
www.moosacreeknursery.com
- S and S
6155 Carpinteria Avenue
Carpinteria, California 93013
805-684-0436
www.ssseeds.com

4.5 Planting Plan

The translocation effort will occur prior to any grading associated with the seven residential lots. The first step in translocation is to remove any non-native weeds and thatch from the revegetation area while preserving the native species that may be present. Where necessary, weed whips will be used to cut weedy thatch material that has built up on the soil surface. The thatch will be raked into piles and composted on-site. After the first significant winter rains, newly germinated weeds in the translocation area will receive herbicide applications (glyphosate-based herbicides such as Prosecutor® or Roundup®) prior to planting. The site will be monitored frequently to allow the procedure to be repeated as needed. Weed seedlings will require herbicide treatments before they reach six inches in height or before flowering (especially important for small weed species such as storksbill [*Erodium* spp.]), whichever occurs first.

All cacti will be salvaged from the ground using hand tools to successfully remove the plant and the rootball. The barrel cacti will be bare-rooted, root trimmed, and the plants stored on-site or at a native plant nursery, under shade cloth for one to three weeks, depending on weather conditions and season, to allow the roots to callus. This will prevent rot and encourage protective callus development on freshly exposed surfaces. Once the roots have callused, the barrel cactus will be transplanted.

Care will be taken with each individual to ensure that the cacti are planted only to the depth of the roots. It is important that soil is not allowed to accumulate on the stem of the cacti. Soil accumulation often induces the stems to rot. Following barrel cactus translocation, each translocated barrel cactus will be numbered by the monitoring biologist. The translocated cactus will also be mapped using a sub-meter accurate Global Positioning System (GPS) so they can be relocated. The total number of individuals will be counted when they are planted. These data will be used as a baseline so survivorship in subsequent years may be assessed.

4.5.1.2 *Weed Control*

Weeding and de-thatching will occur as needed within the translocation site. After the first full winter, any weeds present in the translocation area will receive herbicide applications prior to planting. The site will be monitored frequently to allow the procedure to be repeated as needed. After the first significant winter rains, newly germinated weeds in the translocation area will receive herbicide applications (glyphosate-based herbicides such as Prosecutor® or Roundup®) prior to planting. The site will be monitored frequently to allow the procedure to be repeated as needed. Weed seedlings will require herbicide treatments before they reach six inches in height or before flowering (especially important for small weed species such as storksbill [*Erodium* spp.]), whichever occurs first.

Weeding and de-thatching will occur as needed within the translocation site. After the first full winter, any weeds present in the translocation area will receive herbicide applications prior to planting. The site will be monitored frequently to allow the procedure to be repeated as needed.

4.6 Irrigation Plan

San Diego barrel cactus is very drought tolerant and will need very little water after translocation. However, supplemental watering will be given during the first year if winter rainfall is significantly below average and the plants appear drought stressed. If the plants need to be given supplemental water, the soil will be allowed to dry prior to the next watering. If needed, supplemental watering will be done using a water truck or my hand until the plants have become established.

5.0 MAINTENANCE DURING MONITORING

5.1 Maintenance Activities

Maintenance required during monitoring will include weed control and trash removal.

5.1.1 Weed Control

Weed eradication should be conducted as necessary to eliminate or reduce competition from weeds. The revegetation site shall be maintained weed-free during the 120-day PEP. As weeds appear, they will be removed by hand, mechanically, or with herbicides⁴. Mechanical tilling and weed pulling are the preferred methods of weed control. Maintenance personnel shall be trained to distinguish weeds from native target species. The revegetation maintenance contractor is responsible for replanting or reseeding if weeds are not removed on a timely basis⁵.

Weeding shall be performed on a monthly basis during the spring and early summer (April through June) growing season. The revegetation biologist/monitor shall inspect the revegetation site regularly and determine if there is need for additional weeding. The revegetation maintenance contractor shall be responsible for carrying out additional weeding on a timely basis at the written request by the revegetation biologist/monitor. All weed debris shall be removed and disposed of outside of the revegetation area.

5.1.2 Trash Removal

The revegetation maintenance contractor shall provide trash removal once a quarter, or more frequently, as requested by the revegetation biologist/monitor. Trash removal activity shall be

⁴ Herbicides shall be applied only by a licensed applicator.

⁵ Timely basis is understood to be within five days of a written request by the revegetation biologist/monitor.

conducted in such a way as to avoid damage to plantings in the revegetation area. Dead limbs and leaves do not need to be removed from the revegetation area.

6.0 MONITORING PLAN

The revegetation biologist/monitor shall submit a report at the completion of plant installation describing the installation process and beginning the 120-day PEP. At the end of the 120-day PEP, a report shall be prepared describing all inspections and maintenance. The report will request inspection and acceptance of the revegetation site by the County. Upon acceptance by the County, the five-year maintenance and monitoring shall begin; following acceptance, an annual report summarizing maintenance and monitoring activity and an evaluation of success criteria shall be submitted on the anniversary of acceptance of the revegetation site by the County. The evaluation will be based on quantitative sampling performed during the preceding 12 months.

6.1 Performance Standards for Target Dates and Success Criteria

Success criteria are standards to be used to evaluate the success/progress of the revegetation program. The criteria are expressed in terms of percent vegetative cover.

6.1 Years One Through Five Monitoring

One year after planting, the first annual report shall be submitted to the County. Standards for the first year shall be:

- Establishment of translocated cacti
- 100 percent survivorship

Following each year, an annual report will be prepared and submitted to the County. The report shall describe the revegetation site and delineate the site on a large-scale map.

6.2 Remedial Measures

If standards are not met, replanting with container stock purchased from a local native plant nursery will occur.

6.3 Qualitative Surveys

Qualitative surveys shall be conducted every two weeks throughout the 120-day PEP, then monthly for the remainder of the first year. Two types of qualitative assessments—general growth assessments and limited pollinator observations—will be conducted during the translocation effort. Evaluation of plant health and identifying and correcting problems as they arise are necessary for ensuring successful establishment. Following planting, the site will be

monitored biweekly during the initial 120-day PEP. After the PEP, qualitative monitoring will be conducted monthly during the growing season for the remainder of the first year and quarterly for the remainder of the three-year maintenance and monitoring period.

A brief daily monitoring report will be prepared after each visit and submitted to the project owner and the County. The report will address weeding, litter control, and any trespass issues. The report will qualitatively describe the condition of seeded areas and container plants.

6.4 Quantitative Surveys

Quantitative surveys will be conducted annually after the 120-day PEP. A qualitative survey will be conducted in conjunction with the quantitative survey. Sampling will take place in the spring to ensure the best estimate of species composition and relative and absolute cover.

Quantitative surveys will be conducted during the spring to ensure the best representation of species composition. Monitoring may be halted if milestones are met earlier than anticipated. The intent of the quantitative survey is to determine compliance with milestones.

Methodology for Quantitative Surveys

Survivorship Counts

A census of the population will be conducted at the translocation site each year. The first census will occur at least one year after the initial planting, and the second census will occur at least two years after the initial planting. The individuals will be counted and recorded each monitoring year. This assessment will be used to determine the total number of translocated individuals that have survived over the summer dry season. In addition, the areas immediately around the translocated individuals will be searched carefully for volunteer coast barrel cactus. All volunteer plants will be counted and mapped.

Flowering Counts

The second quantitative assessment will be conducted later in the growing season (May-June), when the production of flowers and seed may be observed. Total counts of flowering individuals will be completed at that time. The project biologist will record all observations and include the results in the annual report.

Growth Assessment

The performance of San Diego barrel cacti at the translocation site will be visually assessed to determine the overall plant condition and whether the timing of flower and seed production is similar to the adjacent natural populations. One reference population will be selected from the

surrounding open space. Only a good-quality natural population that is not suffering from substantial weed invasion will be selected as a reference population. In addition, the reference site will also have a similar physical and biological setting as the translocation site. The reference site will be mapped using a Trimble® GPS with sub-meter accuracy, and this information will be included in the annual report.

Pollinator Observations

Pollinator observations will be performed to determine if potential coast barrel cactus pollinators are visiting the translocation site. This will help evaluate the progress of the coast barrel cactus translocation and habitat enhancement effort. If the habitat surrounding the translocation area is enhanced appropriately, it will likely be able to support a sufficiently diverse assemblage of pollinators that will ensure successful pollination and seed production of coast barrel cactus. The production of viable coast barrel cactus is crucial in ensuring the long-term persistence of the translocated population. Observations of pollinators will also help contribute to the overall understanding of the biology and reproduction of this species

7.0 PROJECT COMPLETION

If the project meets the proposed success requirement after five years of monitoring, then the project biologist will provide a letter to the County requesting project completion. If the project is not acceptable, the County will provide a letter to the revegetation biologist/monitor describing problem areas and recommendations for remediation. These recommendations will be implemented, and monitoring will continue as described until the restoration project is accepted.

8.0 CONTINGENCY MEASURES

8.1 Initiating Contingency Procedures

Any significant issue or contingency that arises on the revegetation site (*e.g.*, plant survival, fire, flooding, or unauthorized disturbance) shall be reported in writing to the County within two weeks of the date of the incident. Accompanying the report shall be a plan for remediation with both an implementation and a monitoring schedule. If, upon receipt of any monitoring report, the County determines that the revegetation effort is in danger of not attaining success criteria for the project, the County shall provide to the project owner written notification that the revegetation effort may require remediation. The project owner shall have 30 days to contest or confirm the notification.

If necessary, a representative of the County, the project owner, the revegetation biologist/monitor, and the revegetation maintenance contractor may meet on-site to assess conditions and develop an appropriate remediation plan. Remediation measures may include

reseeding, replanting, substituting different species from those specified by the revegetation plan, revising the irrigation schedule, and extending the monitoring period.

8.2 Funding Mechanism/Bonding

The project owner shall be responsible for all costs associated with the Revegetation. The project owner shall post a bond for the cost of container plant purchase and installation, seed purchase and seeding, maintenance, monitoring, and reporting, as described in this plan, plus an additional 20 percent to provide for contingency measures, if required. The County shall release the bond upon final acceptance of the revegetation project.

9.0 REFERENCES

Klutz Biological Consulting, (2021) Draft Biological Letter Report for Spring Valley Housing Project Record ID: PDS2017-MPA-17-014

U.S.D.A., Soil Conservation Service. (1973). Soil Survey of the San Diego Area, California.