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RE: Biological Resource Letter Report for the Dollar General Commercial Development in Campo, California - Record ID: PDS2019-LDGRMJ-30250, Assessor Parcel Number (APN) 655-120-09-00

The following represents a Biological Letter Report for a commercial building project located at the intersection of Dewey Road and Campo Road in Campo, California (APN 655-120-09-00).

SUMMARY

The proposed project involves the construction of a commercial building on Assessor Parcel Number (APN) 655-120-09-00. The project site is approximately 2.3 acres in size and will be comprised of following elements a graded pad, commercial structure, paved parking lot, retention pond, landscaping, and driveway aprons. No off-site project improvements are proposed or required.

The project is located within lands designated as developed in the Draft East County Multiple Species Conservation Program Plan Study Area (EC MSCP). Vegetation communities and/or land cover types identified on-site included granitic chamise chaparral, non-native grasslands and urban/developed. No sensitive plant or wildlife species were observed during the general or focused surveys.

The project will impact 1.6 acres of granitic chamise chaparral and 0.60-acre of non-native grassland. Project impacts to granitic chamise chaparral and non-native grassland will require habitat-based mitigation. Habitat based mitigation is proposed off-site and will consists of the conservation of 0.3-acre of non-native grassland and 0.8-acre chaparral. No sensitive species were observed on-site during the survey and no sensitive species (plant or wildlife) are anticipated to be impacted by the project. Bird species have the potential to nest within the vegetation on-site and on the ground within the site. To avoid the direct loss of nest(s) protected under the Migratory Bird Treaty Act (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 U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) that the project will not directly or indirectly impact nesting migratory birds and/or raptors.

INTRODUCTION, PROJECT DESCRIPTION, LOCATION AND SETTING

Project Description

The proposed project involves the construction of a commercial building on Assessor Parcel Number (APN) 655-120-09-00. The project site is approximately 2.3 acres in size and will be comprised of following elements a graded pad, commercial structure, paved parking lot, retention pond, landscaping, and driveway aprons. No off-site project improvements are proposed or required.

Project Location

The proposed project is located within the unincorporated portion of San Diego County in the community of Campo (Figure 1). The project is specifically located east of Dewey Road and north of Campo Road (CA-94; Figure 2). The project site is within the boundaries of the Draft East County Multiple Species Conservation Program Plan Study Area (EC MSCP) (Figure 3).

Project Setting

The site is composed of vacant land surrounded by existing residential properties and is bounded by Campo Road to the south. A communication and utility facility are located along the southwestern boundary of the project site and the CAL FIRE Campo Fire Station #40 is located across Campo Road to the south of the site boundary.

The site is shown on the southern portion of the Cameron Corners United States Geologic Service (USGS) 7.5-minute Quadrangle Map. The project location is south of Interstate 8, east of Buckman Springs Road (S-1), and north of Campo Road. The elevation slopes moderately from the northwestern boundary downslope to the southeastern boundary. The approximate elevation ranges from 2,666 feet above mean sea level (AMSL) to 2,631 feet AMSL.

Two soil types have been mapped on-site and they include Calpine coarse sandy loam (CaC), 5 to 9 percent slopes and La Posta loamy coarse sand (LaE2), 5 to 30 percent slopes, eroded (Bowman 1973; SanGIS 2019). The southeastern portion of the site shows sign and evidence of disturbance including minor mowing and overland travel of vehicles.

SITE SURVEY

A general survey of the site was conducted by Klutz Biological Consulting (KBC) in 2019. The survey was conducted by Lindsay Willrick and Korey Klutz on February 8, 2019 between 10:15a.m and 12:45p.m. A search of the California Natural Diversity Database (CNDDB) Cameron Corners 7.5' USGS Quadrangle was also conducted to identify sensitive species known to occur in the general vicinity of the project site.

The survey was conducted by slowly walking meandering transects within, and around the project site where feasible, while recording all plant and wildlife species observed. Although the entire project area was surveyed, some sensitive resources may not have been detected due to the duration and season of the survey event. Please note, any wildlife species that are not active during the day (e.g. strictly nocturnal), that are secretive in their habits, or that use the site only periodically like during nesting may not have been detected during the survey. Focused protocol surveys for the federally Endangered Quino checkerspot butterfly (Quino) were conducted in accordance with the United States Fish & Wildlife survey guidelines once a week from approximately mid-February through mid-May in 2019. Following each focused Quino survey additional time was spent searching the site for special status rare plants.

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

Nomenclature for this report conforms to Jepson Flora Project (2018), for plants, Holland (1986) and Oberbauer (2008) for plant communities and habitat types, American Ornithologists' Union (AOU 1998 and 2004) for birds, Jennings (1983) and Stebbins (2003) for reptiles and amphibians, Baker (2003) for mammals, and Powell (1980) for insects.

Biological Resources Present

The project site is composed of native habitats including chaparral and non-native grassland; and is further surrounded by urban/developed lands.

Regional Context

The project site is located within the Draft ECMSCP in the community of Campo, outside of any adopted or proposed NCCP subareas (Figure 3). Specifically, the Draft ECMSCP designates the project APN as developed and is not being considered a Focused Conservation Area (FCA). Please note that the project site is 0.25 miles south of Campo Indian Reservation and 2.80 miles north of the United States-Mexico international border.

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. The project site and 100-foot buffer contain three distinct habitat types including granitic chamise chaparral, non-native grassland and urban/developed lands (Figure 4). Each of the habitat types are discussed in more detail below and a complete list of botanical resources observed is provided in Attachment A.

Granitic Chamise Chaparral (Habitat Code: 37210; Tier III)

This habitat type is dominated by chamise (*Adenostoma fasciculatum*) with shallower and drier soils composed of a granitic matrix. Chaparral within the project site includes interstitial spaces carpeted with cryptobiotic crusts and annual herbaceous plants. Evidence of mowing was observed along the southern border of the site, especially apparent where perennial buckwheat species were present. Granitic chamise chaparral containing similar species composition extends into the 100-foot buffer and beyond on the northern, eastern, and western boundaries of the site. Areas mapped in Figure 4 as granitic chamise chaparral are dominated by native plant species comprised primarily by chamise, cheat grass (*Bromus tectorum*), Mojave Desert California buckwheat (*Eriogonum fasciculatum* var. *polifolium*), prickly-pear (*Opuntia* sp.), cholla (*Cylindropuntia* sp.), pincushion (*Chaenactis* sp.), and phacelia (*Phacelia* sp.). Smaller amounts of red shank (*Adenostoma sparsifolium*), big sagebrush (*Artemisia tridentata*), common sandaster (*Corethrogyne filaginifolia*), pygmy-weed (*Crassula connata*), woollystar (*Eriastrum* sp.), southern honeysuckle (*Lonicera subspicata*), miniature lupine (*Lupinus bicolor*), phacelia (*Phacelia* sp.), hollyleaf redberry (*Rhamnus ilicifolia*), sugar bush (*Rhus ovata*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), and Mojave yucca (*Yucca schidigera*) were also observed. Approximately 1.6 acres of granitic chamise chaparral occur within the project site.

Non-native grassland (Habitat Code: 42200; Tier III)

This habitat type is characterized by a dominance of annual grass species as well as annual native forbs in years with adequate rainfall. Non-native grassland containing similar species composition extends into the 100-foot buffer and beyond on the northern, southern, and western boundaries of the site. Areas mapped in Figure 4 as non-native grassland are dominated by non-native plant species comprised primarily by cheat grass, redstem filaree (*Erodium cicutarium*), longbeak stork's bill (*Erodium botrys*), shortpod mustard (*Hirschfeldia incana*), and Russian thistle (*Salsola tragus*). Smaller amounts of common sandaster, fiddleneck (*Amsinckia* sp.), gourd (*Cucurbita* sp.), horehound (*Marrubium vulgare*), miniature lupine, and slender woolly buckwheat (*Eriogonum gracile*) were also observed. One mature coast live oak (*Quercus agrifolia*) was observed in the north east corner of the site within this habitat type. The southern portion of the site shows sign of infrequent overland travel of vehicles. Approximately 0.6-acre of non-native grassland occur within the project site.

Urban/developed (Habitat Code: 12000)

Urban/developed lands refer to any built areas that are maintained and are not vegetated.

Within the project site urban/developed lands include neighboring homes, storage sheds, hardscape features, gravel/dirt roads, as wells as paved roads. Within this landcover type, there were areas of ornamental vegetation occurring throughout the southern and eastern 100-foot buffer. Dominant species within the ornamental landcover type include, cheat grass, shortpod mustard, black locust (*Robinia pseudoacacia*), Coulter pine (*Pinus coulteri*), Aleppo pine (*Pinus halepensis*), blue elderberry, Russian thistle, horehound, and ornamental agave (*Agave* sp.). Approximately 0.10-acre of urban/developed occur within the project site.

General Wildlife Observations

The site survey detected the presence of two invertebrate species, twelve bird species and one small mammal species. All species observed are common in native habitats as well as surrounding developed areas and a full compendium of species observed can be found in Attachment B.

Special Status Species

Following is a summary of all sensitive species with potential to occur on the project 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 these factors.

The following were used in the determination of sensitive biological resources: U.S. Fish and Wildlife Service (USFWS; 2008, 2017); California Department of Fish and Game (CDFG; 2018a, 2018b, 2018c, 2018d), County Sensitive Plant and Animal list (County 2010a), California Native Plant Society (CNPS) online inventory (2019), and the California Natural Diversity Database (CNDDB; 2019).

Sensitive Plants

Thirteen special status plant species were identified by the literature search as potentially occurring within the general project vicinity including Tecate cypress (*Hesperocyparis forbesii*), Tecate tarplant (*Deinandra floribunda*), sticky geraea (*Geraea viscida*), San Diego sunflower (*Hulsea californica*), Robinson's pepper grass (*Lepidium virginicum* var. *robinsonii*), southern jewel-flower (*Streptanthus campestris*), Dean's milkvetch (*Astragalus deanei*), Jacumba milkvetch (*Astragalus douglasii* var. *perstrictus*), pride-of-California (*Lathyrus splendens*), Moreno currant (*Ribes canthariforme*), southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*), delicate clarkia (*Clarkia delicata*), and desert beauty (*Linanthus bellus*). Although the project site provides suitable (low) habitat for the majority of these sensitive plant species, none were observed during the initial site survey or during follow up focused rare plant surveys. Tecate cypress and Tecate tarplant do not have potential to occur on-site due to the lack of suitable soils and hydrology and were not observed during the survey (Attachment C).

Sensitive Wildlife

Species identified during the literature search as potentially occurring on-site included: Quino checkerspot (*Euphydryas editha quino*), coast horned lizard (*Phrynosoma blainvillii*), orange-throated whiptail (*Aspidoscelis hyperythra*), two-striped garter snake (*Thamnophis hammondii*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), red diamond rattlesnake (*Crotalus ruber*), Cooper's hawk (*Accipiter cooperii*), prairie falcon (*Falco mexicanus*), least Bell's vireo (*Vireo bellii pusillus*), western bluebird (*Sialia mexicana*), turkey vulture (*Cathartes aura*), coastal rosy boa (*Lichanura trivirgata roseofusca*), small-footed myotis (*Myotis ciliolabrum*), sharp-shinned hawk (*Accipiter striatus*), red-shouldered hawk (*Buteo lineatus*), San Diego desert woodrat (*Neotoma lepida intermedia*) and Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*). These species have the potential to occur because they have been previously identified in close proximity to the project site. Although the project site provides suitable habitat for these sensitive wildlife species, none were observed during the site surveys or during focused surveys for Quino (Attachment C).

Large Mammals

Due to the proximity of the site to CA-94 (Campo Road) large mammals are not anticipated to routinely utilize the habitats on-site.

Wildlife Species Indicated as Having Moderate or High Potential to Occur

Quino Checkerspot Butterfly Federally Endangered, MSCP Narrow Endemic, and San Diego County Group I

Quino Checkerspot Butterfly are known to inhabit grasslands, juniper woodland, vernal pools, meadows, lake margins, and open scrub and chaparral communities. Larval stages are supported by openings in plant communities with rocky substrate often including cryptobiotic crusts with close proximity to host plants. Larval host plants for this butterfly species includes dotseed plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), Coulter's snapdragon (*Antirrhinum coulterianum*), rigid bird's beak (*Cordylanthus rigidus*), and/or owl's clover (*Castilleja exserta*). Nectar sources from plant species with short corolla tubes are required to support adult butterflies as well as open areas with rocky substrate to facilitate mating, basking, and movement corridors within the habitat structure. Granitic chamise chaparral habitat on-site provides suitable (moderate) habitat for this species. Quino checkerspot butterfly have moderate potential to occur because they have been previously identified in close proximity to the project site. A search of the CNDDB Cameron Corners 7.5' USGS Quadrangle identified four locations within three to four miles south of the project site where Quino checkerspot butterflies were observed in 2008. However, focused surveys for Quino were conducted in 2019 and no Quino were observed on-site (Attachment D). Quino is presumed to be absent from the property.

Raptor Nesting and Foraging

One coast live oak occurring on-site and mature trees adjacent to the project site (primarily pine species) support potential raptor nesting sites. Raptors are large predatory or scavenging 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 overall,

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).

Migratory Bird Treaty Act

On-site bird species have the potential to nest within the granitic chamise chaparral habitat, on the ground within the non-native grassland habitat. Nesting activity also has the potential to occur within the 100-foot buffer in any shrubs or tree strata. Active bird nests are protected under the Migratory Bird Treaty Act (MBTA).

Jurisdictional Wetlands and Waterways

No jurisdictional waters or wetlands occur within or immediately adjacent to the project site.

Other Unique Features/Resources

Wildlife Corridors and Linkages

No regional wildlife corridors or regional linkages occur within the project site or adjacent to the project site. The EC MSCP maps the project area as developed and not part of a Focused Conservation Area (FCA).

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 elevation slopes moderately from the northwestern boundary downslope to the southeastern boundary. The approximate elevation ranges from 2,666 feet AMSL to 2,631 feet AMSL (Figure 2). One small granitic outcrop is located in the southeastern quadrant of the property site surrounding a wooden utility pole. The project site does not contain any unique topographic or unique connectivity areas.

SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

The project site is located within the County of San Diego's Draft ECMSCP. The impact analysis and associated mitigation requirements are consistent with the County of San Diego's Biological Guidelines and the Draft EC MSCP. Please note that the project site is mapped as a developed area within the Draft ECMSCP and is not part of a Focused Conservation Area (FCA).

Vegetation Communities

The proposed project would impact 0.6-acre of non-native grassland and 1.6 acres of granitic chamise chaparral habitat within the project site. Impacts to non-native grasslands and granitic chamise chaparral would be significant and would require mitigation. Impacts to non-native grassland are proposed to be mitigated at a 0.5:1 ratio and impacts to granitic chamise chaparral

are proposed to be mitigated at a 0.5:1 ratio. Impacts to urban/developed lands would not be significant and would not require mitigation.

Table 1. Project Impacts to Vegetation Communities

Habitat Type	Acres within the Project site (Acres)	Impacts within Project Footprint (Acres)	Mitigation Ratio	Mitigation Acreage
Non-native grassland	0.60	0.60	0.5:1	0.30
Granitic chamise chaparral	1.60	1.60	0.5:1	0.80
Urban/developed	0.10	0.10	NA	NA
Total	**2.30**	**2.30**	-	**1.10**

Impacts to Special Status Species

The loss of non-native grassland and granitic chamise chaparral, which supports reptiles and small mammals, would potentially impact common or special status avian species which may forage on-site. However, no special status plant or wildlife species were observed on the site and, therefore, no impacts would occur as a result of the implementation of this project. In addition, the project site has the potential to support nesting avian species. A preconstruction nesting bird survey will be required to ensure the project does not directly or indirectly impact MBTA bird species. Protocol Quino Checkerspot Butterfly surveys were conducted, and no Quino Checkerspot Butterflies were observed.

Impacts Wildlife Movement and Nursery Sites

The project site does not contain any wildlife movement corridors or wildlife nursery sites.

Impacts to Riparian Habitats and Sensitive Natural Communities

The project site does not contain any riparian habitat or sensitive natural communities. Impacts will not occur to riparian habitat or sensitive natural communities.

Impacts to Federal Wetlands

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

Impacts to Local Plans, Ordinances and Adopted Plans

Based upon the County Guidelines for Determining Significance – 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 does not contain any coastal sage scrub habitat. The project would not significantly impact coastal sage scrub outside of the MSCP.

B. The project would preclude or prevent the preparation of the subregional Natural Communities Conservation Planning Process (NCCP). – The project is located in the Draft ECMSCP and designated as developed lands. 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 does not contain any coastal sage scrub habitat. 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 Draft ECMSCP. 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 not located in the South County MSCP and is not subject to the BRCA or BMO requirements. 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 not located in the South County MSCP and is not subject to BMO requirements. Implementation of 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. The project site is not located in the South County MSCP and is not subject to BMO narrow endemic species requirements. 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 2.2 acres of habitat. No sensitive 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). The project 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 and the fact that the project site is isolated from other habitat patches the loss of 0.6-acre of non-native grassland and 1.6 acres of granitic chamise chaparral habitat are not anticipated to result in a significant cumulative impact. Furthermore, habitat impacts will be mitigated in accordance with County guidelines.

MITIGATION

As detailed previously, the project will impact 0.60-acre of non-native grassland requiring mitigation at a ratio of 0:5:1. The project will also impact 1.6 acres of granitic chamise chaparral requiring mitigation at a ratio of 0.5:1. Mitigation will be accomplished through the off-site purchase of 0.3-acre of non-native grassland and 0.8-acre of chaparral within a County approved mitigation bank. Specifically, the project is proposing to purchase mitigation credits at the Cleveland Corridor Mitigation Bank located in Ramona, California. Mitigation credits will include 0.3 acre of non-native grassland and 0.8 acre of chaparral habitat. The chaparral habitat at the Cleveland Corridor Mitigation Bank is similar in composition and overall habitat sensitivity as the granitic chamise chaparral found within the study area and will fully compensate for the proposed project impacts.

Although no nests were observed, the project site contains potential nesting habitat for bird

species protected under the MBTA. 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 raptor 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.

Standard siltation and erosion control Best Management Practices (BMPs) will be implemented during construction, including boundary silt fencing, gravel bags, fiber rolls, weed-free straw wattles and mulch, and slope stabilization. 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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Preparer and Persons/Organizations Contacted

Prepared by:

Korey Klutz, County Approved Biologist

ATTACHMENTS:
Figure 1 Regional Vicinity
Figure 2 Project Vicinity
Figure 3 Draft ECMSCP
Figure 4 Biological Resources
Figure 5 Project Impacts
Attachment A Observed Species List - Flora
Attachment B Observed Species List - Fauna
Attachment C Special Status Species with Potential to Occur
Attachment D 2019 Focused Quino Survey Report

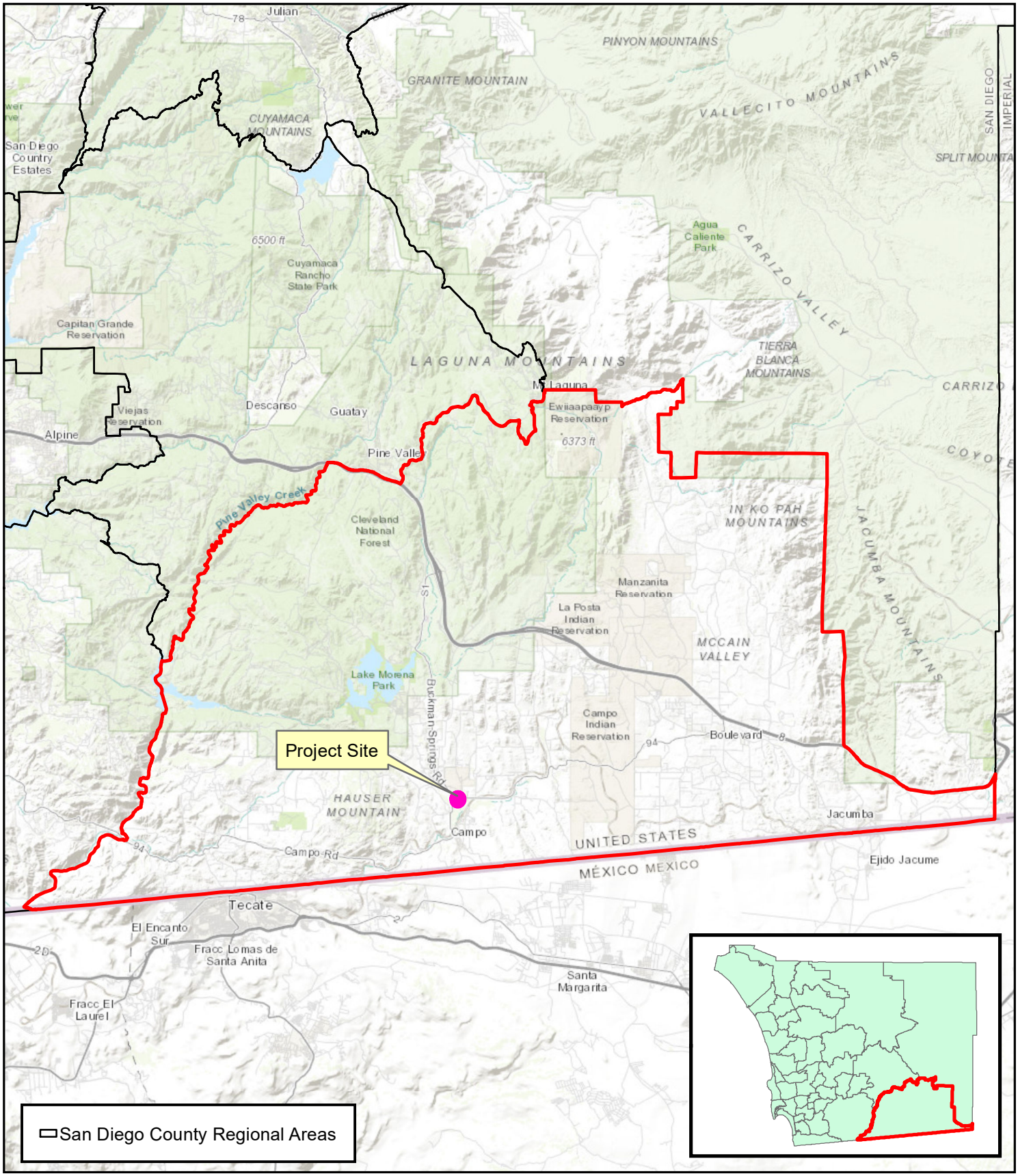

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Figure 1
Regional Vicinity

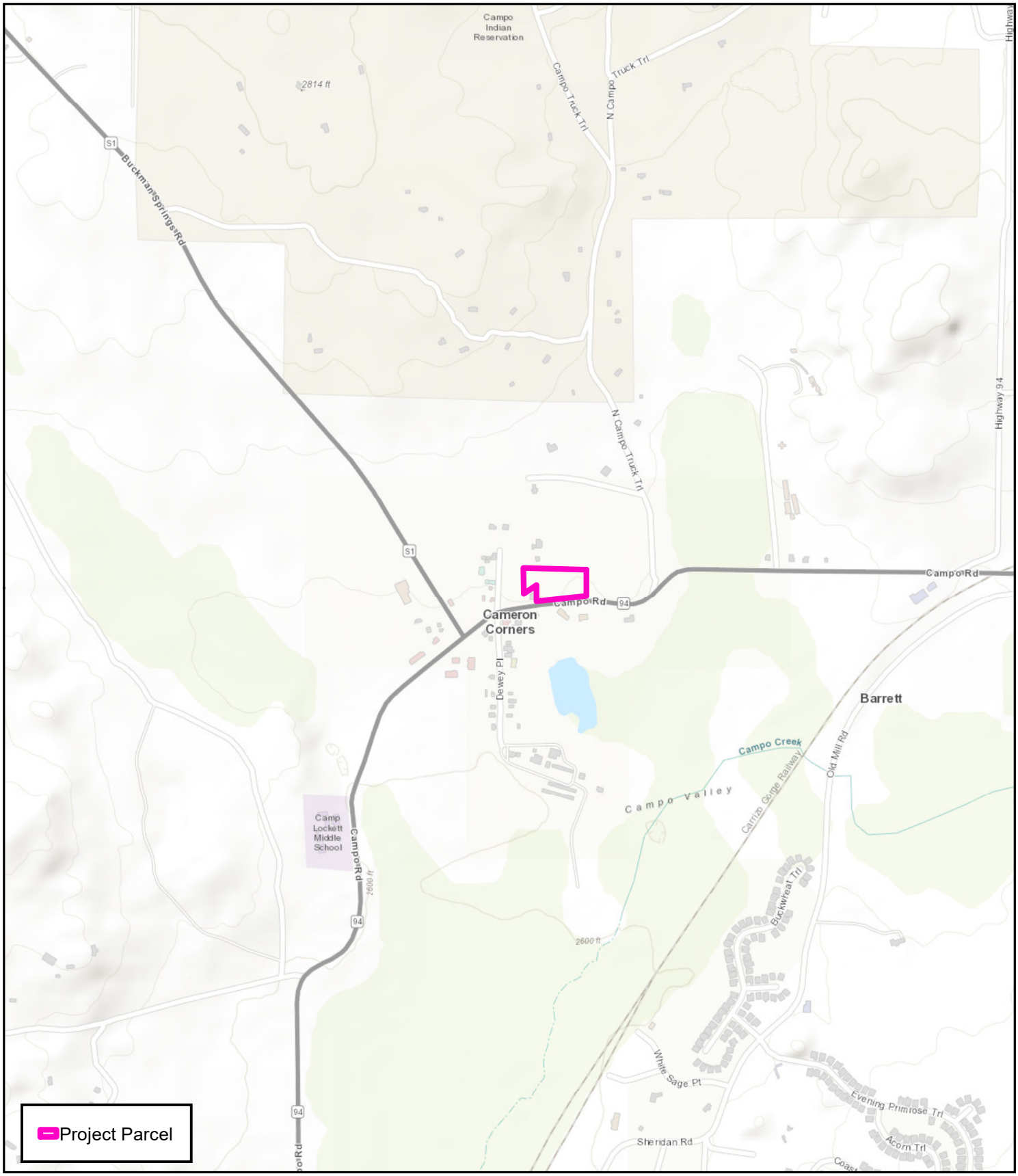

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Figure 2
Project Vicinity

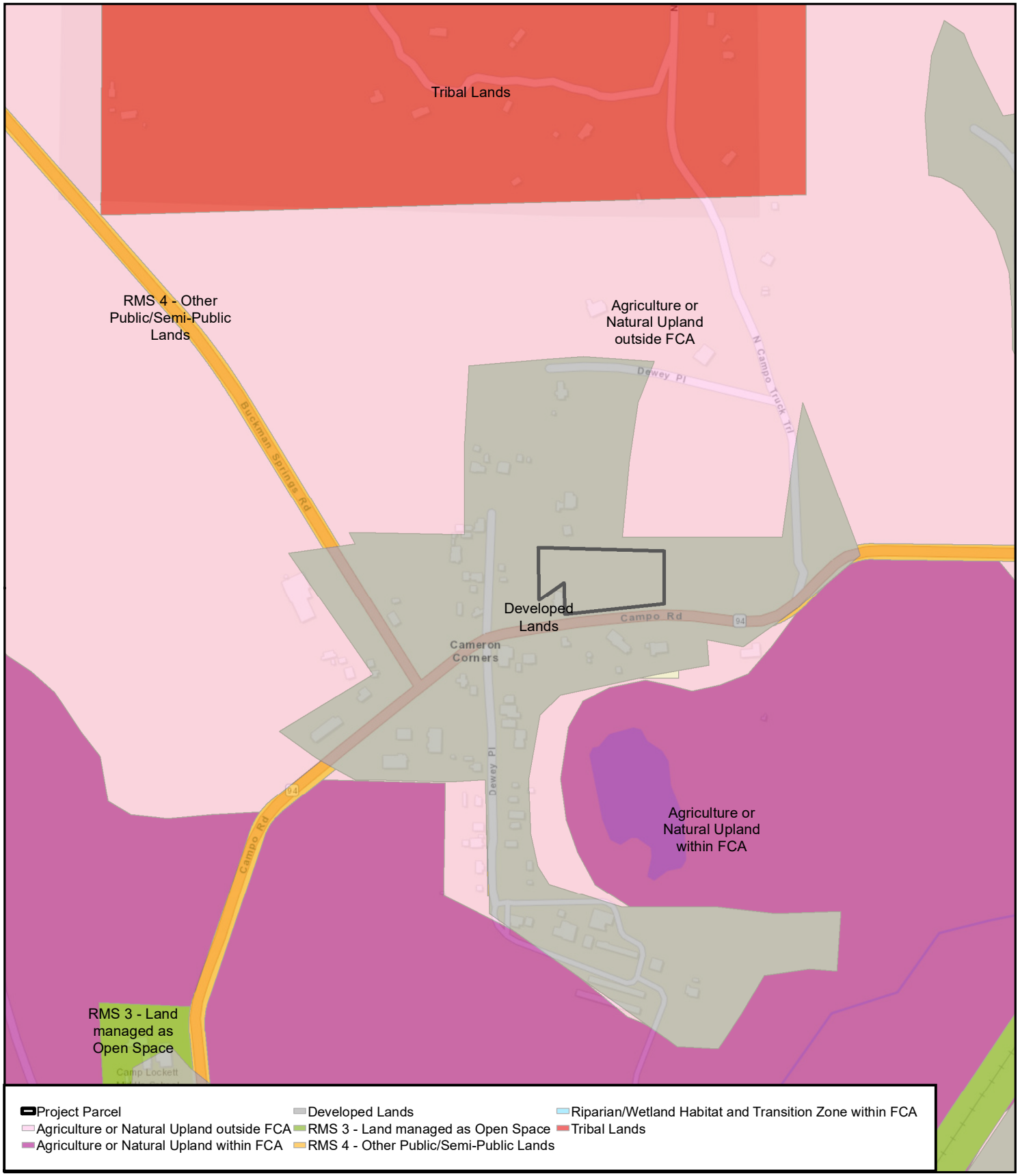

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Figure 3
East County Multiple Species Conservation Program

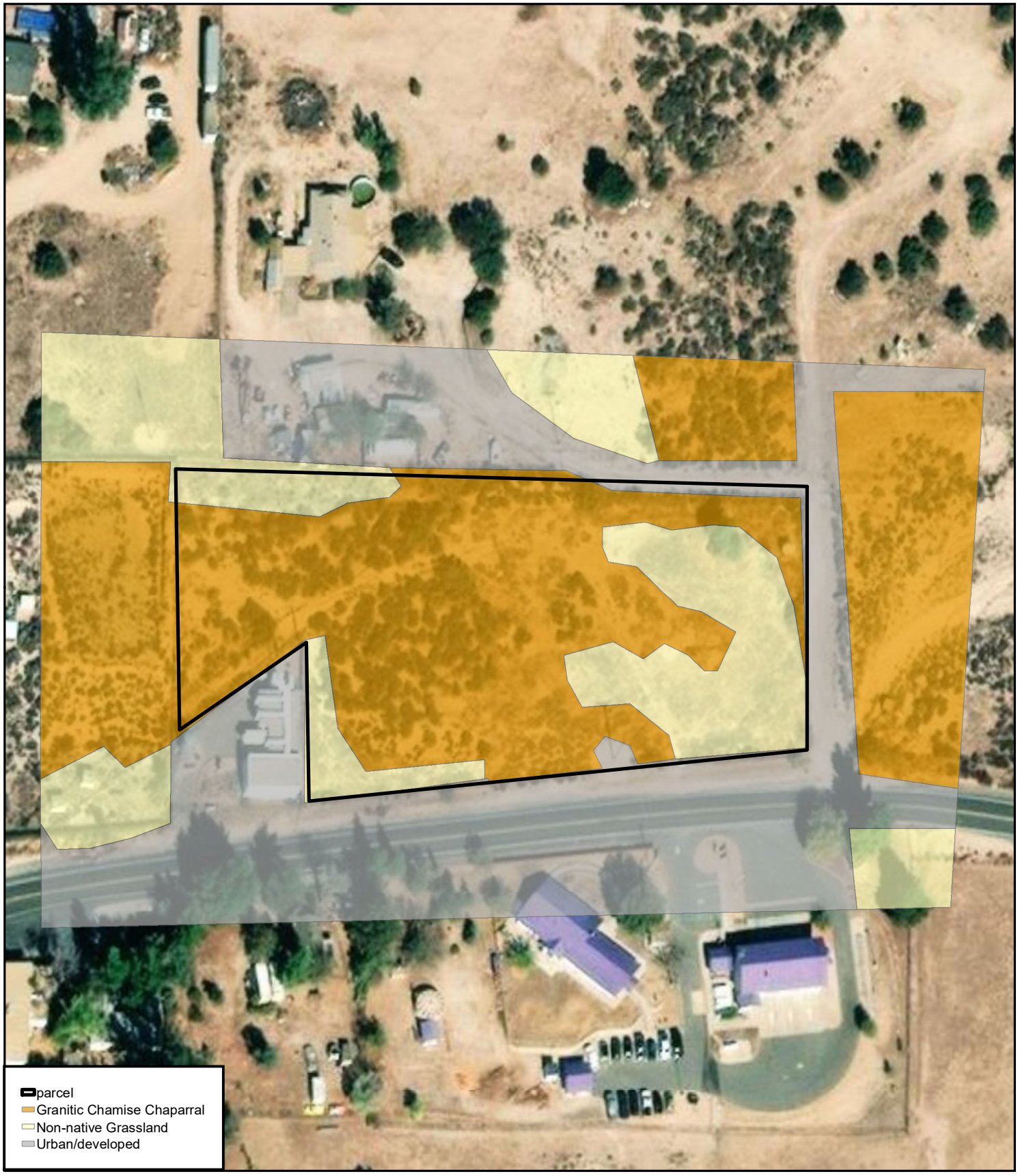

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Figure 4
Biological Resources

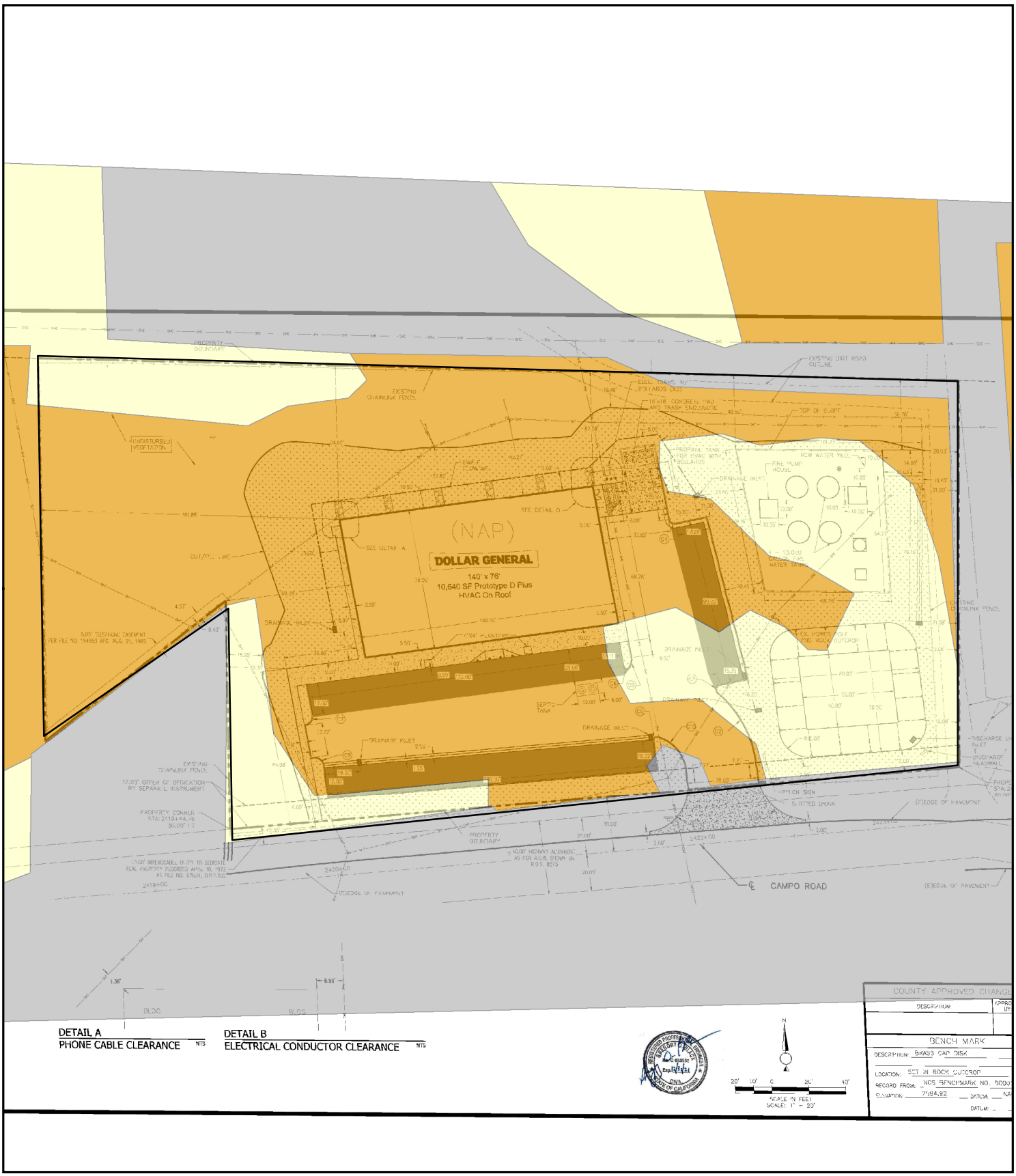

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Figure 5
Project Impacts

Appendix A: Observed Species List - Flora

Scientific Name	Common Name	Habitat Observed
GYMNOSPERMS		
Pinaceae - Pine family		
Pinus coulteri	Coulter pine	U/D
**Pinus halepensis*	Aleppo Pine	U/D
EUDICOTS		
Adoxaceae - Muskroot family		
Sambucus nigra ssp. caerulea	Blue elderberry	CHAP, U/D
Anacardiaceae - Sumac Or Cashew family		
Rhus ovata	Sugar bush	CHAP
Asteraceae - Sunflower family		
Artemisia tridentata	Big sagebrush	CHAP
Chaenactis sp.	Pincushion	CHAP
Corethrogyne filaginifolia	Common sandaster	CHAP, NNG
Boraginaceae - Borage family		
Amsinckia sp.	Fiddleneck	NNG
Phacelia sp.	Phacelia	CHAP
Brassicaceae - Mustard family		
**Hirschfeldia incana*	Shortpod mustard	NNG, U/D
Cactaceae - Cactus family		
Cylindropuntia sp.	Cholla	CHAP
Opuntia sp.	Prickly-pear	CHAP
Caprifoliaceae - Honeysuckle family		
Lonicera subspicata	Southern honeysuckle	CHAP
Chenopodiaceae - Goosefoot family		
**Salsola tragus*	Russian thistle	NNG, U/D
Crassulaceae - Stonecrop family		
Crassula connata	Pygmy-weed	CHAP
Cucurbitaceae - Gourd family		
Cucurbita sp.	Gourd	NNG
Fabaceae - Legume family		
Lupinus bicolor	Miniature lupine	CHAP, NNG
**Robinia pseudoacacia*	Black locust	U/D
Fagaceae - Oak family		
Quercus agrifolia	Coast live oak	NNG
Geraniaceae - Geranium family		
**Erodium botrys*	Longbeak stork's bill	NNG
**Erodium cicutarium*	Redstem filaree	NNG
Lamiaceae - Mint family		

Appendix A: Observed Species List - Flora

**Marrubium vulgare*	Horehound	NNG, U/D
Polemoniaceae - Phlox family		
Eriastrum sp.	Woollystar	CHAP
Polygonaceae - Buckwheat family		
Eriogonum fasciculatum var. polifolium	Mojave desert California buckwheat	CHAP
Eriogonum gracile	Slender woolly buckwheat	NNG
Rhamnaceae - Buckthorn family		
Rhamnus ilicifolia	Hollyleaf redberry	CHAP
Rosaceae - Rose family		
Adenostoma fasciculatum	Chamise	CHAP
Adenostoma sparsifolium	Red shank	CHAP
MONOCOTS		
Agavaceae - Century Plant family		
**Agave sp.*	Agave	U/D
Yucca schidigera	Mojave yucca	CHAP
Poaceae - Grass family		
**Bromus tectorum*	Cheat grass	CHAP, NNG, U/D

Chaparral = CHAP
Non-native Grassland = NNG
Urban/Developed = U/D

Appendix B: Observed Species List - Fauna

Scientific Name	Common Name	Special Status and Detection Methodology	Habitat Observed
INVERTEBRATES			
Insects			
**Apis mellifera*	Honey Bee	None, Visual	CHAP, NNG, U/D
Moths, Skippers and Butterflies			
Vanessa cardui	Painted Lady	None, Visual	CHAP
VERTEBRATES			
Birds			
Buteo jamaicensis	Red-tailed Hawk	None, Visual	Flyover
**Streptopelia decaocto*	Eurasian Collared-Dove	None, Visual	Flyover
Calypte anna	Anna's Hummingbird	None, Visual	Flyover
Melanerpes formicivorus	Acorn Woodpecker	None, Visual	U/D
Aphelocoma californica	California Scrub-Jay	None, Visual	CHAP
Corvus brachyrhynchos	American Crow	None, Visual	Flyover
**Sturnus vulgaris*	European Starling	None, Visual	Flyover
Melozone crissalis	California Towhee	None, Aural	CHAP
Junco hyemalis	Dark-eyed Junco	None, Aural	U/D
Sturnella neglecta	Western Meadowlark	None, Visual	Flyover
Carpodacus mexicanus	House Finch	None, Visual	U/D
**Passer domesticus*	House Sparrow	None, Visual	U/D
Mammals			
Sylvilagus audubonii	Desert Cottontail	None, Visual	CHAP, NNG, U/D

Granitic Chamise Chaparral = CHAP
Non-native Grassland = NNG
Urban/Developed = U/D

Appendix C: Special Status Species with Potential to Occur

Common Name	Scientific Name	Special Status	San Diego County Listing	Habitat Requirements	PTO
INVERTEBRATES					
Moths, Skippers and Butterflies					
Quino Checkerspot	*Euphydryas editha quino*	FE	SDC Group I	Inhabit grasslands, juniper woodland, vernal pools, meadows, lake margins, and open scrub and chaparral communities. Host plants include *Plantago erecta* , *P* . *patagonica* , *Antirrhinum coulterianum* , *Cordylanthus rigidus* , and/or *Castilleja exserta* .	Not detected, suitable (moderate) habitat does occur on site. Focused surveys were conducted but this species was not observed.
VERTEBRATES					
Reptiles					
Blainville's Horned Lizard	*Phrynosoma blainvillii*	CSC	SDC Group II	Prefers open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains from sea level to 8,000 ft; requires abundant ant colonies for foraging.	Not detected, suitable (low) habitat does occur on site.
Belding's Orange-throated Whiptail	*Aspidoscelis hyperythra beldingi*	WL	SDC Group II	Floodplains or terraces along streams and in low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats. Closely tied to coastal sage scrub and chaparral habitats from sea level to 2,000 ft.	Not detected, suitable (low) habitat does occur on site.
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	CSC	SDC Group II	Found in arid and semiarid desert to open woodlands where the vegetation is sparse to allow for greater mobility (running) from sea level to 6,986 ft.	Not detected, suitable (low) habitat does occur on site.

Coastal Rosy Boa	*Lichanura trivirgata roseofusca*	None	SDC Group II	Typically occurs in rocky areas in coastal sage scrub, chaparral, and desert scrub. Often associated with riparian areas, although does not require permanent water source.	Not detected, suitable (low) habitat does occur on site.
Two-striped Garter Snake	*Thamnophis hammondii*	CSC	SDC Group I	Species is highly aquatic and is found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland and coniferous forest. Associated with permanent and semi-permanent water bordered by dense vegetation in a variety of habitats from sea level to 8,000 ft.	Not detected, suitable habitat does not occur on site.
Red Diamond Rattlesnake	*Crotalus ruber*	CSC	SDC Group II	Inhabits arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland and cultivated areas. Prefers rocky areas with dense vegetation from Southern California to Baja California, Mexico.	Not detected, suitable (low) habitat does occur on site.
Birds					
Turkey Vulture	*Cathartes aura*	None	SDC Group I	Open areas including mixed farmland, forest, and rangeland, especially within a few miles of rocky or wooded areas. Rocky outcroppings, cliffs, and dry forests provide nesting sites, while open areas act as foraging habitat.	Not detected, suitable (low) habitat does occur on site.
Sharp-shinned Hawk	*Accipiter striatus*	WL	SDC Group I	A fairly common migrant and winter resident in San Diego. Breeds in young coniferous forests with high canopies. During winter this species utilizes forest edges and somewhat open habitats for foraging as well as suburban areas with bird feeders.	Not detected, suitable (low) habitat does occur on site.
Cooper's Hawk	*Accipiter cooperii*	WL	SDC Group I	A resident of riparian deciduous habitats and oak woodlands but in recent times has become adapted to urban park environments.	Not detected, suitable (low) habitat does occur on site.
Red-shouldered Hawk	*Buteo lineatus*	None	SDC Group I	Inhabits forests with open understory, especially bottomland hardwoods, riparian areas, and flooded swamps for nesting and foraging.	Not detected, suitable (low) habitat does occur on site.

Prairie Falcon	*Falco mexicanus*	WL	SDC Group I	Associated with open grasslands and scrublands with cliffs and steep terrain for nesting substrate. Foraging habitat for this species consists primarily of grasslands and other open habitats.	Not detected, suitable (low) habitat does occur on site.
Least Bell's Vireo	*Vireo bellii pusillus*	FE, SE	SDC Group I, NE	Breed and forage in riparian habitat either near water or in dry portions of river bottoms; nests along margins of bushes and forages low to the ground; may also be found using mesquite and arrow weed in desert canyons.	Not detected, suitable habitat does not occur on site.
Western Bluebird	*Sialia mexicana*	None	SDC Group II	Breeds and forages in open coniferous and deciduous woodlands, wooded riparian areas, grasslands, farmlands, and edge and burned areas. Nests in cavities.	Not detected, suitable (low) habitat does occur on site.
Mammals					
Small-footed Myotis	*Myotis ciliolabrum*	WBWG:M	SDC Group II	Found throughout most of western North America, from southwestern Canada south into Mexico. There is not much information on the habitat requirements of this species, but it has been documented under rock slabs and in crevices, mine tunnels, under loose tree bark, and in buildings.	Not detected, suitable (low) habitat does occur on site.
Northwestern San Diego Pocket Mouse	*Chaetodipus fallax fallax*	CSC	SDC Group II	Sandy herbaceous areas in coastal scrub, chaparral, sagebrush, deserts scrub and washes, and annual grassland.	Not detected, suitable (low) habitat does occur on site.
San Diego Desert Woodrat	*Neotoma lepida intermedia*	CSC	SDC Group II	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. Moderate to dense canopies preferred. Particularly abundant in rock outcrops and rocky cliffs and slopes. Elevational range from sea level to 8500 ft.	Not detected, suitable (low) hab+A1:F24itat does occur on site.

Common Name	Scientific Name	Special Status	San Diego County Listing	Habitat Requirements	PTO
GYMNOSPERMS					
Cupressaceae - Cypress family					
Tecate cypress	*Hesperocyparis forbesii*	CRPR 1B.1	County List A	Evergreen tree. Clay, gabbroic, or metavolcanic soils within closed-cone coniferous forest and chaparral; 262–4,921 ft. Cone production: variable based on rainfall	Not detected, suitable soils do not occur on site.
EUDICOTS					
Asteraceae - Sunflower family					
Tecate tarplant	*Deinandra floribunda*	CRPR 1B.2	County List A	Annual herb. Chaparral and coastal sage scrub, also in arroyos; 230–4,002 ft. Blooming period: August–October	Not detected, suitable mesic habitat does not occur on site.
Sticky geraea	*Geraea viscida*	CRPR 2.3	County List B	Perennial herb. chaparral, often in disturbed areas; 1,476–5,577 ft. Blooming period: April–June	Not detected, suitable (low) habitat does occur on site.
San Diego sunflower	*Hulsea californica*	CRPR 1B.3	County List A	Perennial herb. Open and/or burned sites in chaparral, and upper and lower montane coniferous forest; 3,001–9,561 ft. Blooming period: April–June	Not detected, suitable (low) habitat does occur on site.
Brassicaceae - Mustard family					
Robinson pepperweed	*Lepidium virginicum* ssp. *robinsonii*	CRPR 4.3	County List A	Annual herb. Openings in chaparral and sage scrub; below 2,900 ft. Blooming period: January–July	Not detected, suitable (low) habitat does occur on site.
Southern jewel-flower	*Streptanthus campestris*	CRPR 1B.3	County List A	Perennial herb. Rocky areas in chaparral, lower montane coniferous forest, pinyon and juniper woodland; 2,953–7,546 ft. Blooming period: April–July	Not detected, suitable (low) habitat does occur on site.
Fabaceae - Legume family					
Dean's milkvetch	*Astragalus deanei*	CRPR 1B.1	County List A	Perennial herb. Open shrubby slopes, coastal sage scrub, chaparral, Cismontane woodland, riparian forest, and sandy washes; 246–2,279 ft. Blooming period: February–May	Not detected, suitable (low) habitat does occur on site.
Jacumba milkvetch	*Astragalus douglasii* var. *perstrictus*	CRPR 1B.2	County List A	Perennial herb. Rocky areas in chaparral, Cismontane woodland, pinyon and juniper woodland, riparian scrub, and grassland; 2,953–4,493 ft. Blooming period: April–June	Not detected, suitable (low) habitat does occur on site.
Pride-of-California	*Lathyrus splendens*	CRPR 4.3	County List D	Perennial herb. Chaparral; 656–5,002 ft. Blooming period: March–June	Not detected, suitable (low) habitat does occur on site.
Grossulariaceae - Gooseberry family					
Moreno currant	*Ribes canthariforme*	CRPR 1B.3	County List A	Deciduous shrub. Chaparral and riparian scrub; 1,115–3,937 ft. Blooming period: February–April	Not detected, suitable (low) habitat does occur on site.
Lamiaceae - Mint family					
Southern mountains skullcap	*Scutellaria bolanderi* ssp. *austromontana*	CRPR 1B.2	County List A	Perennial rhizomatous herb. Mesic embankments of montane creeks, mesic chaparral, mesic cismontane woodland, and mesic lower montane coniferous forest; 1,394–6,562 ft. Blooming period: June–August	Not detected, suitable (low) habitat does occur on site.
Onagraceae - Evening Primrose family					
Delicate clarkia	*Clarkia delicata*	CRPR 1B.2	County List A	Annual herb. Chaparral, foothill woodland; 0–3,200 ft. Blooming period: April–June	Not detected, suitable (low) habitat does occur on site.
Polemoniaceae - Phlox family					
Desert beauty	*Linanthus bellus*	CRPR 2.3	County List B	Annual herb. Sandy soils in chaparral; 3,280–4,592 ft. Blooming period: April–May	Not detected, suitable (low) habitat does occur on site.

KLUTZ BIOLOGICAL CONSULTING

June 20, 2019

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

RE: 2019 USFWS Focused Presence/Absence Surveys for Quino Checkerspot Butterfly (*Euphydryas editha quino*) in support of the Dollar General Commercial Development in Campo, California - Record ID: PDS2018-LDMTG-00033, Assessor Parcel Number (APN) 655-120-09-00

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) 655-120-09-00 located in Campo, California (an unincorporated community within the County of San Diego). Focused surveys were conducted by Klutz Biological Consulting (KBC) under Threatened and Endangered Species Permits TE 036065-3, and TE-61175B-0.

PROJECT LOCATION

The proposed project is located within the unincorporated portion of San Diego County in the community of Campo (Figure 1). The project is specifically located east of Dewey Road and north of Campo Road (CA-94; Figure 2). The project site is within the boundaries of the Draft East County Multiple Species Conservation Program Plan Study Area (ECMSCP) (Figure 3).

PROJECT DESCRIPTION

The proposed project includes the construction of a new commercial building, paved parking lot, retention pond, landscaping, and driveway aprons.

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 27, 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 11 site visits were conducted between February 27 and May 10, 2019, by KBC biologists Lindsay Willrick (TE-61175B-0) (Table 1).

Table 1 Survey Condition Summary

Survey Number	Survey Date	Surveyor	Survey Hours
#1	Survey conditions were not within Protocol.	NA	NA
#2	2/27/2019	Lindsay Willrick	1200-1315
#3	3/13/2019	Lindsay Willrick	0830-0930
#4	3/17/2019	Lindsay Willrick	1200-1300
#5	3/24/2019	Lindsay Willrick	1700-1800
#6	3/31/2019	Lindsay Willrick	0845-0945
#7	4/9/2019	Lindsay Willrick	0930-1100
#8	4/14/2019	Lindsay Willrick	1445-1545
#9	4/20/2019	Lindsay Willrick	1545-1645
#10	4/28/2019	Lindsay Willrick	1415-1515
#11	5/5/2019	Lindsay Willrick	1630-1730
#12	5/10/2019	Lindsay Willrick	1720-1820

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 11 surveys are presented in field forms that are provided as Attachment A (Survey Forms).

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*). A list of all butterflies observed during the survey effort is included within Attachment A (Survey Forms).

Two small, low density Quino host plant patches were observed during the survey effort (Figure 3). Nectar plants observed were also limited and included mustard (*Brassica* sp.), fiddleneck (*Amsinckia intermedia; A. menziesii*), and 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 including host plants flourished throughout San Diego County.

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 5). Adult Quino were first reported on February 24th, 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.

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)

ATTACHMENTS:

Figure 1 Regional Vicinity
Figure 2 Project Vicinity
Figures 3 Quino Survey Area
Attachment A Survey Forms

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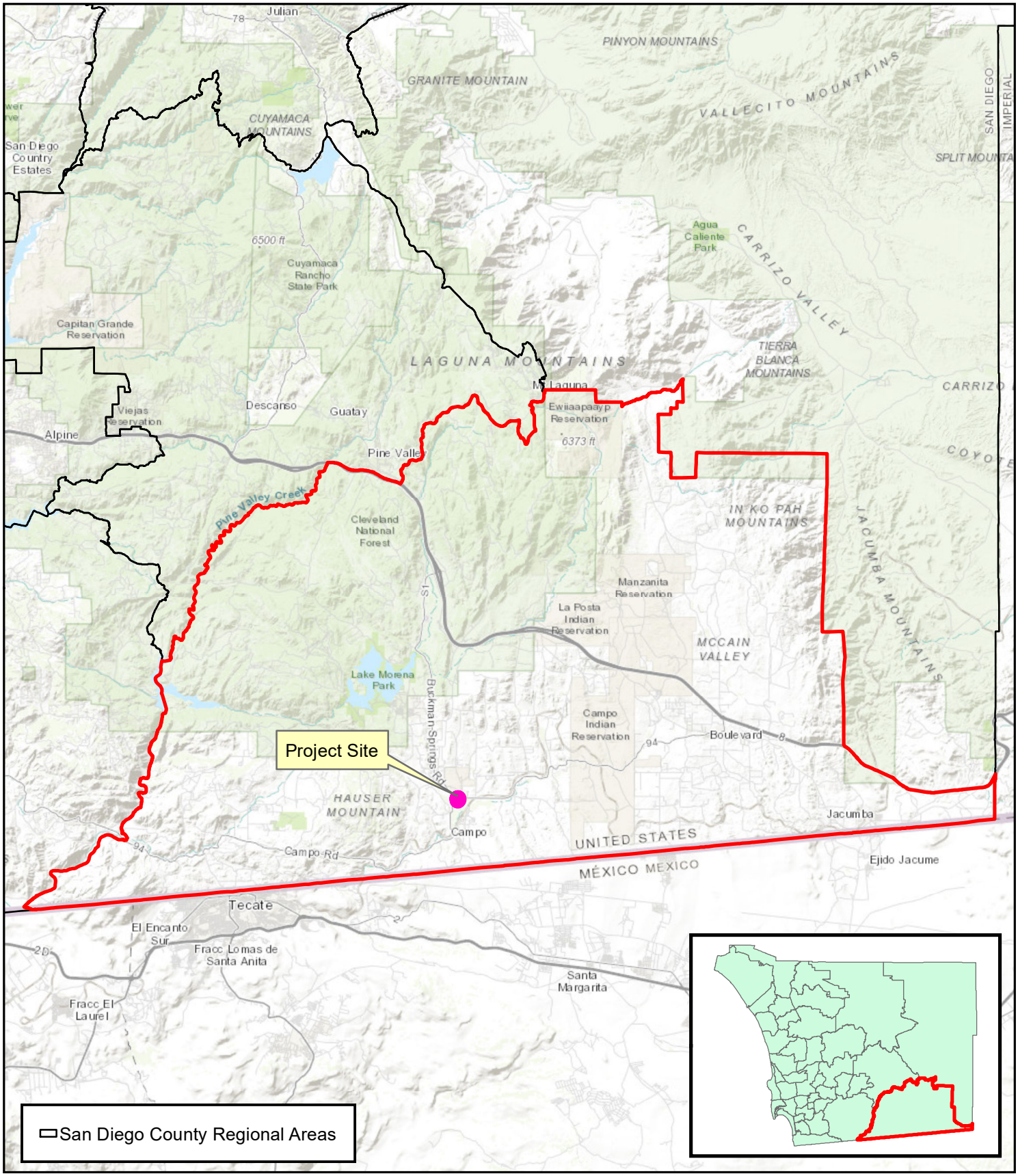

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Date Printed: 3/16/2020	Author: Korey Klutz

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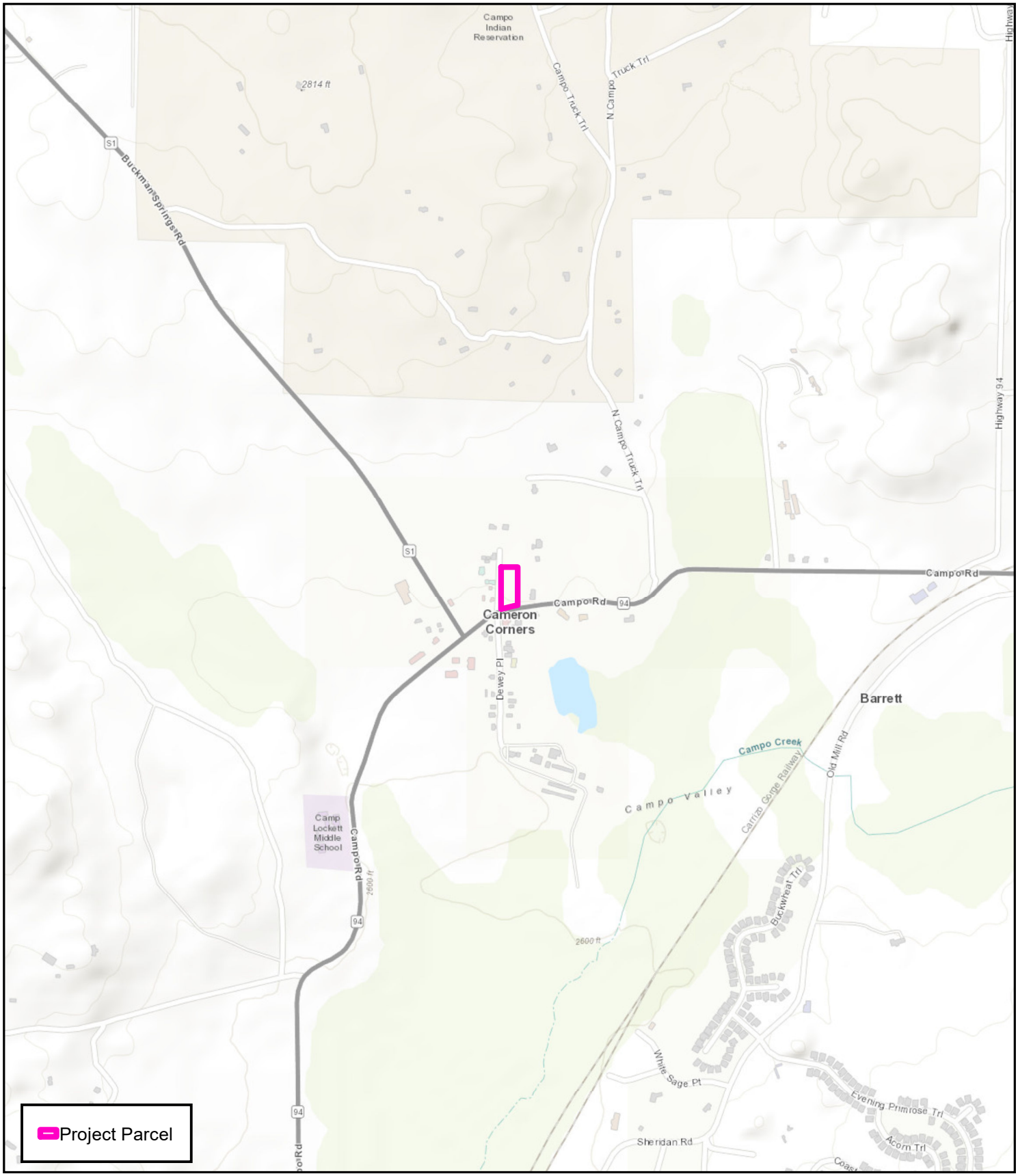
Figure 1
Regional Vicinity



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Date Printed: 3/16/2020	Author: Korey Klutz

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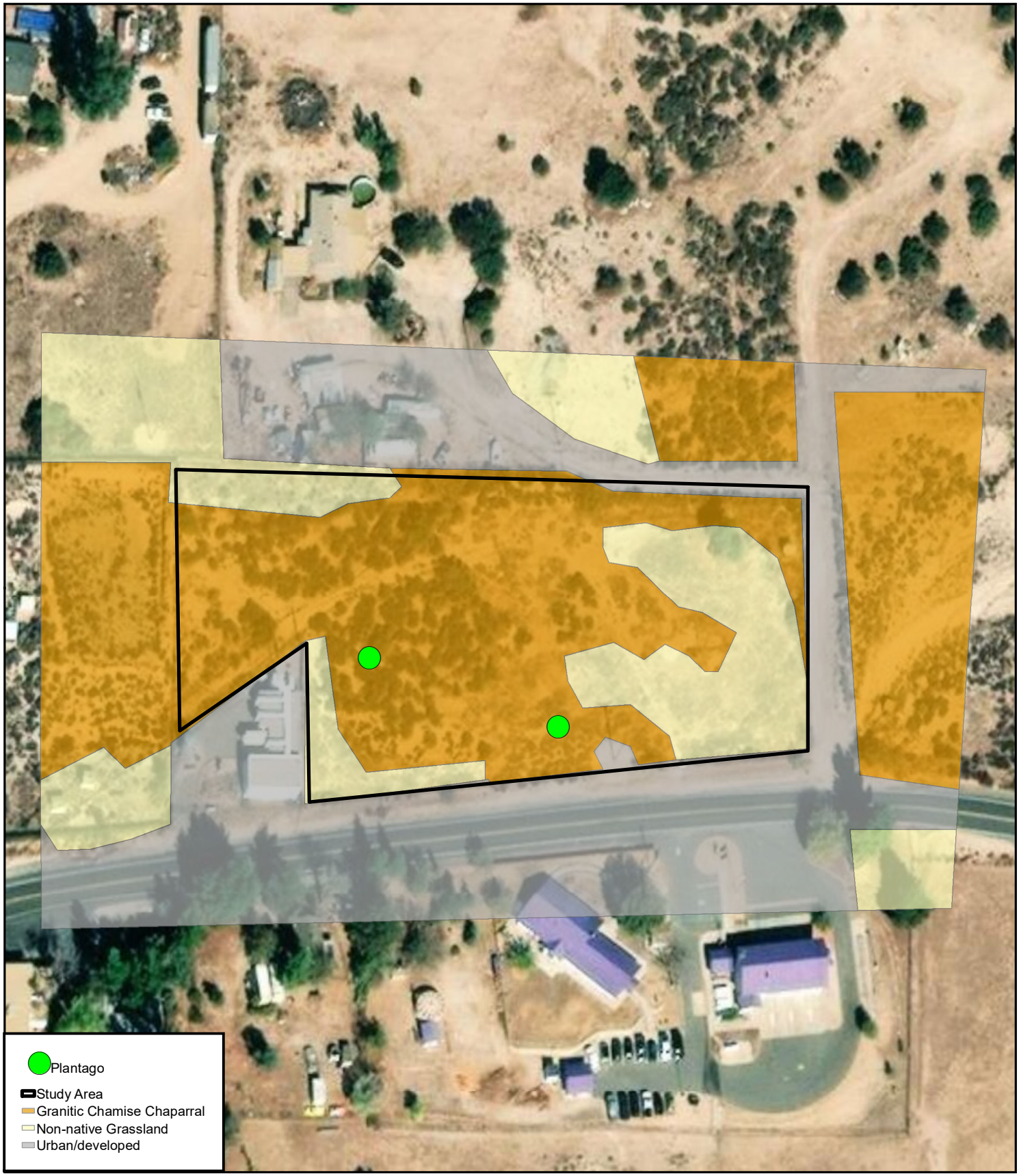
Figure 2
Project Vicinity



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Dollar General

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Date Printed: 3/16/2020	Author: Korey Klutz

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0 50 100
Feet

Figure 3
Biological Resources & Quino Survey Area

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 02-27-2019

Site Name: Campo – Dollar General **Site Visit No:** 1

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1.25 hrs **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1200	66	0-8	0
End	1315	67	0-7	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium,*
Calandrinia menziesii.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy-blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	4
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)		unidentified lady (*Vanessa* sp.)	1
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue	1	pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)		mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
unidentified white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)		fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered-skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**1**	**Column Subtotal**	**5**
		Total	**6**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 03-13-2019

Site Name: Campo – Dollar General **Site Visit No:** 3

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1200	64	0-8	10
End	1300	65	2-7	10
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	25
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	4	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)		mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
unidentified white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)		fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**4**	**Column Subtotal**	**25**
		Total	**29**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 03-17-2019

Site Name: Campo – Dollar General **Site Visit No:** 2

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	0830	64	5-9	0
End	0930	65	8-11	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	yes
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	40
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	5	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)		mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
unidentified white		funereal duskywing (*Erynnis funeralis*)	2
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)		fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**5**	**Column Subtotal**	**42**
		Total	**47**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 03-24-2019

Site Name: Campo – Dollar General **Site Visit No:** 4

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1700	74	0-3	0
End	1800	71	0-3	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	500+
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	5	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)		mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
unidentified white		funereal duskywing (*Erynnis funeralis*)	2
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)		fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	2
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**5**	**Column Subtotal**	**504**
		Total	**509**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 03-31-2019

Site Name: Campo – Dollar General **Site Visit No:** 5

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	0845	61	5-8	0
End	0945	65	5-8	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	20
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	4	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)		mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
unidentified white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)		fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**4**	**Column Subtotal**	**20**
		Total	**24**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 04-09-2019

Site Name: Campo – Dollar General **Site Visit No:** 6

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1445	87	5-9	0
End	1545	88	5-8	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	1
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	3	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)		mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
unidentified white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)	1	fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)	1		
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**5**	**Column Subtotal**	**1**
		Total	**6**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 04-14-2019

Site Name: Campo – Dollar General **Site Visit No:** 7

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1500	69	2-4	0
End	1600	67	2-4	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	2	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)	1	mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
Becker's white	1	funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)	3	fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)	1		
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**8**	**Column Subtotal**	**0**
		Total	**8**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 04-20-2019

Site Name: Campo – Dollar General **Site Visit No:** 8

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1545	80	3-8	0
End	1645	80	2-5	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)	3	unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)	5	mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
Becker's white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)	2	fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)	1		
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**11**	**Column Subtotal**	**0**
		Total	**11**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 04-28-2019

Site Name: Campo – Dollar General **Site Visit No:** 10

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1415	72	3-8	100
End	1515	70	5-8	100
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)	1	west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)		unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)	2	mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
Becker's white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)	2	fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**5**	**Column Subtotal**	**0**
		Total	**5**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 05-05-2019

Site Name: Campo – Dollar General **Site Visit No:** 11

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1630	73	5-8	0
End	1730	72	5-8	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	yes
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	1
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)		unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue	1	pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)	3	mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
Becker's white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)	1	fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**5**	**Column Subtotal**	**1**
		Total	**6**

2019 Quino Checkerspot Butterfly Survey Form

Surveyor: Lindsay Willrick **Date:** 05-10-2019

Site Name: Campo – Dollar General **Site Visit No:** 12

Area Surveyed Entire site **Acres Surveyed** 2.6 **Survey Time:** 1 hr **Acres per Hour:** 2.6

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1720	71	2-5	0
End	1820	70	2-5	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Open chaparral dominated by *Adenostoma fasciculatum*. Additional nectar sources *Plagiobotrys* sp., *Hirschfeldia incana, Erodium botrys, E. cicutarium, Calandrinia menziesii, Descurainia pinnata, Sisymbrium irio,* and *Pectocarya* sp.

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
dwarf plantain (*Plantago erecta*)		popcorn flower (*Cryptantha/Plagiobothrys* spp.)	
purple owl's clover (*Castilleja exserta*)		goldfields (*Lasthenia* spp.)	
snapdragon (*Antirrhinum coulterianum*)		goldenstar (*Muilla* spp.)	
birds-beak (*Cordylanthus rigidus*)		fiddleneck (*Amsinckia menziesii* var. *intermedia*)	
woolly plantain (*Plantago patagonica*)		onion (*Allium* spp.)	
Chinese houses (*Collinsia* spp.)		buckwheat (*Eriogonum fasciculatum*)	
		ground pink (*Linanthus dianthiflorus*)	
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 (*Chlosyne californica*)		great purple hairstreak (*Atlides halesus corcorani*)	
Gabb's checkerspot (*C. gabbii*)		brown elfin (*Callophrys augustinus*)	
Quino checkerspot (*Euphydryas editha quino*)		bramble (perplexing) hairstreak (C. *dumetorum affinis*)	
chalcedon checkerspot (*E. chalcedona chalcedona*)		gray hairstreak (*Strymon melinus pudica*)	
Leanira checkerspot (*Thessalia leanira wrighti*)		**Ladies/Admirals**	
Mylitta crescent (*Phyciodes mylitta*)		California sister (*Adelpha bredowii californica*)	
Blues		Lorquin's admiral (*Limenitis lorquini*)	
western pygmy blue (*Brephidium exila*)		west coast lady (*Vanessa annabella*)	
western tailed blue (*Everes amyntula*)		red admiral (*V. atalanta rubria*)	
southern blue (*Glaucopsyche lygdamus australis*)		painted lady (*V. cardui*)	
Edward's blue (*Hemiargus ceraunus gyas*)		American (Virginia) lady (*V. virginiensis*)	
Acmon blue (*Icaricia acmon acmon*)		unidentified lady (*Vanessa* sp.)	
marine blue (*Leptotes marina*)		**Swallowtails**	
unidentified blue		pale swallowtail (*Papilio eurymedon*)	
Whites		western tiger swallowtail (*P. rutulus*)	
Sara orangetip (*Anthocharis sara sara*)		anise swallowtail (*P. zelicaon*)	
desert (Felder's) orangetip (*A. cethura*)		**Miscellaneous**	
common California ringlet (*Coenonympha californica*)		monarch (*Danaus plexippus*)	
cabbage white (*Pieris rapae*)		common buckeye (*Junonia coenia grisea*)	
checkered (common) white (*Pontia protodice*)	1	mourning cloak (*Nymphalis antiopa)*	
spring white (*P. sisymbrii*)		**Skippers**	
Becker's white		funereal duskywing (*Erynnis funeralis*)	
Metalmarks		mournful duskywing (*Erynnis tristis*)	
Behr's metalmark (*Apodemia mormo virgulti*)	2	fiery skipper (*Hylephila phyleus*)	
Wright's metalmark (*Calephelis wrighti*)		white (common) checkered skipper (*Pyrgus albescens*)	
Sulphurs		**Other**	
orange sulphur (*Colias eurytheme*)			
sleepy orange (*Eurema nicippe*)			
cloudless sulfur (*Phoebus sennae marcellina*)			
unidentified sulphur			
Column Subtotal	**3**	**Column Subtotal**	**0**
		Total	**3**