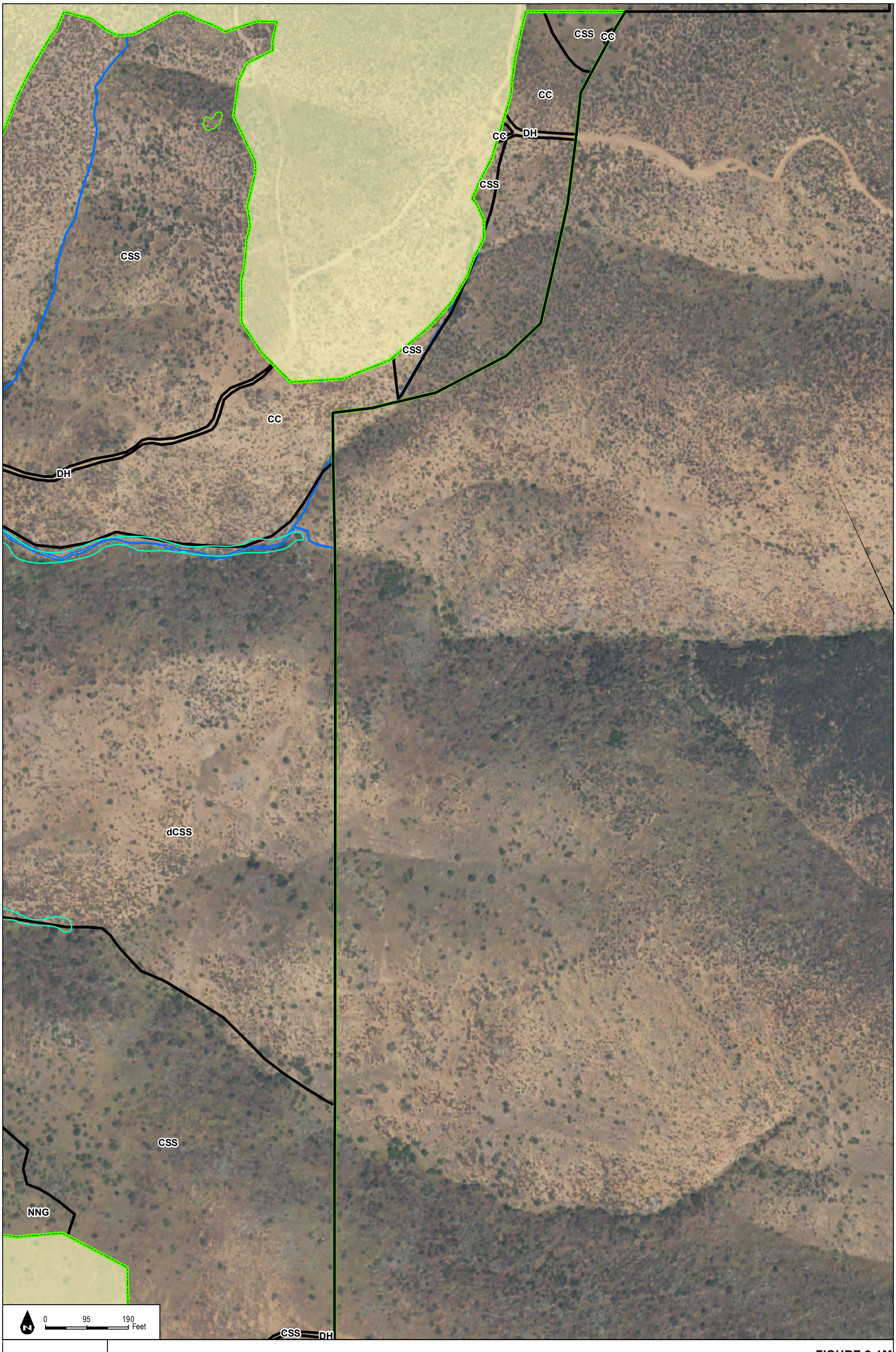

DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 2-1M
Biological Resources

Otay Ranch Village 14 and Planning Areas 16/19 - Land Exchange Alternative Preserve Status Report

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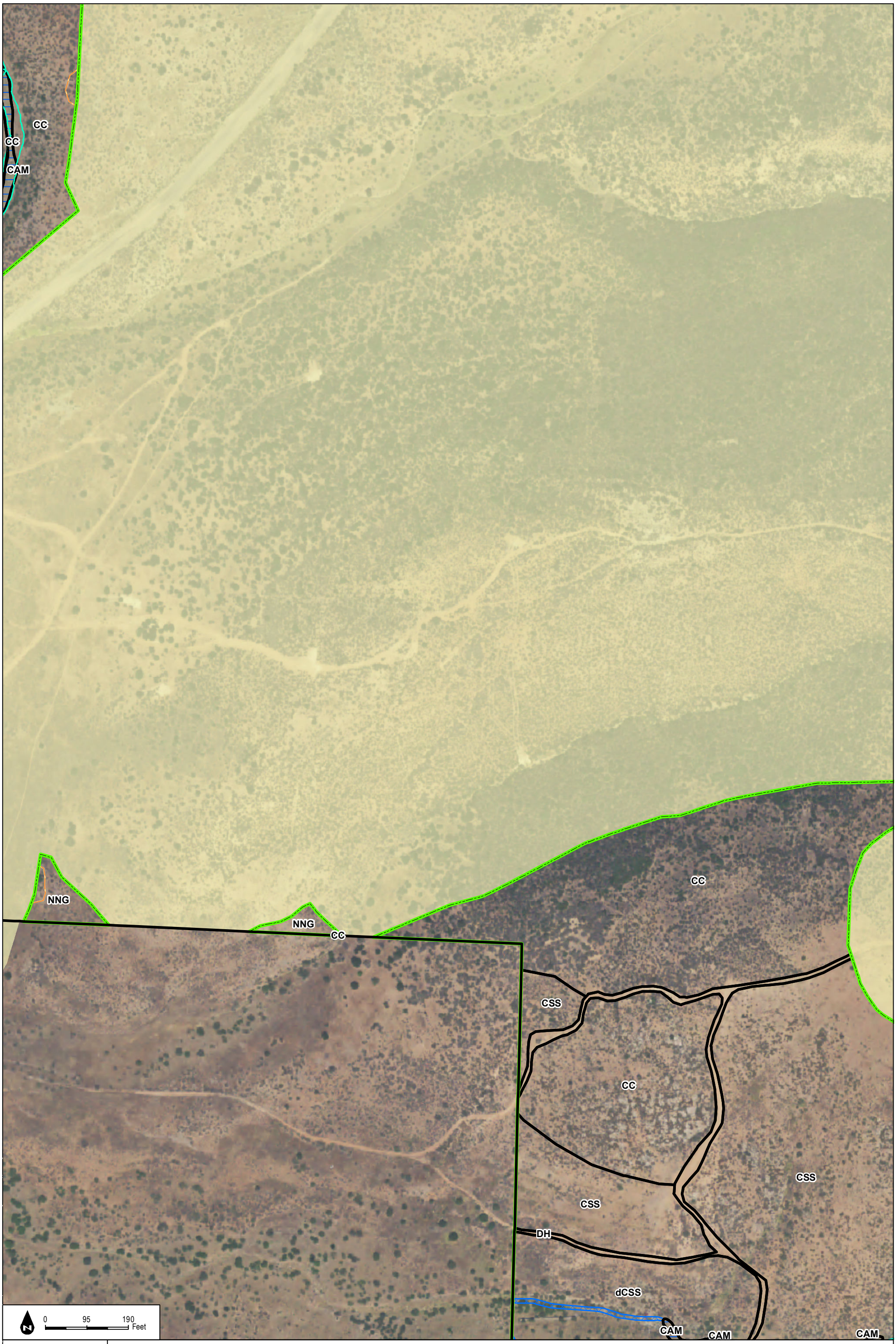

SOURCE: NAIP 2016; Hunsaker 2017

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FIGURE 2-1N
Biological Resources

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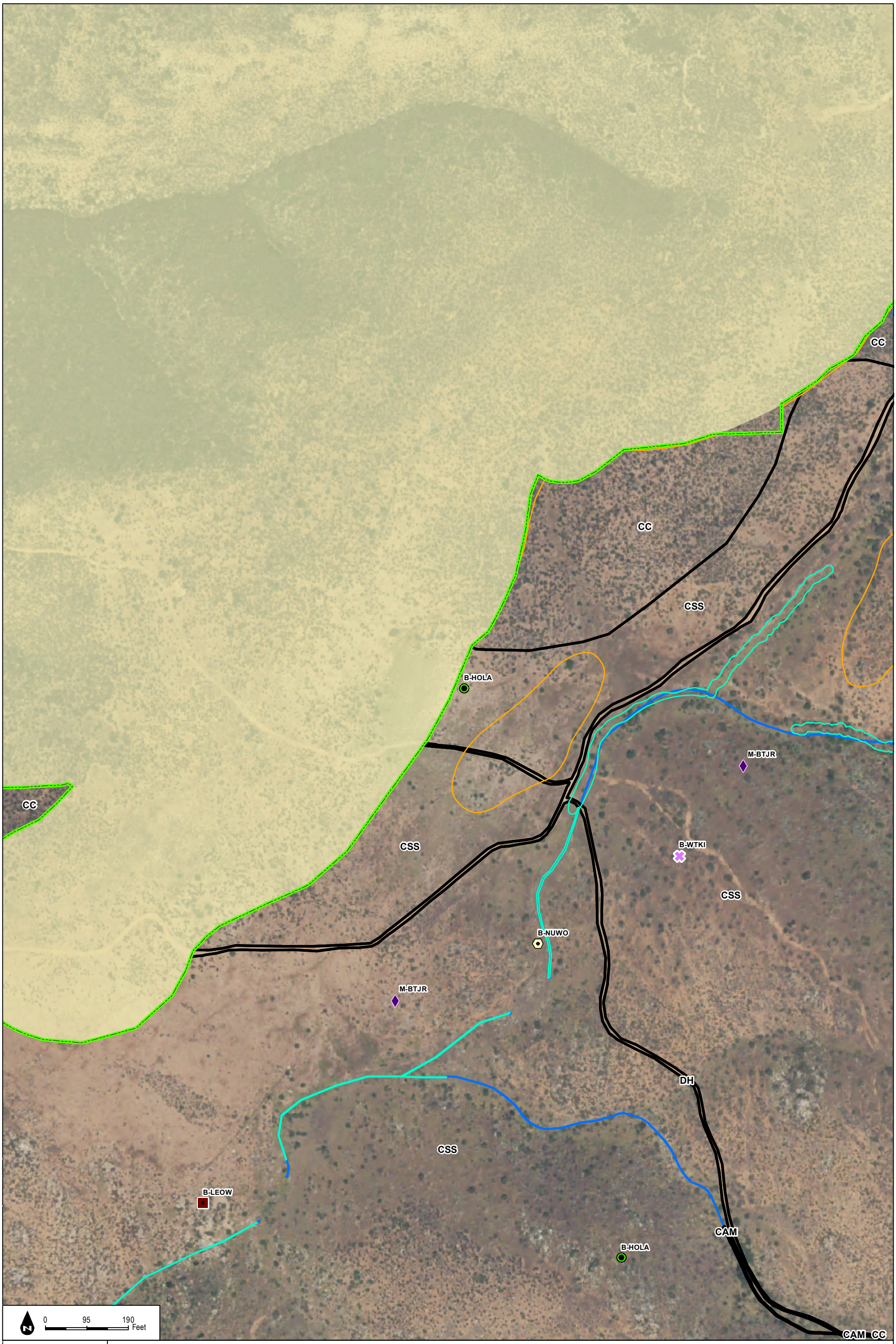

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SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 2-1O
Biological Resources

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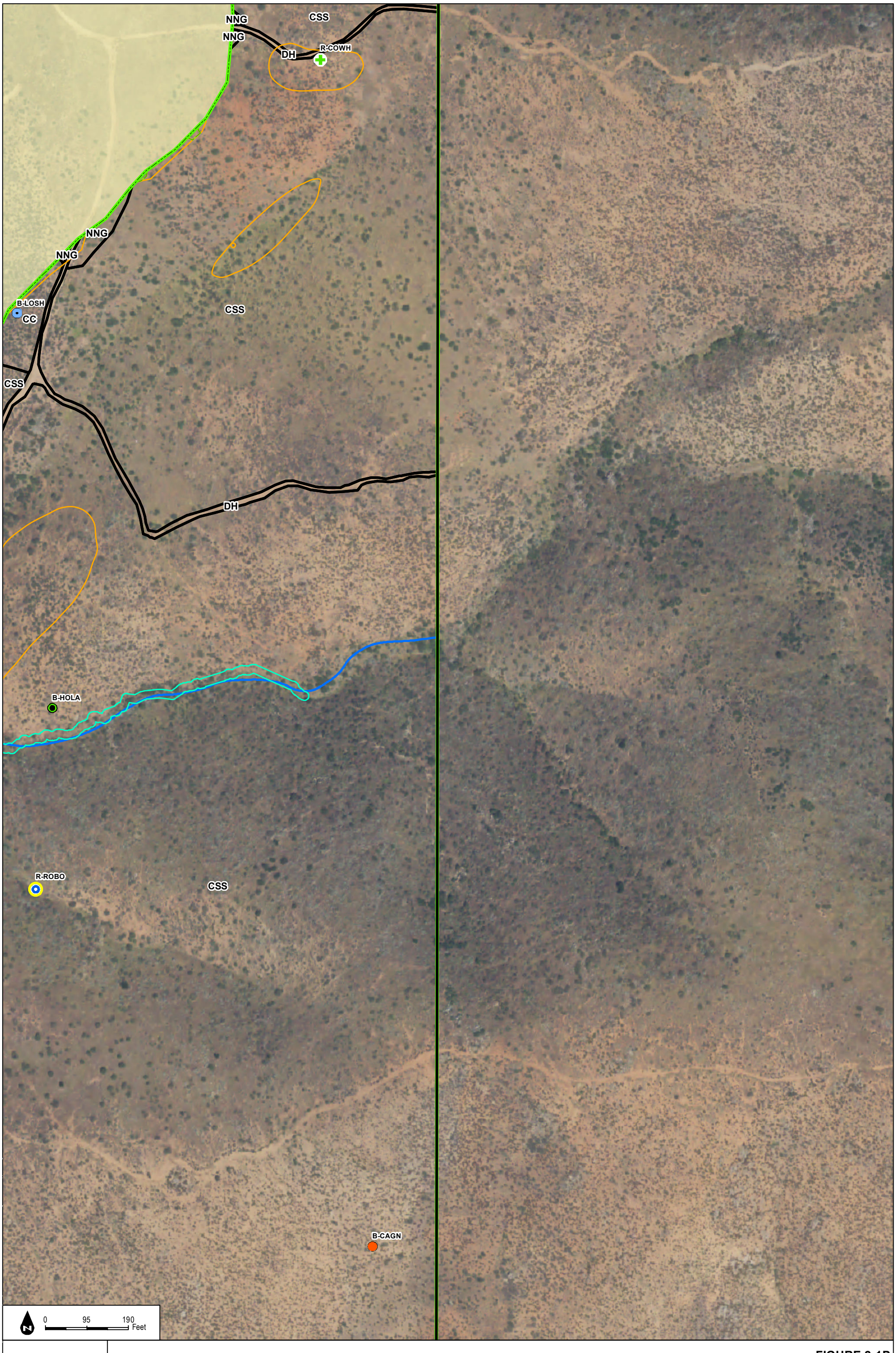

SOURCE: NAIP 2016; Hunsaker 2017

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FIGURE 2-1P
Biological Resources

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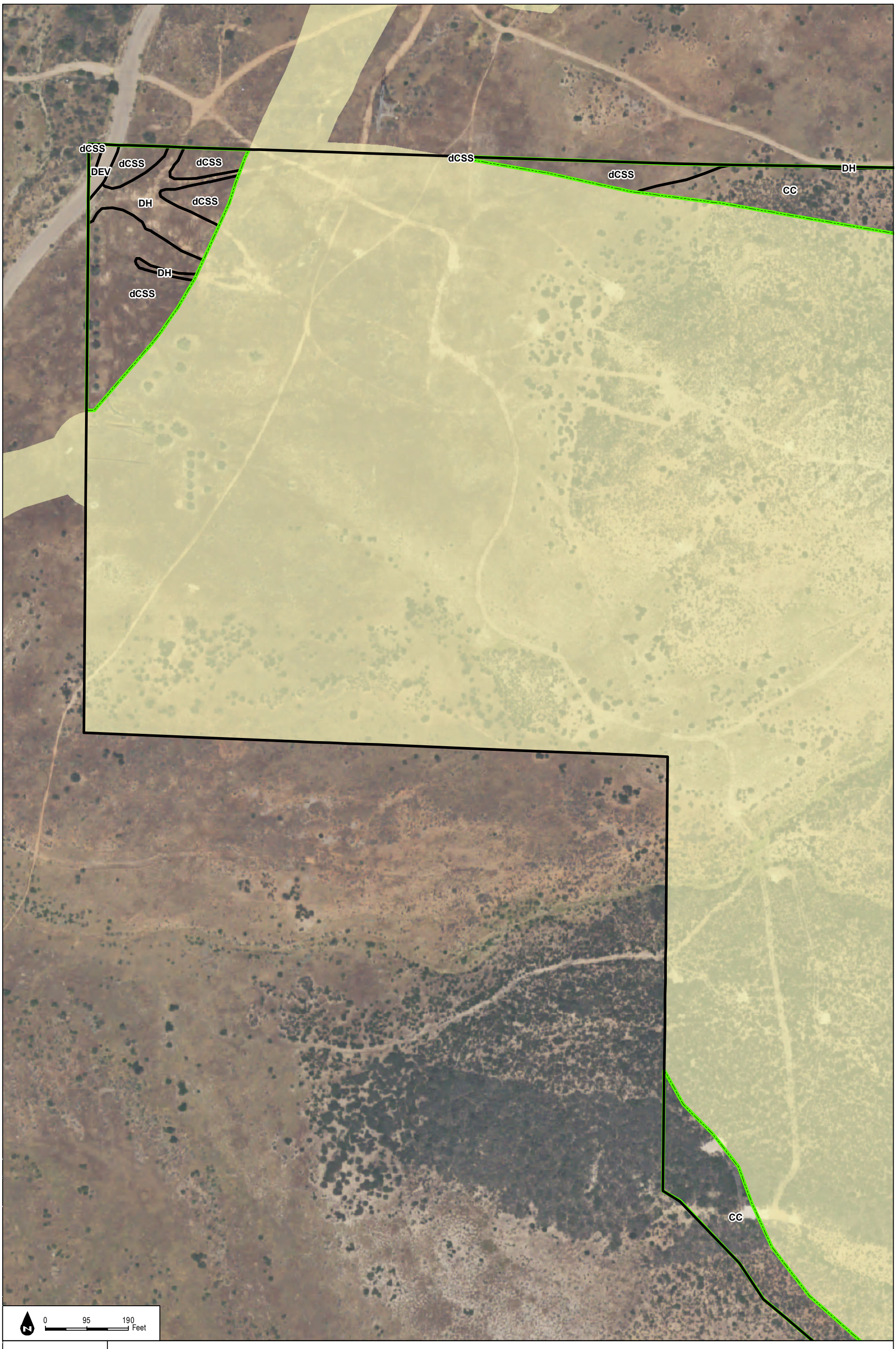

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SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 2-1Q
Biological Resources

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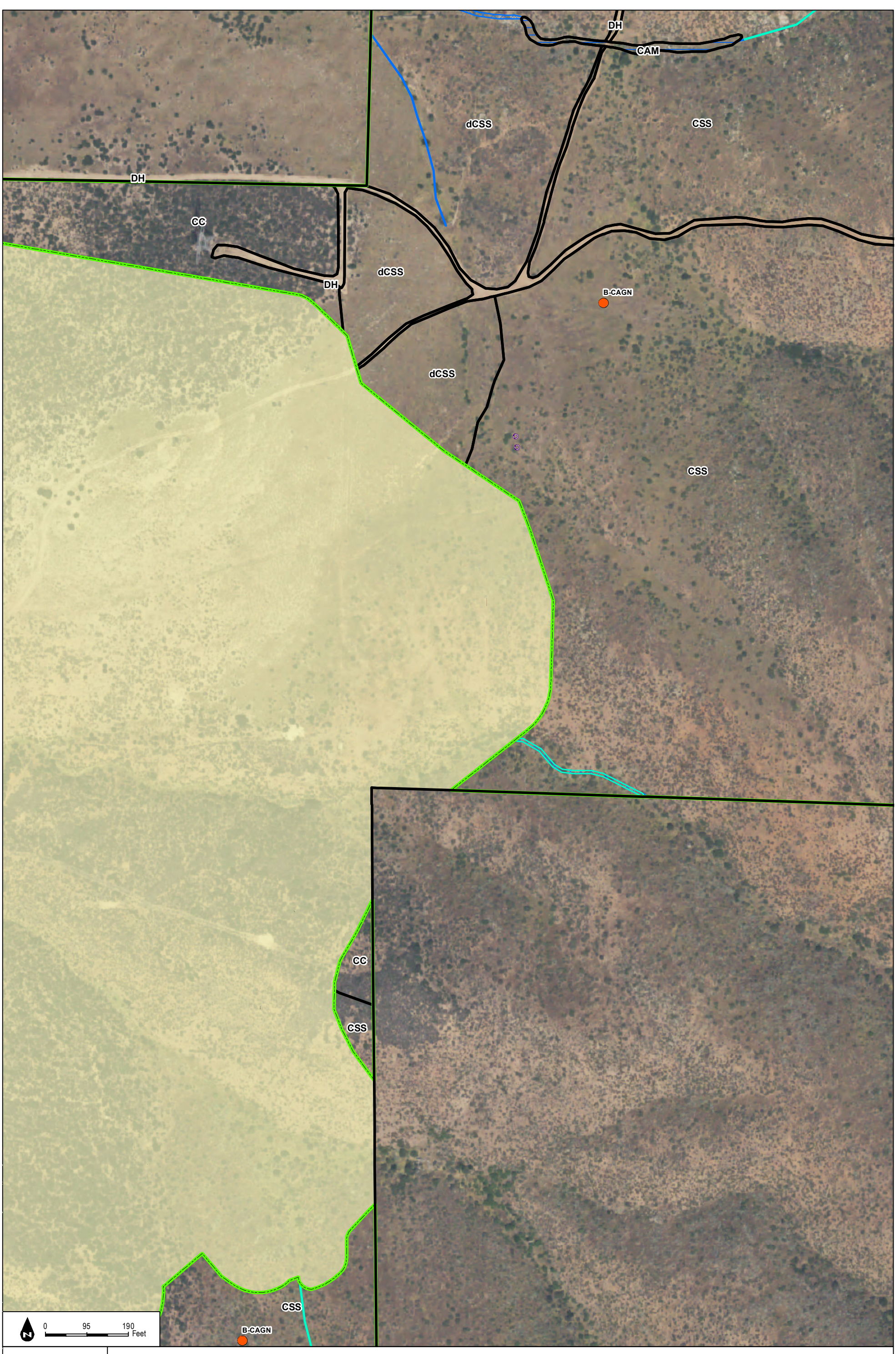

SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 2-1R
Biological Resources

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SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 2-1S
Biological Resources

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Otay Ranch Village 14 and Planning Areas 16/19 - Land Exchange Alternative Preserve Status Report

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SOURCE: NAIP 2016; Hunsaker 2017

DUDEK

FIGURE 2-1T
Biological Resources

Otay Ranch Village 14 and Planning Areas 16/19 - Land Exchange Alternative Preserve Status Report

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SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 2-1U
Biological Resources

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SOURCE: NAIP 2016; Hunsaker 2017

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FIGURE 2-1V
Biological Resources

Otay Ranch Village 14 and Planning Areas 16/19 - Land Exchange Alternative Preserve Status Report

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Areas mapped as Diegan coastal sage scrub are dominated by coastal sagebrush, San Diego County viguiera (*Viguiera laciniata*), laurel sumac, sage (*Salvia* spp.), and Eastern Mojave buckwheat. Areas where native species were co-dominant with non-native grasses were mapped as disturbed Diegan coastal sage scrub. Diegan coastal sage scrub occurs primarily within the Planning Areas 16/19 Preserve (Figures 2-1 and 2-1A through 2-1V) and is the most dominate vegetation community within the Village 14 Preserve.

Non-Native Grasslands (42200)

Non-native grasslands consist of dense to sparse cover of annual grasses with flowering culms between 0.5 to 3 feet in height (Oberbauer et al. 2008). Non-native grassland has a rank of G4S4 by CDFW (CDFG 2010), meaning it is apparently secure globally and in the state. Within the Land Exchange Area, oats (*Avena* spp.), bromes (*Bromus* spp.), stork's bill (*Erodium* spp.), and mustard (*Brassica* spp.) are the more dominant species in this community. Non-native grassland generally occurs in the flatter portions of the valley Village 14 Preserve (Figures 2-1 and 2-1A through 2-1V). The majority of the non-native grassland is within the Planning Areas 16/19 Preserve.

Coast Live Oak Woodland (71160)

Coast live oak woodland is characterized as dominated by evergreen oak, Coast live oak (*Quercus agrifolia*) (Oberbauer et al. 2008). This woodland reaches 10 to 25 meters in height and typically occurs on north-facing slopes. The shrub layer consists of laurel sumac, blue elderberry (*Sambucus nigra* ssp. *caerulea*), and toyon. Coast live oak woodland generally occurs on coastal slopes of Transverse and Peninsular ranges below 4,000 feet. All of coast live oak woodland occurs within Planning Areas 16/19 Preserve.

Alkali Seep (45320)

Alkali seep is characterized as low growing perennial herbs forming a complete cover within permanently moist or wet alkaline seeps (Oberbauer et al. 2008). In San Diego County, alkali seep occurs in coastal and transmontane as part of narrow drainages or springs. Characteristic species include saltgrass (*Distichlis spicata*), boraxweed (*Nitrophila occidentalis*), alkali mallow (*Malvella leprosa*), and San Diego marsh-elder (*Iva hayesiana*). Alkali seep occurs in the Planning Areas 16/19 Preserve.

Cismontane Alkali Marsh (52310)

Cismontane alkali marsh is a wetland community dominated by low, perennial, herbaceous plants adapted to places where standing water or saturated soils are present for a considerable portion of the year. High evaporation and low input of freshwater render these marshes

somewhat alkaline, especially during the summer. Plant species composition within this community tends to consist of halophytes such as San Diego marsh-elder, southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and certain sedges over the typical cattail–bulrush mix of freshwater marsh. The cismontane alkali marsh alliance is ranked by CDFW (CDFG 2010) as a G1S1 alliance. This ranking indicates that globally and within California the alliance is critically imperiled (CDFG 2010; NatureServe 2014).

Cismontane alkali marsh was mapped intermittently in many of the drainages in the Land Exchange Area. The intermittent nature of its occurrence presumably is due to changes in topography, which cause rapid draining in some areas and seasonal inundation in others. Areas supporting cismontane alkali marsh are evidenced by the presence of San Diego marsh-elder, and occasionally southwestern spiny rush. Saltgrass was sometimes present along the edges of the cismontane alkali marsh. Areas where native species were co-dominant with non-native grasses were mapped as disturbed cismontane alkali marsh. These communities are mapped along various drainages occurring primarily in the northern and southern portions of the Planning Areas 16/19 Preserve. A small portion of this community occurs within the central portion of the Village 14 Preserve (Figures 2-1 and 2-1A through 2-1V).

Mulefat Scrub (63310)

Mulefat scrub is a depauperate, tall, herbaceous riparian scrub strongly dominated by mulefat (*Baccharis salicifolia*). This early seral community is maintained by frequent flooding. Site factors include intermittent stream channels with fairly coarse substrate and moderate depth to the water table (Oberbauer et al. 2008). This community type is widely scattered along intermittent streams and near larger rivers. The *Baccharis salicifolia* (mulefat thickets) alliance has a rank of G5S4 (CDFG 2010; NatureServe 2014), meaning it is globally secure and apparently secure in the state. Mulefat scrub is considered special status by CDFW.

Areas mapped as mulefat scrub are dominated by mulefat and are typically found along drainages that receive intermittent water throughout the year. There are small patches of mulefat scrub mapped along the northern and southern portions of the Planning Areas 16/19 Preserve and Village 14 Preserve (Figures 2-1 and 2-1A through 2-1V).

Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is a dense riparian forest dominated by coast live oak (*Quercus agrifolia*), often with an herbaceous understory. This community occurs along the bottom or outer slopes of larger streams (Oberbauer et al. 2008). Areas mapped as oak riparian forest are dominated by coast live oak. The *Quercus agrifolia* (coast live oak woodland) alliance

has a rank of G5S4 by CDFW (CDFG 2010), meaning it is globally secure and apparently secure in the state.

One area of southern coast live oak riparian forest is mapped along the eastern edge of the Village 14 Preserve in a drainage that flows in an east/west direction to the Proctor Valley drainage (Figures 2-1 and 2-1A through 2-1V). This is the only instance of this vegetation community.

Southern Willow Scrub (63320)

Southern willow scrub is a dense, broad-leafed, winter-deciduous riparian thicket dominated by several willow species (*Salix* spp.), with scattered emergent Fremont cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemosa*). This community was formerly extensive along the major rivers of coastal Southern California, but now much reduced (Oberbauer et al. 2008). The *Salix lasiolepis* (arroyo willow thickets) alliance has a rank of G3S4 by CDFW (CDFG 2010; NatureServe 2014), meaning it is vulnerable to extirpation or extinction globally and secure in the state.

Areas mapped as southern willow scrub are dominated by arroyo willow (*Salix lasiolepis*). Two small polygons of southern willow scrub are mapped in the northern portion of the Planning Areas 16/19 Preserve (Figures 2-1 and 2-1A through 2-1V).

Open Water (64100)

According to Oberbauer et al. (2008), the open water designation is primarily used to describe areas of open ocean water. One area mapped as open water is more accurately described by the Oberbauer et al. description for non-vegetated floodplain (see Non-Vegetated Floodplain or Channel (64200)). Open water does not have a global or state rank.

Previous aerial photographs from 1994 through 2016 show one area within the eastern most parcel in Planning Areas 16/19 Preserve as inundated with water at various times; therefore, this location was mapped as open water (Google Earth 2017) (Figures 2-1 and 2-1A through 2-1V). During the 2014 surveys, this location did not contain water but instead was unvegetated with non-native grassland and some shrubs indicative of coastal sage scrub. During 2017 focused surveys, this area was again inundated with water and therefore, the open water designation is retained.

Non-Vegetated Floodplain or Channel (64200)

Non-vegetated floodplain or channel is not recognized by Holland (1986) but is recognized by Oberbauer et al. (2008). According to Oberbauer et al. (2008), non-vegetated floodplain or channel is the sandy, gravelly, or rocky fringe of waterways or flood channels that is unvegetated

on a relatively permanent basis. Vegetation may be present but is usually less than 10% total cover and grows on the outer edge of the channel. Non-vegetated channels occur throughout Preserve areas in Village 14 and Planning Areas 16/19 but have been mapped as overlays within vegetation communities. These resources are discussed more in Section 2.3, Jurisdictional Aquatic Resources. Non-vegetated floodplain or channel does not have a global or state rank.

Eucalyptus Woodland (79100)

Eucalyptus woodland is not recognized by Holland (1986), but is recognized by Oberbauer et al. (2008). This "naturalized" vegetation community is fairly widespread in Southern California and is considered a woodland habitat. It typically consists of monotypic stands of introduced Australian eucalyptus trees (*Eucalyptus* spp.). The understory is either depauperate or absent owing to high leaf litter. Although eucalyptus woodlands are of limited value to most native plants and animals, they frequently provide nesting and perching sites for several raptor species. The *Eucalyptus* (*globulus*, *camaldulensis*) (eucalyptus groves) semi-natural stands does not have a global or state rank (CDFG 2010; NatureServe 2014). There are two small separate areas mapped as eucalyptus woodland within the northern portion of the Planning Areas 16/19 Preserve (Figures 2-1 and 2-1A through 2-1V).

Urban/Developed (12000)

Urban/developed refers to areas that have been constructed upon or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). Areas mapped as urban/developed within the Village 14 Preserve includes Proctor Valley Road North and Planning Areas 16/19 Preserve (Figures 2-1 and 2-1A through 2-1V).

Disturbed Habitat (11300)

Disturbed habitats are areas that have been physically disturbed and no longer recognizable as native or naturalized vegetation association (Oberbauer et al. 2008). These areas may continue to retail soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Examples of these areas may include graded landscapes or areas, graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, areas repeatedly cleared for fuel management, or repeatedly used areas that prevent revegetation (e.g., parking lots, trails that have persisted for years). Within Otay Ranch RMP/MSCP Preserve in Village 14 and Planning Areas 16/19 Preserve, dirt roads,

prominent dirt trails, and off-highway-vehicle areas are mapped as disturbed habitat (Figures 2-1 and 2-1A through 2-1V).

2.3 Jurisdictional Aquatic Resources

The results of the jurisdictional delineation conducted by Dudek in 2014, 2015, and 2016 show that there are jurisdictional aquatic features within the Preserve. Jurisdictional aquatic resources, including both wetlands/riparian areas and non-wetland waters/streambeds, mapped in the Otay Ranch RMP and MSCP Preserve are shown in Figures 2-1 and 2-1A through 2-1V. Table 2 provides a summary, in acreages, of these jurisdictional aquatic resources. Within the Preserve U.S. Army Corps of Engineers, Regional Water Quality Control Board, and CDFW jurisdictions follow the same boundaries. Jurisdictional resources within the Preserve total 12.46 acres.

Table 2
Jurisdictional Aquatic Resources within the Otay Ranch RMP and MSCP Preserve (Acres)

Habitat Types/Vegetation Communities	Code[a]	Village 14	Planning Areas 16/19	Total
Wetlands/Riparian Habitat				
Cismontane alkali marsh (including disturbed)	52310	1.12	6.76	7.88
Mulefat scrub	63310	0.20	0.36	0.56
Southern coast live oak riparian forest	61310	0.71	—	0.71
Southern willow scrub	63320	—	0.28	0.28
	Subtotal	*2.03*	*7.40*	*9.43*
Non-Wetland Waters/Streambed				
Unvegetated channel	64200	0.66	1.93	2.59
Open water	64100	—	0.44	0.44
	Subtotal	*0.66*	*2.37*	*3.03*
	Total	**2.69**	**9.77**	**12.46**

[a] Oberbauer et al. 2008.

The Land Exchange Alternative is located within the Otay watershed, in the Otay River Reservoir (HUC 180703041003) and Jamul Creek (1807030412) hydrological units. The Land Exchange Alternative is located entirely within the Otay River Reservoir hydrological unit. All of the drainages within the Land Exchange Alternative flow toward Proctor Valley from the higher elevations east and west of the Land Exchange Alternative. In general, the drainages from the higher elevations are relatively steep and narrow and do not hold water most of the year. A few areas along the flatter topography exhibit less rapid flow and have thus developed more extensive hydrophytic vegetation and hydric soils. These areas occur along portions of the stream channels and are typically represented by cismontane alkali marsh vegetation. The drainages generally connect to Proctor Valley drainage, which runs parallel to Proctor Valley Road, and

flows in a north/south direction, eventually draining into Upper Otay Lake and then Lower Otay Lake.

2.4 Impacts within the Otay Ranch RMP Preserve

Development of the Land Exchange Alternative would result in impacts to Otay Ranch RMP Preserve. Impacts within Planning Areas 16/19 include 16.2 acres of impacts associated with Proctor Valley Road North. Of that 16.2 acres, 5.7 acres are permanent road improvements and 10.5 acres are temporary impacts. The placement of a water tank within Village 14 would also result in an additional 3.0 acres of permanent impacts to the Otay Ranch RMP Preserve. Impacted Otay Ranch RMP Preserve totals 19.2 acres, of which 10.5 acres would be restored to native habitat. While these impacts are allowable uses within the Preserve, they may reduce the amount of suitable habitat for plant and wildlife species. As such, the Impacted Preserve has been included in the Development Footprint for the Otay Ranch Village 14 and Planning Areas 16/19 for purposes of analyzing impacts on biological resources. However, those acreages are also included within this report since they are a part of the Otay Ranch RMP Preserve and MSCP Preserve. Table 3 provides the impacts associated with water tank within the Otay Ranch RMP Preserve and road improvements within the Planning Areas 16/19 Otay Ranch Preserve.

Table 3
Impacts within the Otay Ranch RMP Preserve

Habitat Types/Vegetation Communities	Code[a]	Village 14 Otay Ranch Preserve[b]	Planning Areas 16/19 Otay Ranch Preserve[b]	
		Perm Water Tank	*Perm Road*	*Temp Road*
Sensitive Upland Communities				
Granitic chamise chaparral	37210	—	1.3	2.3
Diegan coastal sage scrub	32500	2.4	0.8	3.1
Diegan coastal sage scrub (disturbed)	32500	—	0.3	0.7
Non-native grassland	42200	0.6	0.7	3.1
Subtotal of Sensitive Upland Communities		*3.0*	*3.1*	*9.1*
Jurisdictional Aquatic Resources				
Cismontane alkali marsh (including disturbed)	52310	—	0.1	0.3
Mulefat scrub	63310	—	—	0.2
Southern willow scrub		—	<0.1	<0.1
Unvegetated channel[c]	64200	—	—	—
Subtotal of Jurisdictional Aquatic Resources		—	*0.1*	*0.5*
Non-Sensitive Communities and Land Covers				
Urban/developed	12000	—	2.3	0.7

Habitat Types/Vegetation Communities	Code[a]	Village 14 Otay Ranch Preserve[b]	Planning Areas 16/19 Otay Ranch Preserve[b]	
		Perm Water Tank	*Perm Road*	*Temp Road*
Disturbed habitat	11300	—	0.2	0.2
Subtotal of Non-Sensitive Communities and Land Covers		—	*2.6*	*0.9*
Total[c]		**3.0**	**5.7**	**10.5**
Grand Total		**19.2**		

[a] Oberbauer et al. 2008.

[b] May not total due to rounding.

[c] In areas where unvegetated stream channel is an overlay within a vegetation communities, that acreage is not included in this table. See Section 2.3 for the total acreage of unvegetated stream channel within the MSCP Preserve.

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3 SPECIAL-STATUS BIOLOGICAL RESOURCES

3.1 Sensitive Plant Species

This report uses the term "special-status plant species" to include endangered, rare, or threatened plant species, as defined in California Environmental Quality Act (CEQA) Guidelines Section 15380(b) (14 CCR 15000 et seq.), as well as endangered or threatened plant species recognized in the context of the California Endangered Species Act and the federal Endangered Species Act (CDFW 2016a), plant species with a California Rare Plant Rank (CRPR) 1 through 4, (CDFW 2016b; CNPS 2016), and plant species considered "sensitive" by the County of San Diego (Table 2 in County of San Diego 2010a).

In considering rarity, the California Native Plant Society (CNPS) Inventory of rare and endangered vascular plants of California was the primary reference (CNPS 2016). Use of the CNPS Inventory is helpful because it clearly defines levels of endangerment and rarity for all of the species addressed in the Inventory. The Inventory divides its subject taxa into four ranks: CRPR 1 (which is further divided into 1A and 1B), 2 (which is further divided into 2A and 2B), 3, and 4. Plants with a CRPR of 1A are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. Plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. Plants with a CRPR of 2A are presumed extirpated because they have not been observed or documented in California for many years. Except for being common beyond the boundaries of California, plants with a CRPR of 2B would have been ranked 1B. Plants with a CRPR of 3 have not had sufficient information collected to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting CRPR 3 are taxonomically problematic. All of the plants constituting CRPR 1A, 1B, 2A, 2B, and 3 meet the definitions of the California Endangered Species Act of the California Fish and Game Code, and are eligible for state listing. Plants with a CRPR of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. Should the degree of endangerment or rarity of a CRPR 4 plant change, they would be transferred to a more appropriate rank.

Some of the plants constituting CRPR 4 meet the definitions of the California Endangered Species Act of the California Fish and Game Code, and few, if any, are eligible for state listing; this rank is considered to be a watch list. Nevertheless, many of them are significant locally, and it is strongly recommended that CRPR 4 plants be evaluated for impact significance during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines Section 15125(c) and/or 15380. This may be particularly appropriate for the following:

- The type locality of a CRPR 4 plant

- Populations at the periphery of a species' range
- Areas where the taxon is especially uncommon
- Areas where the taxon has sustained heavy losses
- Populations exhibiting unusual morphology or occurring on unusual substrates

In addition to CRPR 1–4 species, plant species listed on County Lists A through D (County of San Diego 2010b) also were included in the consideration of sensitive plant species for this analysis. Plants categorized as County List A species are plants that are rare, threatened, or endangered in California and elsewhere. Plants categorized as County List B are rare, threatened, or endangered in California, but more common elsewhere (County of San Diego 2010b). Plants categorized as County List C species are plants that may be rare, but more information is needed to determine their true rarity status. Plants categorized as County List D are of limited distribution and are uncommon, but not presently rare or endangered (County of San Diego 2010b).

3.1.1 Special-Status Plant Species Observed

Focused plant surveys were conducted in the entire Land Exchange Area to determine the presence or absence of special-status plant species that are considered endangered, rare, or threatened under CEQA Guidelines Section 15380 (14 CCR 15000 et seq.). Sensitive plant species directly observed within the Otay Ranch RMP and MSCP Preserve include the following MSCP Covered, and County List A, species: Otay manzanita (*Arctostaphylos otayensis*), San Diego goldenstar (*Bloomeria clevelandii*), Orcutt's brodiaea (*Brodiaea orcuttii*), Dunn's mariposa-lily (*Calochortus dunnii*; Narrow Endemic), San Miguel savory (*Clinopodium [=Satureja] chandleri*), Gander's pitcher sage (*Lepechinia gander*; Narrow Endemic), and San Diego barrel cactus (*Ferocactus viridescens*; County List B). In addition, there is critical habitat for spreading navarretia (*Navarretia fossalis*) within the Otay Ranch RMP Preserve.

Special-status species not covered by the MSCP observed within the Otay Ranch RMP Preserve include delicate clarkia (*Clarkia delicata*; County List A), western dichondra (*Dichondra occidentalis*; County List D), graceful tarplant (*Holocarpha virgata* ssp. *elongata*; County List D), San Diego marsh-elder (County List B), Munz's sage (*Salvia munzii*; County List B), San Diego sagewort (*Artemisia palmeri*; County List D), southwestern spiny rush (County List D), golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*; County List D), ashy spike-moss (*Selaginella cinerascens*; County List D), San Diego County viguiera (County List D), and San Diego County needle grass (*Stipa [=Achnatherum] diegoensis;* County List D).

See Table 4 for a summary of special-status plant species populations within the Otay Ranch RMP and MSCP Preserve. The location of the populations, within either the Village 14 or

Planning Areas 16/19, for each observed species is also described below and shown on Figures 2-1 and 2-1A through 2-1V.

Table 4
Summary of Special-Status Plant Species within the Otay Ranch RMP and MSCP Preserve

Species	Regulatory Status: Federal/State/MSCP Coverage/CRPR	Village 14	Planning Areas 16/19	Total
County List A				
Arctostaphylos otayensis Otay manzanita	None/None/Covered/1B.2	—	627	627
Bloomeria clevelandii San Diego goldenstar	None/None/Covered/1B.1	586	2,153	2,739
Brodiaea orcuttii Orcutt's brodiaea	None/None/Covered/1B.1	—	83	83
Calochortus dunnii Dunn's mariposa-lily	None/SR/Covered, Narrow Endemic/1B.2	15	444	459
Clarkia delicata delicate clarkia	None/None/Not Covered/1B.2	—	5	5
Clinopodium chandleri San Miguel savory	None/None/Covered/1B.2	—	1	1
Lepechinia ganderi Gander's pitcher sage	None/None/Covered, Narrow Endemic/1B.3	—	168	168
Navarretia fossalis Spreading navarretia	FT/None/Covered/ 1.B	17.0 acres	—	17.0 acres
County List B				
Ferocactus viridescens San Diego barrel cactus	None/None/Covered/2B.1	2	—	2
Iva hayesiana San Diego marsh-elder	None/None/Not Covered/2B.2	2,976	1,558	4,535
Salvia munzii Munz's sage	None/None/Not Covered/2B.2	1,400	5,514	6,914
County List D				
Artemisia palmeri San Diego sagewort	None/None/Not Covered/4.2		16	16
Dichondra occidentalis western dichondra	None/None/Not Covered/4.2	—	<0.01 acres	<0.01 acres
Holocarpha virgata ssp. *elongata* graceful tarplant	None/None/Not Covered/4.2	—	15	15
Juncus acutus ssp. *leopoldii* Southwestern spiny rush	None/None/Not Covered/4.2	—	546	546
Pentachaeta aurea ssp. *aurea* Golden-rayed pentachaeta	None/None/Not Covered/4.2	—	10,267	10,267

Table 4
Summary of Special-Status Plant Species within the Otay Ranch RMP and MSCP Preserve

Species	Regulatory Status: Federal/State/MSCP Coverage/CRPR	Village 14	Planning Areas 16/19	Total
Selaginella cinerascens Ashy spike-moss[a]	None/None/Not Covered/4.1	0.12 acres	4.92 acres	5.04 acres
Viguiera laciniata San Diego County viguiera	None/None/Not Covered/4.2	305	15,964	16,269
Stipa [=Achnatherum] diegoensis San Diego County needle grass	None/None/Not Covered/4.2	—	175	175

CRPR: California Rare Plant Rank; MSCP: Chula Vista Subarea Plan Multiple Species Conservation Plan; County List A and B and D; FT = federally threatened; SE = state endangered; SR = state rare.

[a] Populations of ashy spike-moss are in acres occupied rather than number of individuals due to the difficulty in counting distinct individuals for species with such growth habits.

Otay Manzanita (*Arctostaphylos otayensis*), List A, MSCP Covered Species

Otay manzanita is a CRPR 1B.1, MSCP Covered, and County List A species. This evergreen shrub typically blooms from December to June, and occurs in maritime chaparral at elevations less than 1,200 feet amsl. Several populations totaling approximately 627 Otay manzanita shrubs was observed within the Preserve in Planning Area 16 (Figures 2-1 and 2-1A through 2-1V).

San Diego Goldenstar (*Bloomeria clevelandii*), List A, MSCP Covered Species

San Diego goldenstar is a CRPR 1B.1, MSCP Covered, and County List A species. This species occurs on clay soils in chaparral, coastal scrub, and valley and foothill grasslands, as well as in vernal pools. This perennial herb typically blooms from April to May and occurs at elevations ranging from 164 to 1,526 feet amsl. San Diego goldenstar was recorded at several locations, totaling approximately 2,739 individuals. There are approximately 586 plants located within the Village 14 Preserve and 2,153 individuals within Planning Areas 16/19 (Figures 2-1 and 2-1A through 2-1V).

Orcutt's Brodiaea (*Brodiaea orcuttii*), List A, MSCP Covered Species, 1B.1

Orcutt's brodiaea is a CRPR 1B.1, MSCP Covered Species, and County List A species. This perennial herb is found at elevations below 5,250 feet amsl in creosote bush scrub and wetland-riparian habitat. This species typically blooms from May to July. Approximately 83 individuals were observed within the Otay Ranch RMP Preserve in Planning Area 16 (Figures 2-1 and 2-1A through 4-1V).

Dunn's Mariposa-Lily (*Calochortus dunnii*), List A, MSCP Covered Species, Narrow Endemic

Dunn's mariposa-lily is state listed as rare, and is also a CRPR 1B.2, MSCP Covered, Narrow Endemic, and County List A species. This species occurs within a variety of vegetation communities, such as coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grasslands. This annual herb typically blooms from March to May, but can bloom into June, and occurs at an elevation range less than 1,000 feet amsl. Several occurrences of Dunn's mariposa-lily, totaling about 459 individuals, were observed within the Land Exchange Alternative. This species was mapped almost entirely within the Planning Area 16 Preserve (444 individuals), and 15 individuals were mapped within the Village 14 Preserve (Figures 2-1 and 2-1A through 4-1V).

Delicate Clarkia (*Clarkia delicata*), List A

Delicate clarkia is an annual herb listed as a CRPR 1B.2 and County List A species. This plant is often found within chaparral and cismontane woodland vegetation communities at elevations ranging from 770 to 3,300 feet amsl. Delicate clarkia blooms from April to June. Five individuals were observed within the Planning Area 16 Preserve (Figures 2-1 and 2-1A through 2-1V).

San Miguel Savory (*Clinopodium chandleri*), List A, MSCP Covered Species

San Miguel savory is a perennial shrub listed as CRPR 1B.2, MSCP Covered, and County List A species. This shrub is often found in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. San Miguel savory typically blooms between March and July and occurs at elevations ranging from 394 to 3,527 feet amsl. One occurrence was observed within the Planning Area 16 Preserve (Figures 2-1 and 2-1A through 2-1V).

Gander's Pitcher Sage (*Lepechinia ganderi*), List A, MSCP Covered Species, Narrow Endemic

Gander's pitcher sage is a CRPR 1B.3, MSCP Covered, and County List A species. Gander's pitcher sage is a perennial shrub that occurs within a variety of vegetation communities including closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grasslands. This species is found at elevations ranging from 1,001 to 3,297 feet amsl and blooms between June and July. A total of 168 individuals were observed within the Planning Areas 16 Preserve (Figures 2-1 and 2-1A through 2-1V).

Spreading Navarretia (*Navarretia fossalis*), Federally Threatened, List A, MSCP Covered Species

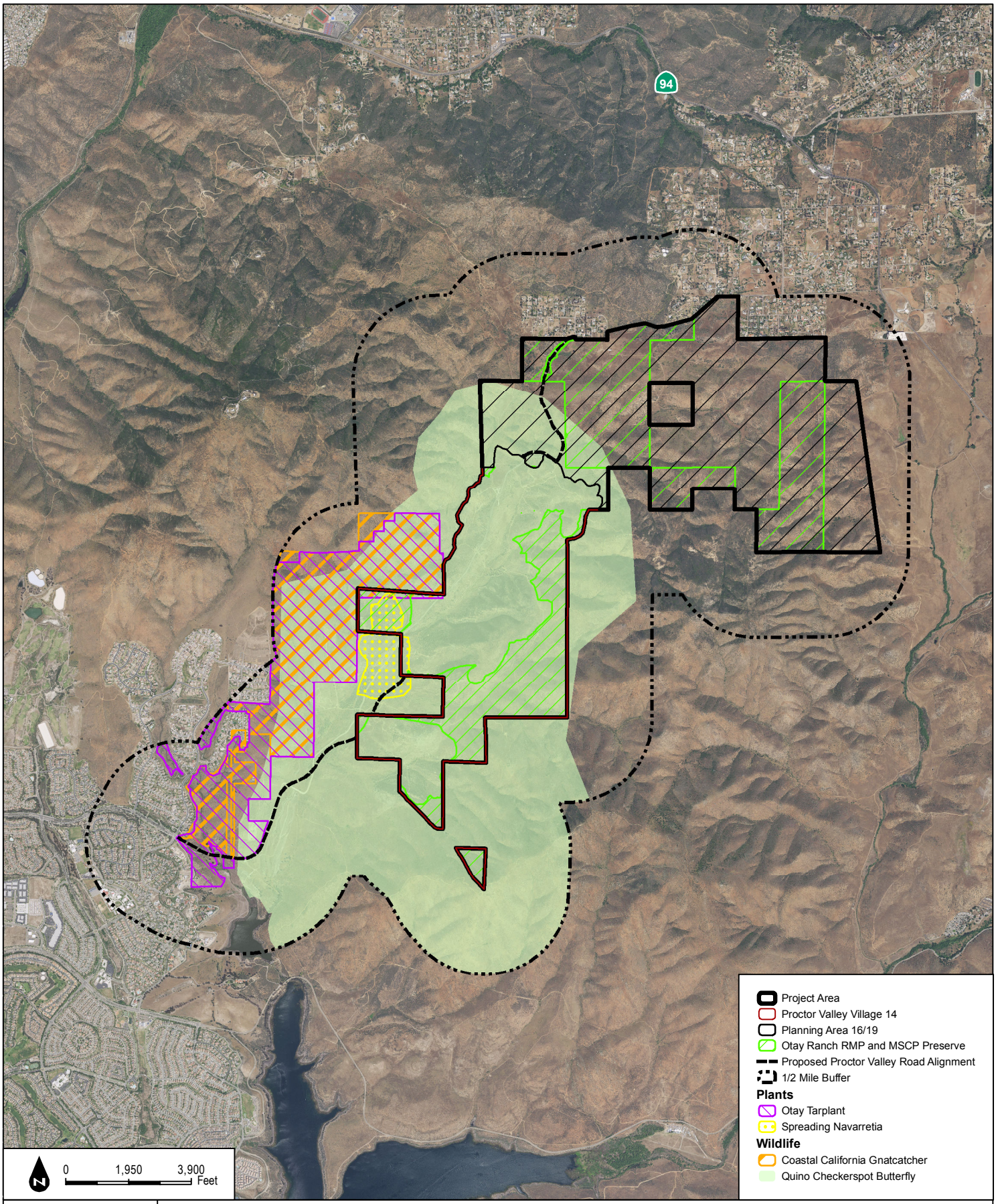
Spreading navarretia is federally listed as a threatened, state endangered, CRPR 1B.1, MSCP Covered, and County List A species. This annual herb is often found in ditches and other artificial depressions, which often occur in degraded vernal pool habitat. Its typical bloom period is between April and June and it occurs on elevations ranging from sea level to 4,250 feet amsl. There is no spreading navarretia found within the Preserve areas; however, 17 acres of critical habitat is designated by the U.S. Fish and Wildlife Service (USFWS) for this species in the southwest portion of the Preserve within Village 14 (Figure 2-2, Critical Habitat).

San Diego Barrel Cactus (*Ferocactus viridescens*), List B, MSCP Covered Species

San Diego barrel cactus is a CRPR 2B.1, MSCP Covered, and County List B species. This succulent is located at elevations less than 1,500 feet within chaparral, coastal scrub, valley and foothill grasslands and sometimes vernal pools. This species blooms from May to July. Two San Diego barrel cacti were observed within the Otay Ranch RMP Preserve in Village 14 (Figures 2-1 and 2-1A through 2-1V).

San Diego Marsh-Elder (*Iva hayesiana*), List B

San Diego marsh-elder is a CRPR 2B.2 and County List B species. It occurs within marshes and swamps as well as playas at elevations ranging from 30 to 1,650 feet amsl. This perennial herb blooms from April to November. Population estimates for this species' occurrence within the Preserve are approximately 4,535 individuals. This species was observed commonly throughout the Village 14 and Planning Area 16 Preserves within areas mapped as cismontane alkali marsh or other riparian vegetation, and in ephemeral channels (Figures 2-1 and 2-1A through 2-1V).



SOURCE: NAIP 2016; Hunsaker 2017; USFWS 2016

FIGURE 2-2

Critical Habitat

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Munz's Sage (*Salvia munzii*), List B

Munz's sage is a CRPR 2B.2 and County List B species. This perennial evergreen shrub typically blooms from February to April. It occurs in chaparral and coastal scrub habitat types at elevations of 394–3,494 feet amsl (CNPS 2016). Munz's sage is a common species in some of the coastal sage scrub and chamise chaparral communities within the Land Exchange Area. Although not all *Salvia* individuals could be identified to species due to the timing of the rare plant surveys, approximately 6,914 individuals were confirmed as Munz's sage. The majority of Munz's sage, including 5,514 individuals, occurs throughout the Preserve in Planning Area 16, with other populations (1,400 individuals) located within the Village 14 Preserve (Figures 2-1 and 2-1A through 2-1V).

San Diego Sagewort (*Artemisia palmeri*), List D

San Diego sagewort, a CRPR 4.2 and County List D species, occurs in a variety of vegetation communities including chaparral, coastal scrub, riparian forest, scrub and woodland, at elevations ranging from 50 to 3,000 feet amsl. This deciduous shrub blooms from May to September. One occurrence of this species, totaling 16 individuals, was observed within the Planning Area 16.

Western Dichondra (*Dichondra occidentalis*), List D

Western dichondra is a CRPR 4.2 and County List D species. This rhizomatous herb blooms from March to May. It occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland at elevations of 160 to 1,650 feet (CNPS 2016). Since populations of this rhizomatous herb are difficult to discern, the extent of the occurrences were mapped but populations were not counted. There one occurrence within the Planning Areas 16/19 Preserve that totals <0.01 acres. While additional populations may occur within the Otay Ranch RMP and MSCP Preserve, this species was not detected during previous surveys.

Graceful Tarplant (*Holocarpha virgata* ssp. *elongata*), List D

Graceful tarplant is a CRPR 4.2 and County List D species, which occurs within chaparral, coastal scrub, cismontane woodland, chaparral and valley and foothill grassland. This annual herb typically blooms from May to November and is found at elevations ranging from 200 to 3,600 feet. Approximately 15 individuals were observed within Preserve in Planning Area 16.

Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*), List D

Southwestern spiny rush is a CRPR 4.2 and County List D species found within mesic coastal dunes, meadows and alkali seeps, and coastal saltwater marshes and swamps. The typical blooming period for this rhizomatous herb is between May and June and it occurs at elevations less than 3,000 feet amsl. Approximately 546 individuals of southwestern spiny rush were observed within the Preserve in Planning Areas 16/19, generally within cismontane alkali marsh, other riparian vegetation, and ephemeral channels.

Golden-Rayed Pentachaeta (*Pentachaeta aurea* ssp. *aurea*), List D

Golden-rayed pentachaeta is a CRPR 4.2 and County List D species found at elevations of 260 to 6,070 feet amsl within a variety of vegetation communities, including chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland, as well as valley and foothill grassland. This annual herb typically blooms between March and July. Approximately 10,267 individuals were recorded within the Preserve in Planning Areas 16/19.

Ashy Spike-Moss (*Selaginella cinerascens*), List D

Ashy spike-moss is a CRPR 4.1 and County List D species. This perennial rhizomatous herb occurs in chaparral and coastal scrub at elevations of 66 to 2,100 feet amsl. Ashy spike-moss was observed within throughout portions of the Land Exchange Area but due to its low ranking, only locations (not population numbers) for this species were recorded. Similar to western dichondra, the extent of occurrences were mapped; however, due to the difficulty of discerning individuals, populations were not counted. Occurrences of ashy spike-moss within Preserve in Village 14 total 0.15 acres and 4.92 acres of the are located in Planning Areas 16/19..

San Diego County Viguiera (*Bahiopsis laciniata*), List D

San Diego County viguiera is a CRPR 4.2 and County List D species. This shrub is found at elevations ranging from 200 to 2,460 feet amsl in chaparral and coastal scrub. This species typically blooms from February to June. San Diego County viguiera occurs as a common shrub in some of the coastal sage scrub within the Land Exchange Area as well as throughout other vegetation communities. A total of approximately 16,269 individuals were recorded mostly within the Planning Area 16 Preserve (15,964 individuals) with additional populations recorded in Village 14 (304 individuals).

San Diego County Needle Grass (*Stipa [=Achnatherum] diegoensis*), List D

San Diego County needle grass is a CRPR 4.2 and County List D species. This perennial grass occurs in chaparral and coastal sage scrub at elevations less than 7,480 feet amsl. This species typically blooms from February to June. San Diego County needle grass was observed during 2017 focused plant surveys within chaparral and coastal sage scrub communities. Locations were mapped within the Planning Area 16 Preserve (175 individuals).

3.1.2 Special-Status Plant Species With a Moderate Potential to Occur

Plant species with a moderate potential to occur within the Preserve include small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*), little mousetail (*Myosurus minimus* ssp. *apus*), and chaparral ragwort (*Senecio aphanactis*) (Table 5). The potential-to-occur determination is based on elevation, habitat, and soils present within the Preserve and Dudek's knowledge of biological resources in the area and regional distribution of each species. Species that have moderate or high potential to occur within the Otay Ranch RMP and MSCP Preserve are described in more detail in Table 5.

Table 5
Special-Status Plant Species that have Moderate Potential to Occur within the Otay Ranch RMP and MSCP Preserve

Species	Status (Federal/ State/CRPR/MSCP South County/County)	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range	Potential to Occur
Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*)	None/None/4.2/ None/List D	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/March–May/50–3,500 feet amsl	This has been recorded in the vicinity (CNPS 2016; SDNHM 2016). There is suitable habitat within the Preserve areas; however, this inconspicuous annual species was not detected during the focused plant surveys.
Little mousetail (*Myosurus minimus* ssp. *apus*)	None/None/3.1/ Covered/List C	Vernal pools, valley and foothill grassland; alkaline/annual herb/March–June/60–2,100 feet amsl	This species is recorded adjacent to Proctor Valley Road near the Land Exchange Area[b] (CDFW 2017) and there is suitable habitat within Preserve areas; however, it was not detected during focused plant surveys. Therefore, it is considered to have a moderate potential to occur on site.

Table 5
Special-Status Plant Species that have Moderate Potential to Occur within the Otay Ranch RMP and MSCP Preserve

Species	Status (Federal/ State/CRPR/MSCP South County/County)	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range	Potential to Occur
Chaparral ragwort (*Senecio aphanactis*)	None/None/2B.2/ None/List B	Chaparral, cismontane woodland, coastal scrub/sometimes alkaline/annual herb/ January–April/50–2,625 feet amsl	This species is recorded within the vicinity (CNPS 2016; CDFW 2016b), including the Jamul Mountains quadrangle. There is suitable habitat within the Preserve areas. This early-blooming annual species may not have been detected during focused surveys given the timing of its bloom period.

3.1.3 Anticipated Conservation Levels for Special-Status Plant Species

The RMP provides a summary of the distribution of special-status plant species within Otay Ranch. Policy 2.7 of the RMP outlines standards of preservation of various plant species while Table 5 of the RMP provides a summary value of how well the RMP Preserve protects each species afforded coverage by the RMP. The value of preservation is expressed in percentages, which the RMP states is a "subjective assessment of the overall quality and quantity of the on-site population(s) of each species that is incorporated into the Preserve. It is primarily a measure of the percentage of the area of the Otay Ranch distribution of each species included in the Preserve" (City of Chula Vista and County of San Diego 1993a). A total of 85 plant and animal species are "covered" by the MSCP Plan. With approval of each Subarea Plan and corresponding Implementing Agreement, each participating local jurisdiction received permits and/or management authorized to directly impact or "take" MSCP Covered Species. The Covered Species include species listed as endangered or threatened by the federal or state Endangered Species Acts, as well as unlisted species. Table 3-4a in the MSCP Plan provides a list of the MSCP Covered plant species. Table 3-5 in the MSCP Plan includes specific conditions required for take authorizations as well as the conservation level anticipated for each Covered Species. Table 6 provides the RMP and MSCP Plan anticipated conservation levels for each special-status plant species observed within the Otay Ranch RMP and MSCP Preserve and the Land Exchange Alternative's contribution to the preservation of the species.

Table 6
Otay Ranch RMP and MSCP Anticipated Conservation Levels for Special-Status Plant Species

Species Scientific Name/ Common Name	Regulatory Status: Federal/ State/ MSCP Coverage/ CRPR	Otay Ranch RMP	MSCP Table 3-5	Project Preservation
County List A				
Bloomeria clevelandii San Diego goldenstar	None None Covered 1B.1	The RMP Ranch-wide standard included in the Preserve a minimum of 54% of known points of occurrence. The RMP anticipated 54% of known Otay Ranch populations of this species to be retained in the Preserve.	The MSCP provides coverage for this species because the plan would place into the Preserve 8 of 11 major populations (72%), 125 of 144 occurrences (86%), and 38% of the grassland vegetation community.	The Land Exchange Alternative would preserve 55% of the existing population within the Land Exchange Area, which would contribute to the overall preservation of this species.
Brodiaea orcuttii Orcutt's brodiaea	None None Covered B.1	Table 5 of the RMP indicates that 75% of known Otay Ranch populations of this species would be retained in the Preserve.	This species would be covered by the MSCP because all of the major populations in the MSCP plan area (4 populations) would be conserved.	The Land Exchange Alternative would preserve 100% of the existing populations within the Land Exchange Area.
Calochortus dunnii Dunn's mariposa-lily	None SR Covered 1B.2	The RMP Ranch-wide standard included in the Preserve a minimum of 100% of known occurrences.	The MSCP provides coverage for this species because it places 100% of the major populations into the Preserve.	The Land Exchange Alternative would preserve 100% of the existing population within the Land Exchange Area.
Dudleya variegata Variegated dudleya	None None Covered, Narrow Endemic 1B.2	The RMP Ranch-wide standard included in the Preserve a minimum of 50% of Otay Ranch populations of variegated dudleya (See Policy 2.7 of the RMP).	This MSCP provides coverage for this species because it places into the Preserve 56% of major populations and 75% of known localities. This species is on the MSCP's list of narrow endemics and therefore participating jurisdictions must specify in their Subarea Plans additional conservation measures for the species.	This species was not observed within the Otay Ranch RMP Preserve but was observed within Development Footprint. To compensate for project related impacts to this narrow endemic species, the existing populations of this species within the Development Footprint would be translocated to the Otay Ranch RMP Preserve, and additional individuals would be planted to achieve a 2:1 Otay

Table 6
Otay Ranch RMP and MSCP Anticipated Conservation Levels for Special-Status Plant Species

Species Scientific Name/ Common Name	Regulatory Status: Federal/ State/ MSCP Coverage/ CRPR	Otay Ranch RMP	MSCP Table 3-5	Project Preservation
				Ranch RMP Preserve population to impact ratio (70:35 individuals).
County List B				
Ferocactus viridescens San Diego barrel cactus	None None Covered 2.1	The RMP Ranch-wide standard included in the Preserve a minimum of 75% of Otay Ranch populations of this species. Table 5 of the RMP indicates 75% of the Otay Ranch populations of this species would be retained in the Preserve.	The MSCP provides coverage for this species because it places 81% of major populations into the Preserve.	The Land Exchange Alternative would conserve 4% of the populations within the Preserve.
Iva hayesiana San Diego marsh-elder	None None Not Covered 2B.2	The RMP Ranch-wide standard included in the Preserve a minimum of 75% of Otay Ranch populations of this species. Table 5 of the RMP indicates 75% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 74% of the populations within the Land Exchange Area, which would contribute to the Ranch-wide preservation of the species.
Salvia munzii Munz's sage	None None Not Covered 2B.2	The RMP Ranch-wide standard included in the Preserve a minimum of 46% of Otay Ranch populations of this species. Table 5 of the RMP indicates 46% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 38% of the populations within the Land Exchange Area, which would contribute to the Ranch-wide preservation of the species.
County List D				
Artemisia palmeri San Diego sagewort	None None Not Covered 4.2	The RMP Ranch-wide standard included in the Preserve a minimum of 75% of Otay Ranch populations of this species. Table 5 of the RMP indicates 90-100% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 100% of the populations within the Land Exchange Area.

Table 6
Otay Ranch RMP and MSCP Anticipated Conservation Levels for Special-Status Plant Species

Species Scientific Name/ Common Name	Regulatory Status: Federal/ State/ MSCP Coverage/ CRPR	Otay Ranch RMP	MSCP Table 3-5	Project Preservation
Dichondra occidentalis Western dichondria	None None Not Covered 4.2	The RMP Ranch-wide standard included in the Preserve a minimum of 50% of Otay Ranch populations of this species. Table 5 of the RMP indicates 70-80% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 74% of the populations within the Land Exchange Area.
Juncus acutus ssp. *leopoldii* Southwestern spiny rush	None None Not Covered List 4.2	The RMP Ranch-wide standard included in the Preserve a minimum of 50% of Otay Ranch populations of this species. Table 5 of the RMP indicates 70%–80% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 95% of the populations within the Land Exchange Area.
Pentachaeta aurea ssp. *aurea* Golden-rayed pentachaeta	None None Not Covered List 4.2	This species is not included in the Otay Ranch RMP.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 81% of the populations within the Land Exchange Area.
Selaginella cinerascens Ashy spike-moss	None None Not Covered List 4.1	The RMP Ranch-wide standard included in the Preserve a minimum of 50% of Otay Ranch populations of this species. Table 5 of the RMP indicates 70%–80% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 76% of the populations within the Land Exchange Area.
Viguiera laciniata San Diego County viguiera	None None Not Covered List 4.2	The RMP Ranch-wide standard included in the Preserve a minimum of 75% of Otay Ranch populations of this species. Table 5 of the RMP indicates 75% of the Otay Ranch populations of this species retained in the Preserve.	This species is not a Covered Species.	The Land Exchange Alternative would conserve 87% of the populations within the Land Exchange Area, which would contribute to the Ranch-wide preservation of the species.

3.2 Special-Status Wildlife Species

The County of San Diego divides special-status wildlife species into County Group 1 and County Group 2 based on the species' rarity and known threats (County of San Diego 2010b). County Group 1 species include those that have a high level of sensitivity, are listed as threatened or endangered, or have a natural history requirement that increases their sensitivity. County Group 2 species include those that are becoming less common, although not so rare that extinction is imminent without immediate action. The CDFW assigns Species of Special Concern (SSC) statuses to species whose population levels are declining, have limited ranges, and/or are vulnerable to extinction due to continuing threats (CDFW 2017). In addition, Fully Protected (FP) species are protected by the CDFW and Watch List (WL) species are candidates for higher sensitive statuses. USFWS provides the Bird of Conservation Concern (BCC) status to migratory and non-migratory bird species that are adhere to the 1988 amendment to the Fish and Wildlife Conservation Act that mandates the USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973" (USFWS 2008).

3.2.1 Special-Status Wildlife Species Observed

Special-status wildlife species directly observed within the Otay Ranch RMP and MSCP Preserve include the following MSCP Covered, and/or County Group 1 species: Cooper's hawk (*Accipiter cooperii*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), grasshopper sparrow (*Ammodramus savannarum*), golden eagle (*Aquila chrysaetos*), red-shouldered hawk (*Buteo lineatus*), northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), coastal California gnatcatcher, San Diego fairy shrimp (*Branchinecta sandiegonensis*), mule deer (*Odocoileus hemionus*), American badger (*Taxidea taxus*; burrow only), Blainville's horned lizard (*Phrynosoma blainvillii*), long-eared owl (*Asio otus*), and white-tailed kite (*Elanus leucurus*).

Additional special-status wildlife species observed within the Otay Ranch RMP and MSCP Preserve include western spadefoot (*Spea hammondii*), California horned lark (*Eremophila alpestris actia*), barn-owl (*Tyto alba*), yellow warbler (*Setophaga petechia*), monarch (*Danaus plexippus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), and rosy boa (*Lichanura trivirgata*). The location of the populations, within either Preserve associated with Village 14 or Planning Areas 16/19 for each observed species is described below and shown on Figures 2-1 and 2-1A through 2-1V.

Amphibians and Reptiles

San Diegan Tiger Whiptail (**Aspidoscelis tigris stejnegeri**)*, SSC/County Group 2*

The San Diegan tiger whiptail is a SSC and County Group 2 species. It is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, north into Ventura County, and south into Baja California, Mexico (Lowe et al. 1970; Stebbins 2003).

The tiger whiptail (*A. tigris*) is found in a variety of habitats, primarily in areas where plants are sparse and there are open areas for running. According to Stebbins (2003), the species ranges from deserts to montane pine forests where it prefers warmer and drier areas. The species is also found in woodland and streamside growth, and it avoids dense grassland and thick shrub growth.

San Diegan tiger whiptail was observed during surveys in the east/central portion of the Land Exchange Alternative, within Preserve (Figures 2-1 and 2-1A through 2-1V). There is suitable habitat, including open scrub and chaparral, and termite food sources observed in the Preserve and therefore there is a high potential for this species to occur in the Preserve.

Red Diamondback Rattlesnake (**Crotalus ruber**)*, SSC/County Group 2*

The red diamondback rattlesnake is a SSC and County Group 2[1] species. It is found in a variety of habitats from the coast to the deserts, from San Bernardino County into Baja California, Mexico (below 5,000 feet amsl). It commonly occurs in rocky areas within coastal sage scrub, chaparral, juniper woodlands, and desert habitats, but can also be found in areas devoid of rocks (Lemm 2006).

Red diamondback rattlesnake was observed once within Preserve in Planning Area 16, outside of the Land Exchange Area during focused burrowing owl surveys. There is suitable habitat in the Otay Ranch RMP Preserve within the vegetation communities with rocky outcroppings (Figures 2-1 and 2-1A through 2-1V).

Blainville's Horned Lizard (**Phrynosoma blainvillii**)*, SSC/MSCP Covered Species/ County Group 2*

Blainville's horned lizard (previously coast horned lizard) is a SSC, MSCP Covered, and County Group 2 species. It is found from the Sierra Nevada foothills and central California to coastal Southern California. It is often associated with coastal sage scrub, especially areas of level to gently sloping ground with well-drained loose or sandy soil, but it can also be found in annual

[1] The County of San Diego's biology guidelines refer to this species as northern red diamond rattlesnake (*Crotalus ruber ruber*); species names in this report follow the naming conventions described in Section 3.2.2.

grasslands, chaparral, oak woodland, riparian woodland, and coniferous forest between 30 and 7,030 feet amsl (Jennings and Hayes 1994). This reptile typically avoids dense vegetation, preferring 20% to 40% bare ground in its habitat. The Blainville's horned lizard can be locally abundant in areas where it occurs, with densities of near 20 adults per acre. Adults are active from late March through late August, and young are active from August through November or December. Up to 90% of the diet of the Blainville's horned lizard consists of native harvester ants (*Pogonomyrmex* spp.).

Blainville's horned lizard was observed several times during surveys and there is suitable habitat throughout open areas in coastal sage scrub and chaparral communities (Figures 2-1 and 2-1A through 2-1V). Two occurrences were identified within the Preserve, and it is likely that this species would occur within or utilize the Otay Ranch RMP and MSCP Preserve and other available open space. In addition, the presence of harvester ants observed within the Land Exchange Alternative would provide a food source for this species.[2]

Western Spadefoot* (Spea hammondii), *SSC/County Group 2

Western spadefoot is an SSC and County Group 2 species. It is endemic to California and northern Baja California, Mexico. Spadefoot ranges from the north end of California's Central Valley near Redding, south, west of the Sierras and the deserts, and into northwest Baja California, Mexico (Jennings and Hayes 1994; Stebbins 2003). Although this species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its range, the western spadefoot occurs from sea level to 4,000 feet amsl, but mostly at elevations below 3,000 feet amsl (Stebbins 2003).

The western spadefoot is almost completely terrestrial, entering temporary pools and drainages only to breed. This species aestivates in upland habitats near potential breeding sites in burrows approximately 1 meter (3 feet) in depth (Stebbins 1972). This species prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). However, the species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman 1998).

Western spadefoot tadpoles were found in a vernal pool in the MSCP Preserve area during fairy shrimp surveys and because of this observation, focused surveys for this species were conducted in 2017 (Figures 2-1 and 2-1A through 2-1V). Focused surveys detected 12 occupied features

[2] Harvester ants are a primary source of food for Blainville's horned lizards (Nafis 2014).

within the Preserve. Two occupied features are located within the Otay Ranch RMP Preserve within Village 14 (C4 and C5) and the remaining occupied features are located within Preserve areas in Planning Areas 16/19 (A22, A23, A27, AA3, AA4, B2, B3, D23, D5, and D6).

Birds

Coastal California Gnatcatcher* (Polioptila californica californica), *Federally Threatened/SSC/MSCP Covered Species/County Group 1

Coastal California gnatcatcher is federally threatened, SSC, MSCP Covered, and a County Group 1 species. This species occurs in coastal Southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. The coastal California gnatcatcher occurs mainly on cismontane slopes (coastal side of the mountains) in Southern California, ranging from Ventura and northern Los Angeles Counties south through the Palos Verdes Peninsula to Orange, Riverside, San Bernardino, and San Diego Counties. The species' range continues south to El Rosario, Mexico. Initially it was reported that 99% of all coastal California gnatcatcher locality records occurred at or below an elevation of 984 feet amsl (Atwood 1990; Atwood and Bolsinger 1992). Since that time, data collected at higher elevations show that the species may occur as high as 3,000 feet amsl, but that more than 99% of the known coastal California gnatcatcher locations occurred below 2,500 feet amsl (65 Federal Register 63680). Because of the natural topography of the Southern California hills and mountain ranges, most of the higher-elevation locations are more inland, where population densities tend to be much lower than coastal populations.

Coastal California gnatcatcher typically occurs in or near coastal scrub vegetation that is composed of relatively low-growing, dry-season deciduous and succulent plants. Characteristic plants of this community include coastal sagebrush, various species of sage, Eastern Mojave buckwheat, lemonade sumac (*Rhus integrifolia*), California brittlebush (*Encelia californica*), and cactus (e.g., *Opuntia* spp.). Coastal California gnatcatchers also occur in chaparral, grassland, and riparian vegetation communities where the coastal scrub community is close by (Bontrager 1991). The use of these vegetation communities appears to be most frequent during late summer, autumn, and winter, with smaller numbers of birds using such areas during the nesting season. The coastal California gnatcatcher tends to occur most frequently in the coastal sagebrush-dominated stands on mesas, gently sloping areas, and along the lower slopes of the Coast Ranges (Atwood 1990). The coastal California gnatcatcher occurs in high frequencies and densities in coastal scrub communities with an open or broken canopy, whereas it is absent from coastal scrub dominated by tall shrubs and occurs in low frequencies and densities in low coastal scrub with a closed canopy (Weaver 1998).

Coastal California gnatcatchers glean insects and spiders from foliage of shrubs, primarily Eastern Mojave buckwheat and coastal sagebrush (Atwood 1993). Their diet is primarily composed of spiders, but is also composed of wasps, bees, and ants (Burger et al. 1999). Coastal California gnatcatcher habitat use has been positively associated with insect abundance and diversity (Redak et al. 1996, as cited in Diffendorfer et al. 2002).

Coastal California gnatcatcher nests usually are located in a small shrub or cactus 1 to 3 feet above the ground. Territory size varies and is influenced by season and locale (Preston et al. 1998), but is unrelated to vegetation structure (Braden et al. 1997). During the breeding/nesting season, territories in coastal areas are often smaller—averaging 5.7 acres (Atwood et al. 1998a, 1998b)—than those in more inland regions, which average 8.4 acres (Braden et al. 1997).

Focused surveys for coastal California gnatcatcher resulted in the detection the three pairs were observed within the Village 14 Otay Ranch RMP Preserve. One pair and one male were detected within the Preserve associated with Planning Areas 16/19 (Figures 2-1 and 2-1A through 2-1V). All pairs were observed in coastal sage scrub communities. USFWS-designated critical habitat for coastal California gnatcatcher overlaps a very small portion Otay Ranch RMP Preserve in Village 14 northwest of Proctor Valley Road (Figure 2-2).

Golden Eagle (**Aquila chrysaetos**)***, BCC/WL; FP/MSCP Covered Species/County Group 1***

Golden eagle is a BCC, WL, FP, MSCP Covered, and County Group 1 species. In addition, the golden eagle is protected under the federal Bald and Golden Eagle Protection Act. As a state-fully protected species, take may only occur pursuant to scientific research or in connection with an authorized NCCP, such as the County's MSCP. The golden eagle is a yearlong, diurnally active species that is a permanent resident and migrant throughout California. Golden eagles are more common in northeast California and the Coast Ranges than in Southern California and the deserts. In Southern California, the species tends to occupy mountain, foothill, and desert habitats. Foraging habitat for this species includes open habitats with scrub, grasslands, desert communities, and agricultural areas. This species nests on cliffs within canyons and escarpments and in large trees (generally occurring in open habitats), and occurs primarily in rugged, topographically complex landscapes (Garrett and Dunn 1981; Johnsgard 1990). Most nests are located on cliffs or trees near forest edges, in trees within woodland savannas, or in small stands near open habitats (Kochert et al. 2002). Nest locations tend to be more closely associated with topographic heterogeneity than with a particular vegetation type (Call 1978).

Nest building can occur almost any time during the year. This species nests on cliffs, rock outcrops, large trees, and artificial structures such as electrical transmission towers, generally near open habitats used for foraging (Garrett and Dunn 1981; Scott 1985; Johnsgard 1990;

Kochert et al. 2002). Golden eagles commonly build, maintain, and variably use multiple alternative nest sites in their breeding territories, routinely refurbishing and reusing individual nests over many years. Generally, the nests are large platforms composed of sticks, twigs, and greenery that are often 3 meters (10 feet) across and 1 meter (3 feet) high (Zeiner et al. 1990a). Pairs may build more than one nest and tend multiple nests prior to laying eggs (Kochert et al. 2002). Each pair can have up to a dozen nests, especially in cliff nesting habitat where nests persist for longer than they do in trees, but generally only two to three nests are used in rotation from one year to the next. Some pairs use the same nest each year, whereas others use different alternative nests more regularly. Succeeding generations of eagles may even use the same nest (Terres 1980, as cited in CPUC and BLM 2011).

In California, golden eagles breed from January through August, with peak breeding activity occurring from February through July. Breeding typically begins in January with courtship and nest building, and egg laying typically occurs in February and March (Brown 1976; WRI 2010, as cited in CPUC and BLM 2011). Golden eagles typically lay one to three eggs, which they incubate for 43 to 45 days (Beebe 1974). The hatching and feeding of nestlings takes place from March through June. After their young fledge, the adult eagles may continue to feed the young birds for several months (WRI 2010, as cited in CPUC and BLM 2011). In the prey-rich oak woodland and savannah habitats of the California Coast Ranges, established golden eagle breeding pairs typically nest in most years (Hunt et al. 1999; Hunt and Hunt 2006); however, the long breeding cycle may contribute to some pairs breeding only every other year even when food is abundant (WRI 2010, as cited in CPUC and BLM 2011). In other situations, where overall ecosystem productivity is lower or more variable from year to year, pairs need to range farther in search of food and may not nest every year because of the energetic demands of securing dispersed prey (Kochert et al. 2002).

Lagomorphs (rabbits and hares) and ground squirrels are of primary importance in the diet of most golden eagles, including in San Diego County, but their diet may include a wide variety of other mammals, reptiles, and birds, and frequently includes carrion, especially during winter (Johnsgard 1990; Kochert et al. 2002; Olendorff 1976).

This species has been observed flying throughout the Otay Ranch RMP and MSCP Preserve and is likely to use all areas of open habitat within the Preserve for foraging. The Preserve within Village 14 or Planning Areas 16/19 is not known to support golden eagle nesting sites. The nests within the closest known territory, the Rancho San Diego territory (or San Miguel Mountain territory), were destroyed during 2000 and 2007 (USFWS 2014; WRI 2010). Two artificial nesting platforms were constructed in the same region and have not been successful at supporting golden eagles (USFWS 2014). Both the natural nests and the artificial nesting platforms are located outside of the Land Exchange Alternative including the open space, which would remain after development. More

recently, eagle specialists from H.T. Harvey surveyed the Land Exchange Alternative and surrounding area in the 2016 and 2017 breeding seasons, including the locations of the former San Miguel Mountain nest site and the artificial nest platforms installed by USFWS and the Bureau of Land Management (BLM; H.T. Harvey 2017). Through those surveys, H.T. Harvey did not locate any nests, nor did H.T. Harvey observe any eagles displaying courtship or pre-nesting behavior within the San Miguel, Jamul or Proctor Valley areas (H.T. Harvey 2017). Golden eagles observed in the area or tracked by USGS were considered transient adult and subadult that occur seasonally or periodically in these areas (H.T. Harvey 2017).

White-Tailed Kite (**Elanus leucurus**)***, FP/County Group 1***

White-tailed kite is a FP and County Group 1 species. White-tailed kite occurs mainly in lowlands of southern and northwestern cismontane California in savannah, open woodland, marshes, cultivated fields, and partially cleared lands (Zeiner et al. 1990a). White-tailed kites hunt in the morning and late afternoon for voles and mice, usually near farmlands. The kite is non-migratory but can be nomadic and dispersive in its movements and often occurs in communal roosts (Unitt 2004). Nests are made of piled sticks and twigs and placed near the tops of oak, willow, or other trees near marshes and foraging areas (Zeiner et al. 1990a).

White-tailed kite was observed once in November 2014 toward the east/central portion of the Village 14 Otay Ranch RMP Preserve (Figures 2-1 and 2-1A through 4-1V). There is suitable foraging habitat within the Otay Ranch RMP and MSCP Preserve; and due to the Otay Ranch RMP and MSCP Preserve's proximity to Sweetwater Reservoir, and Lower and Upper Otay Reservoirs where there is more suitable riparian woodland for nesting, this species likely forages in the Preserve associated with Land Exchange Alternative occasionally. Foraging habitat consists of cismontane alkali marsh, eucalyptus woodland, mulefat scrub, oak riparian forest, and non-native grassland. Due to the lack of dense riparian or oak woodland within the Otay Ranch RMP and MSCP Preserve, as well as lack of observations during the nesting season, this species is unlikely to nest within the Otay Ranch RMP and MSCP Preserve.

Cooper's Hawk (**Accipiter cooperii**)***, WL/MSCP Covered Species/County Group 1***

Cooper's hawk is a WL, MSCP Covered, and a County Group 1 species. It is found throughout California in wooded areas. This species inhabits live oak, riparian, deciduous, or other forest habitats near water. Nesting and foraging usually occur near open water or riparian vegetation. Nests are built in dense stands with moderate crown depths, usually in second-growth conifer or deciduous riparian areas. Cooper's hawks use patchy woodlands and edges with snags for perching while they are hunting for prey such as small birds, small mammals, reptiles, and amphibians within broken woodland and habitat edges (Zeiner et al. 1990a).

A Cooper's hawk was observed flying overhead during biological surveys, but since much of the Land Exchange Alternative is likely used by this species, the observations were not mapped. There is some suitable nesting habitat in the southern willow scrub and eucalyptus within the Preserve (Figures 2-1 and 2-1A through 2-1V). The Otay Ranch RMP and MSCP Preserve supports nesting opportunities within habitats with trees.

Southern California Rufous-Crowned Sparrow (**Aimophila ruficeps canescens**)**,** ***WL/MSCP Covered Species/County Group 1***

Southern California rufous-crowned sparrow is a WL, MSCP Covered, and County Group 1 species. The current distribution of the Southern California rufous-crowned sparrow is restricted to a narrow belt of semiarid coastal sage scrub and sparse chaparral from Santa Barbara south to the northwestern corner of Baja California (Bent 1968; Collins 1999; Grinnell 1926; Grinnell and Miller 1944; Todd 1922; Unitt 1984; Zeiner et al. 1990a). The subspecies has also been found on San Martin Island. The Southern California rufous-crowned sparrow is considered a resident throughout its range. No true migratory movements have been recorded, though limited movements to lower elevations in some areas have been reported during especially severe winters (Collins 1999).

Southern California rufous-crowned sparrows were observed on several occasions within the northern portion of the Planning Area 19 Preserve in coastal sage scrub habitats during surveys (Figures 2-1 and 2-1A through 2-1V).

Grasshopper Sparrow (**Ammodramus savannarum**)**,** ***SSC/County Group 1***

Grasshopper sparrow is a SSC and County Group 1 species. In California, grasshopper sparrows breed (and primarily winter) on slopes and mesas containing grasslands of varying compositions (Garrett and Dunn 1981; Grinnell and Miller 1944). The species frequents dense, dry or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting. Grasshopper sparrows require fairly continuous native grassland areas with occasional taller grasses, forbs, or shrubs for song perches (Garrett and Dunn 1981). Grasshopper sparrows tend to avoid grassland areas with extensive shrub cover, and the presence of native grasses is less important than the absence of trees (County of Riverside 2008; Smith 1963).

Grasshopper sparrow was observed during surveys but the observations were not mapped. Given the habitat within the Otay Ranch RMP and MSCP Preserve it is likely that this species uses these areas.

Long-Eared Owl (**Asio otus**)**,** ***SSC/County Group 1***

Long-eared owl is a SSC and County Group 1 species. It is an uncommon yearlong resident throughout most of the state, with the exception of the Central Valley and Southern California

desert regions, where is it generally a winter visitor (Zeiner et al. 1990a). Along the coastline of Southern California, the long-eared owl may be a resident breeder (Bloom 1994; Marks et al. 1994) or a rare winter visitor (Garrett and Dunn 1981).

Long-eared owl primarily uses riparian habitat for roosting and nesting, but can also use live oak thickets and other dense stands of trees (Zeiner et al. 1990a). It appears to be more associated with forest edge habitat than with open habitat or forest habitat (Holt 1997). The species usually does not hunt in the woodlands where it nests, but in open areas such as fields, rangelands, and clearings. At higher elevations, the species is found in conifer stands that are usually adjacent to more open grasslands and shrublands (Marks et al. 1994). In California, long-eared owls also nest in dense or brushy vegetation amid open habitat (Bloom 1994). Long-eared owls have also been known to nest in caves, cracks in rock canyons, and in artificial wicker basket nests (Garner and Milne 1998; Marks et al. 1994).

Long-eared owl was observed once in November 2014 toward the southern portion of the Village 14 Preserve (Figures 2-1 and 2-1A through 2-1V). There are some breeding records in surrounding areas to the north (Unitt 2004). Due to the lack of dense riparian woodland or oak woodland within the open space areas, this species has low potential to nest.

Red-Shouldered Hawk* (Buteo lineatus), *County Group 1

Red-shouldered hawk is not considered special status by any state or federal agencies; however, it is a County Group 1 species. Red-shouldered hawks inhabit a broad range of North American forests, but favor mature, mixed deciduous–coniferous woodlands, especially bottomland hardwood, riparian areas, flooded deciduous swamps, oak woodlands, eucalyptus groves, and suburban areas with nearby woodlots (Dykstra et al. 2008). This species nests in riparian habitats near permanent water and forages along edges of wet meadows, swamps, and emergent wetlands (Zeiner et al. 1990a).

Red-shouldered hawk was detected within the Otay Ranch RMP and MSCP Preserve but the observations were not mapped. Within the Preserves, there are no permanent water sources; however, ephemeral and intermittent sources are present. There is suitable foraging habitat throughout the Preserves. Nesting and foraging modeled habitat for this species includes chamise chaparral, disturbed chamise chaparral, disturbed habitat, eucalyptus woodland, oak riparian forest, and non-native grassland. The Preserves support nesting opportunities within habitats with large trees.

Turkey Vulture* (Cathartes aura)*, County Group 1

The turkey vulture is not considered special status by any state or federal agencies; however, it is considered a County Group 1 species. In California, it is common during the nesting season and is a yearlong resident west of the Sierra Nevada Mountains, especially in coastal areas. Summer and yearlong ranges also include the southeastern United States; portions of Texas, Mexico, Central America, and South America; and some islands in the Caribbean (Kirk and Mossman 1998).

Turkey vultures use a variety of habitats while foraging on both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, non-intensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner et al. 1990a). Nest locations tend to be difficult to find and are usually located in a crevice among granite boulders (Unitt 2004). However, this species prefers hilly areas that provide deflective updrafts for flight and generally avoids extensive areas of row-crop farmland (Kirk and Mossman 1998).

Turkey vulture was observed foraging throughout the Otay Ranch RMP and MSCP Preserve during biological surveys, but the observations were not mapped. The Preserve associated with the Land Exchange Alternative does not support suitable cliffs and large trees for nesting, but there is suitable foraging habitat. Suitable foraging habitat includes most vegetation communities and undeveloped land cover.

Northern Harrier* (Circus cyaneus)*, SSC/MSCP Covered Species/County Group 1

Northern harrier is a SSC, MSCP Covered, and County Group 1 species. Northern harriers use a wide variety of open habitats in California including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, estuaries, flood plains, and marshes (Macwhirter and Bildstein 2011). The species can also forage over coastal sage scrub or other open scrub communities. Nesting areas are associated with marshes, pastures, grasslands, prairies, croplands, desert shrub-steppe, and riparian woodland (Macwhirter and Bildstein 2011). Winter habitats similarly include a variety of open habitats dominated by herbaceous cover. Northern harrier populations are most concentrated in areas with low vegetation.

One northern harrier was observed foraging in the northern portion of the Planning Areas 16/19 Preserve (Figures 2-1 and 2-1A through 2-1V). Northern harriers are known to nest in Otay River and there is suitable nesting habitat along Proctor Valley drainage; however, based on the low frequency of observations this species is likely not currently nesting within the Otay Ranch RMP Preserve.

Loggerhead Shrike **(Lanius ludovicianus)*, BCC/SSC/County Group 1***

Loggerhead shrike is a BCC, SSC, and County Group 1 species. It is found in lowlands and foothills throughout California, and it remains in the southern portion of the state year-round. Preferred habitats for the loggerhead shrike are open areas that include scattered shrubs, trees, posts, fences, utility lines, or other structures that provide hunting perches with views of open ground, as well as nearby spiny vegetation or built structures (such as the top of chain-link fences or barbed wire) that provide means to skewer prey items. The species occurs most frequently in riparian areas along the woodland edge, grasslands with sufficient perch and butcher sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas; and they can sometimes be found in mowed roadsides, cemeteries, and golf courses, although they occur rarely in heavily urbanized areas (Zeiner et al. 1990a). Loggerhead shrikes build nests in stable shrubs or trees requiring dense foliage for well-concealed nests and likely nests in the Otay Ranch RMP Preserve.

Loggerhead shrike was observed within Village 14 on the eastern edge of the Otay Ranch RMP Preserve (Figures 2-1 and 2-1A through 2-1V).

Yellow Warbler* (Setophaga petechia)*, BCC/SSC/County Group 2

Yellow warbler inhabits riparian woodland in coastal and desert lowlands, montane chaparral, open ponderosa pine, and mixed conifer habitats (Zeiner et al. 1990a). This species breeds along the coast of California west of Sierra Nevada, and eastern California from Lake Tahoe south to Inyo County. The yellow warbler occurs in medium-density woodlands and forests with heavy brush understory, and migrates to sparse to dense woodland and forest habitats.

Yellow warbler was observed foraging within Preserve in Planning Area 16. This species was observed during 2017 focused coastal California gnatcatcher surveys. The yellow warbler was not mapped because the bird was frequently moving and calling within sparse chaparral, and was likely to be a migrant due to unsuitable nesting habitat.

Invertebrates

San Diego Fairy Shrimp **(Branchinecta sandiegonensis)*, Federally Endangered/Group 1***

San Diego fairy shrimp is a federally endangered, MSCP Covered, and County Group 1 species. In 2015 and 2016, focused surveys were conducted within the Study Area, which includes the Land Exchange Area and areas outside the Land Exchange Area along the existing segments of Proctor Valley Road. A total of 105 features were identified within the Study Area as potential suitable habitat for vernal pool branchiopods. Most of the features were located alongside or

within existing dirt roads within the Study Area and are moderately disturbed in character. Many of the features detected show evidence of historical off-highway-vehicle disturbance (i.e., shaped like tire tracks). The features detected were road ruts (depressions that are typically formed by vehicular traffic within or immediately adjacent to roadways, generally lack aquatic vegetation, and are heavily disturbed by vehicular traffic), ephemeral basins (surface depressions that retain sufficient water level, support aquatic vegetation, and generally lack vehicle disturbance, or vernal pools (depressions that retain sufficient water level, support vernal pool indicator plant species, and support vernal pool branchiopods).

Of the 105 features surveyed, 15 supported either the non-special-status versatile fairy shrimp or the federally listed endangered San Diego fairy shrimp with an additional 11 containing immature fairy shrimp that were unidentifiable to species (i.e., *Branchinecta* sp.). Throughout the focused fairy shrimp surveys conducted in 2014/2015 and 2015/2016, a total of 49 features (39 features in 2014/2015 and 10 features in 2015/2016) were identified as potential suitable habitat for vernal pool branchiopods within the Land Exchange Area. Within the Land Exchange Area, nine features were found to support fairy shrimp during the focused protocol surveys. Of these nine features, five features had San Diego fairy shrimp and were all characterized as road ruts (A12, A22, A23, A27, and D4) (Figures 3-1A through 3-1D, Fairy Shrimp Survey Area and Results). Four of the features supported versatile fairy shrimp. The Land Exchange Alternative has been designed to avoid the one vernal pool (B2) and all of the other features occupied by San Diego fairy shrimp, including the associated watersheds.

Quino Checkerspot Butterfly (**Euphydryas editha quino**)*, Federally Endangered/County Group 1*

The Quino checkerspot butterfly is a FE and County Group 1 species. This species is found only in western Riverside County, southern San Diego County, and northern Baja California, Mexico (USFWS 2003). This species is found on sparsely vegetated hilltops, ridgelines, and occasionally on rocky outcrops in open chaparral and coastal sage scrub habitat (typically at less than 3,000 feet amsl). This species requires host plants within these vegetation communities for feeding and reproduction. The primary larval host plant is dotseed plantain; however, several other species have been documented as important larval host plants, including desert plantain, sometimes called woolly plantain (*Plantago patagonica*); thread-leaved bird's beak (*Cordylanthus rigidus*); white snapdragon (*Antirrhinum coulterianum*); owl's clover; and Chinese houses (*Collinsia* spp.) (USFWS 2003). Although not observed within the Land Exchange Alternative, this species is described in more detail herein because it has previously been recorded within the Land Exchange Alternative (CDFW 2016c; HELIX 2017; USFWS 2015).

Host Plant Distribution within Non-Impacted Portions of the Land Exchange Area (2016 Mapping)

HELIX completed host plant mapping within the Otay Ranch RMP and MSCP Preserve in 2016 (see Figures 4-2a-ff in the *Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative*). A total of 2.12 acres of Quino checkerspot butterfly host plants were mapped within the Preserve. Results are noted below:

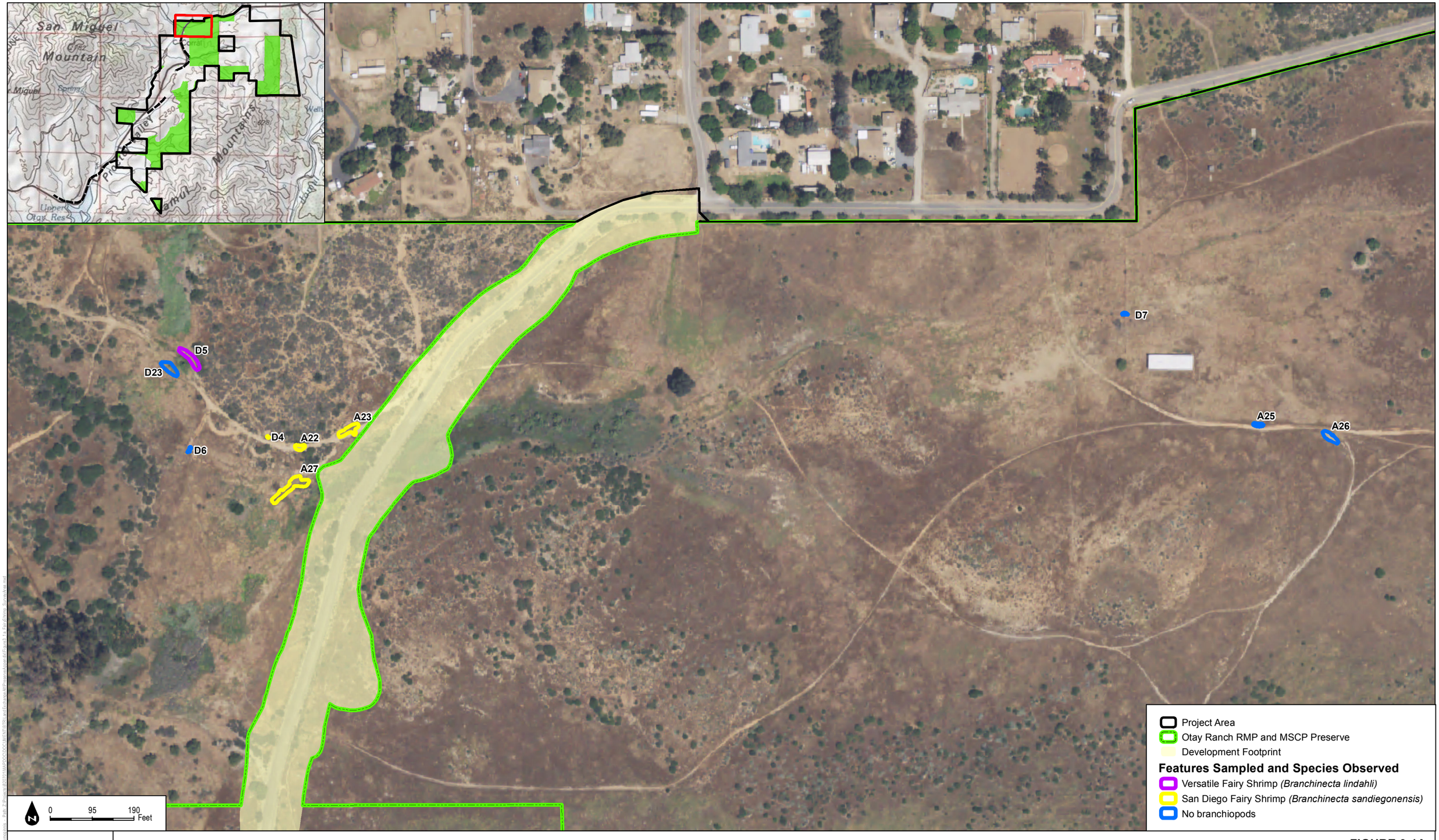
- 55% of the host plant locations within the Otay Ranch RMP Preserve (78 points and patches) were mapped as Low density (1–100 plants).
- 31% of the host plant locations within the Otay Ranch RMP Preserve (44 points and patches) were mapped as Medium density (100–1,000 plants).
- 14% of the host plant locations within the Otay Ranch RMP Preserve (19 points and patches) were mapped as High density (1,000–10,000 plants), as shown in Figures 4-2a-ff in the *Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative*.
- The High-density host plant locations (1,000–10,000 individuals) within the Otay Ranch RMP Preserve occurred within openings of coastal sage scrub and chaparral.

The majority of the host plant locations in the non-impacted areas (127 of the 141 mapped locations; 90%) were small points ranging from a few square feet to 250 square feet in size. Furthermore, of the 127 locations, the overwhelming majority of these (118 of the 127 locations; 93%) were Low density (1–100 plants) or Medium density (100–1,000 plants), and most occurred within a matrix of chaparral and coastal sage scrub communities.

Mammals

San Diego Black-Tailed Jackrabbit* (Lepus californicus bennettii), *SSC/County Group 2

The San Diego black-tailed jackrabbit is a SSC and County Group 2 species. It is confined to coastal Southern California, with marginal eastern records being Mount Piños, Arroyo Seco, Pasadena, San Felipe Valley, and Jacumba (Hall 1981). It is found in many diverse habitats, but primarily in arid regions supporting short-grass habitats. Jackrabbits typically are not found in high grass or dense brush where it is difficult for them to move quickly, and the openness of open scrub habitat likely is preferred over dense chaparral. Jackrabbits are common in grasslands that are overgrazed by cattle, and they are well adapted to using low-intensity agricultural habitats (Hall 1981). As previously stated, jackrabbits are a primary prey source for golden eagles.



DUDEK

SOURCE: Bing Maps 2017; Hunsaker 2016

FIGURE 3-1A

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19 - Land Exchange Alternative Preserve Status Report

NOTE: Survey areas may include additional acreage outside of the Project Area

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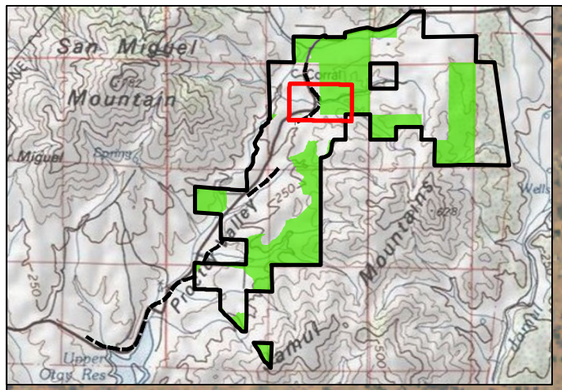

AA3
AA4
AA2

0 95 190 Feet

Project Area
Otay Ranch RMP and MSCP Preserve
Development Footprint

Features Sampled and Species Observed

No branchiopods

SOURCE: Bing Maps 2017; Hunsaker 2016

FIGURE 3-1B

Fairy Shrimp Survey Area and Results

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Otay Ranch Village 14 and Planning Areas 16/19 - Land Exchange Alternative Preserve Status Report

NOTE: Survey areas may include additional acreage outside of the Project Area

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