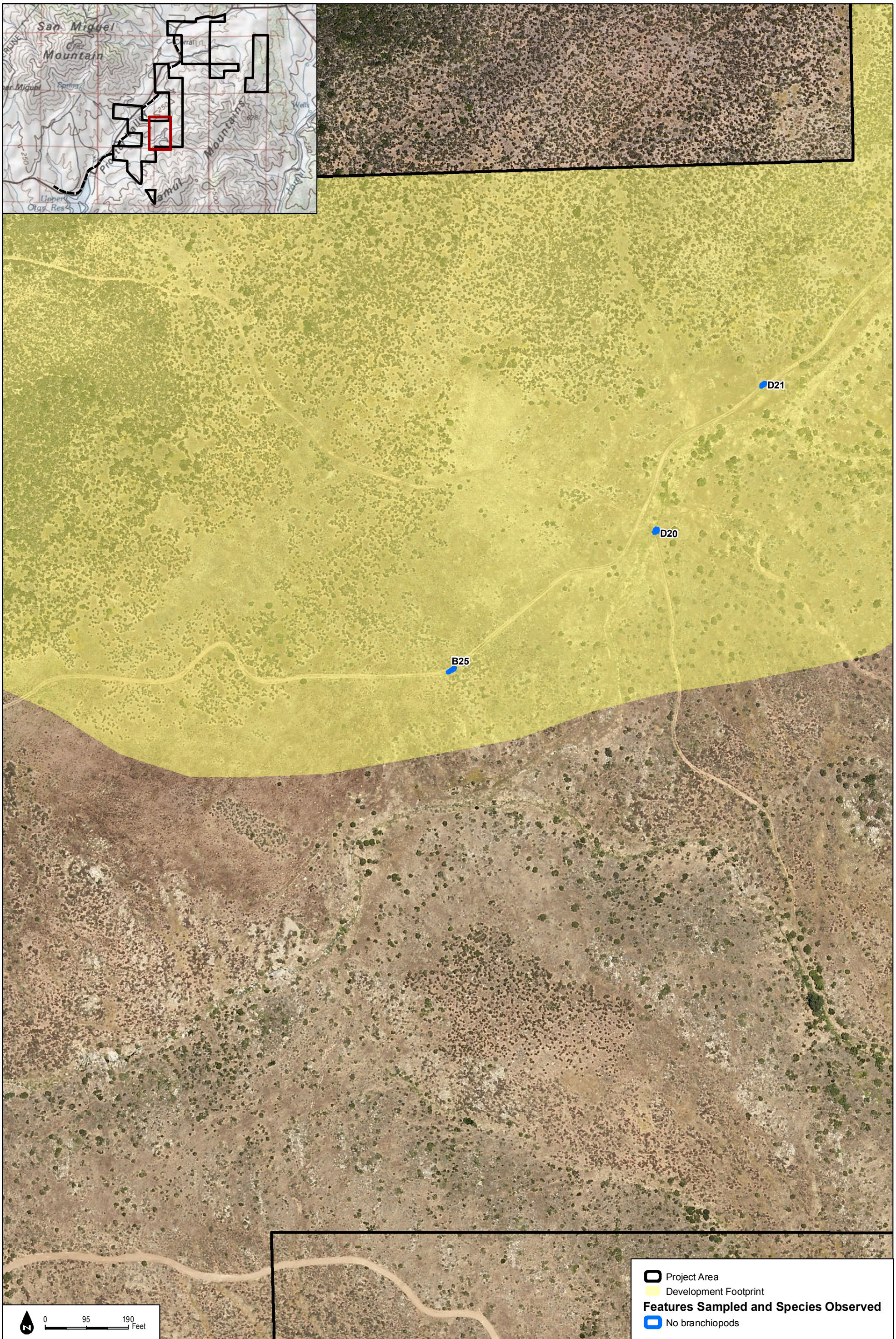

DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

Figure 3-6f

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

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

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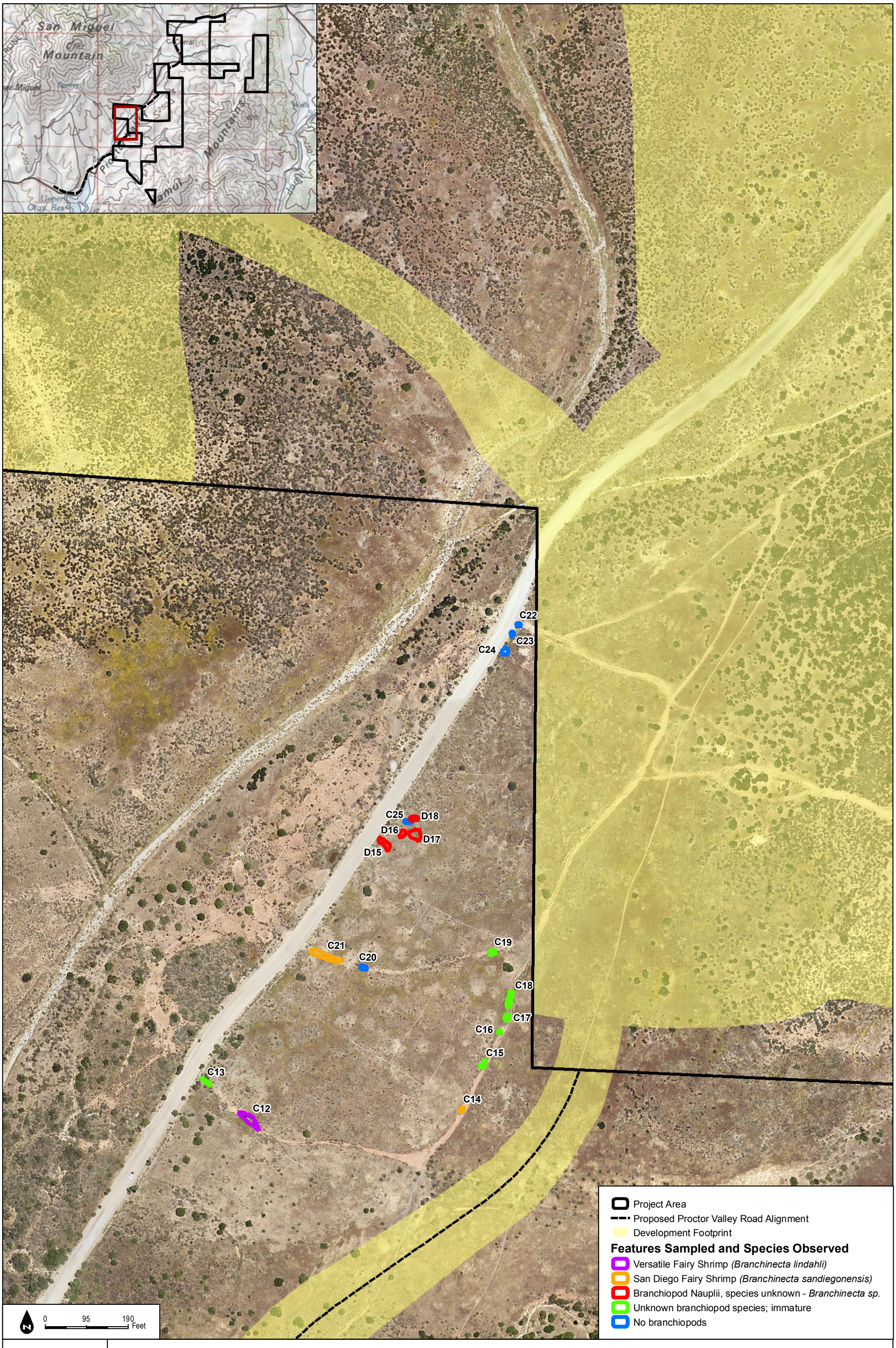

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SOURCE: NAIP 2016; Hunsaker 2017

Figure 3-6g

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

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

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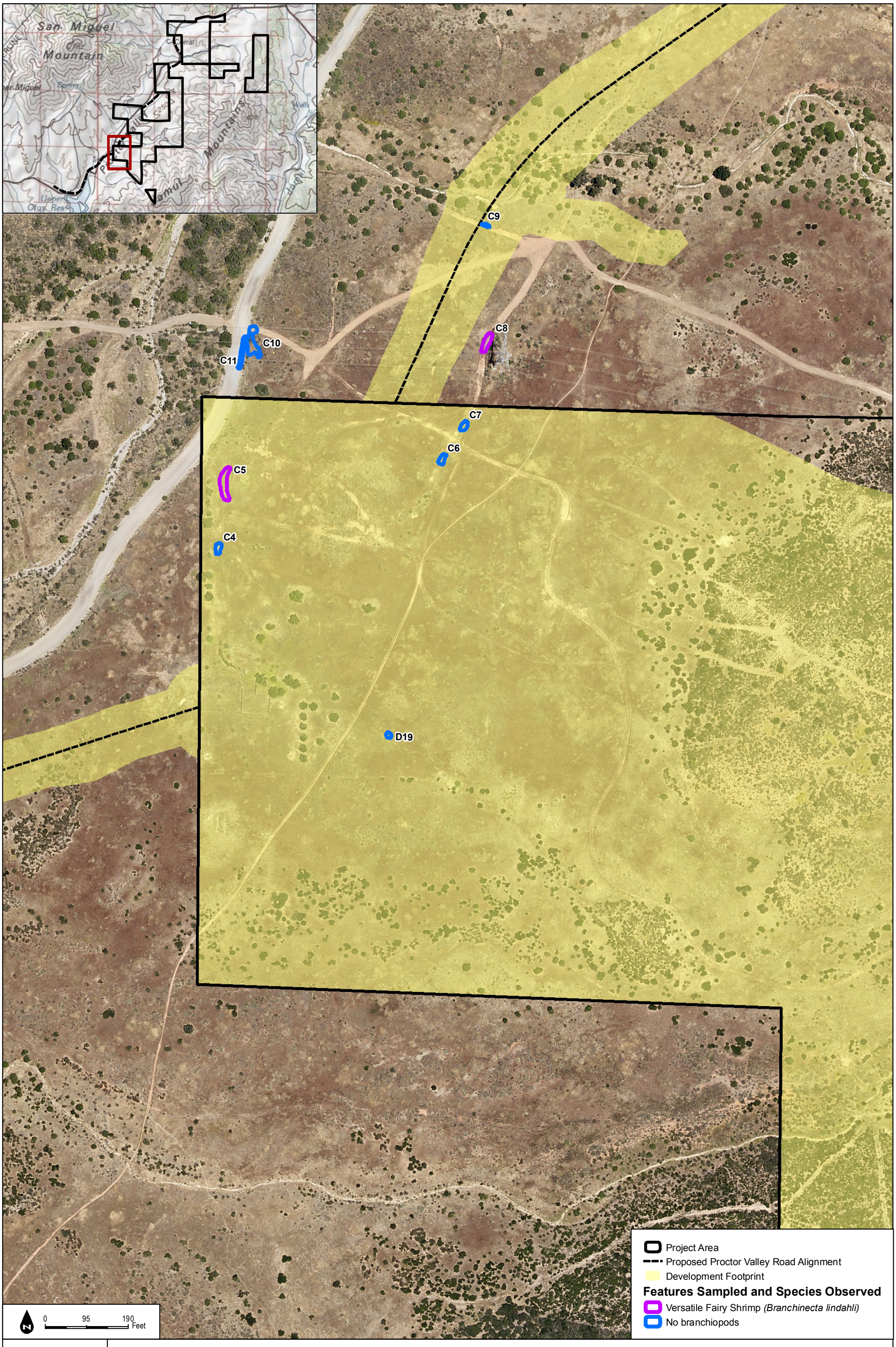

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SOURCE: NAIP 2016; Hunsaker 2017

Figure 3-6h

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

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

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SOURCE: NAIP 2016; Hunsaker 2017

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Figure 3-6i

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

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

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Immediately after sample collection, the soil was carefully placed into a brown paper lunch-sized bag and labeled according to the feature name. Sample bags from each feature were then placed into another paper bag or box for organization. Samples collected from the features were submitted to Charles Black of Ecological Restoration Service on the same day of collection (October 22, 2015). Results of the surveys are discussed in Section 4.6.1.

The samples were processed per the USFWS 2015 guidelines (USFWS 2015b) by Charles Black of Ecological Restoration Service (TE-835549). The collected samples were hydrated for approximately 1–2 hours in tap water and then washed through a set of sieves. Material passing through a Number 45 (0.0139-inch) USA Standard Testing Sieve, A.S.T.M.E.-11 specification and caught on a Number 70 (0.0083-inch) sieve was rinsed into a container with approximately 50 milliliters of a saturated brine solution to float organic material, including fairy shrimp cysts. The material floating on the brine was decanted onto a paper filter on a filter funnel, and water was removed through the filter paper by vacuum suction. The material left on the paper was examined under a 6.3-570x power Olympus SZX9 Zoom Stereo Microscope. Distinctive fairy shrimp cysts, if present, were individually counted (if less than approximately 50) or estimated (for larger numbers) by examining one-quarter or one-half subsections of the filter and multiplying the subset by the appropriate factor. The presence of ostracod shells and *cladoceran ephippia* were also noted in samples. Two fairy shrimp species were observed in some of the features in the Project Area, including versatile fairy shrimp (*Branchinecta lindahli*) and the federally endangered (FE) San Diego fairy shrimp (*B. sandiegonensis*) (Figures 3-6a through 3-6i).

Due to the new USFWS survey guidelines for fairy shrimp and the predicted El Niño conditions for the 2015/2016 wet season, Dudek biologists Thomas Liddicoat and Paul Lemons conducted another wet-season survey, with focus on areas within the Development Footprint and on Feature B9, which had an undetermined fairy shrimp identification during the 2014/2015 survey. The survey was conducted from November 2015 through May 2016 in accordance with the USFWS 2015 survey guidelines (USFWS 2015b). A total of 19 survey visits were completed (Table 3-1). All identified features were observed dry in May 2016, thus concluding the 2015/2016 wet-season survey. During the 2015/2016 wet season, all 25 features identified and sampled were mapped using a GPS unit, and the presence of fairy shrimp was recorded were applicable (Figures 3-6a through 3-6i). The results of the surveys are discussed further in Section 4.6.1 of this report. The survey report itself is provided in Appendix F.

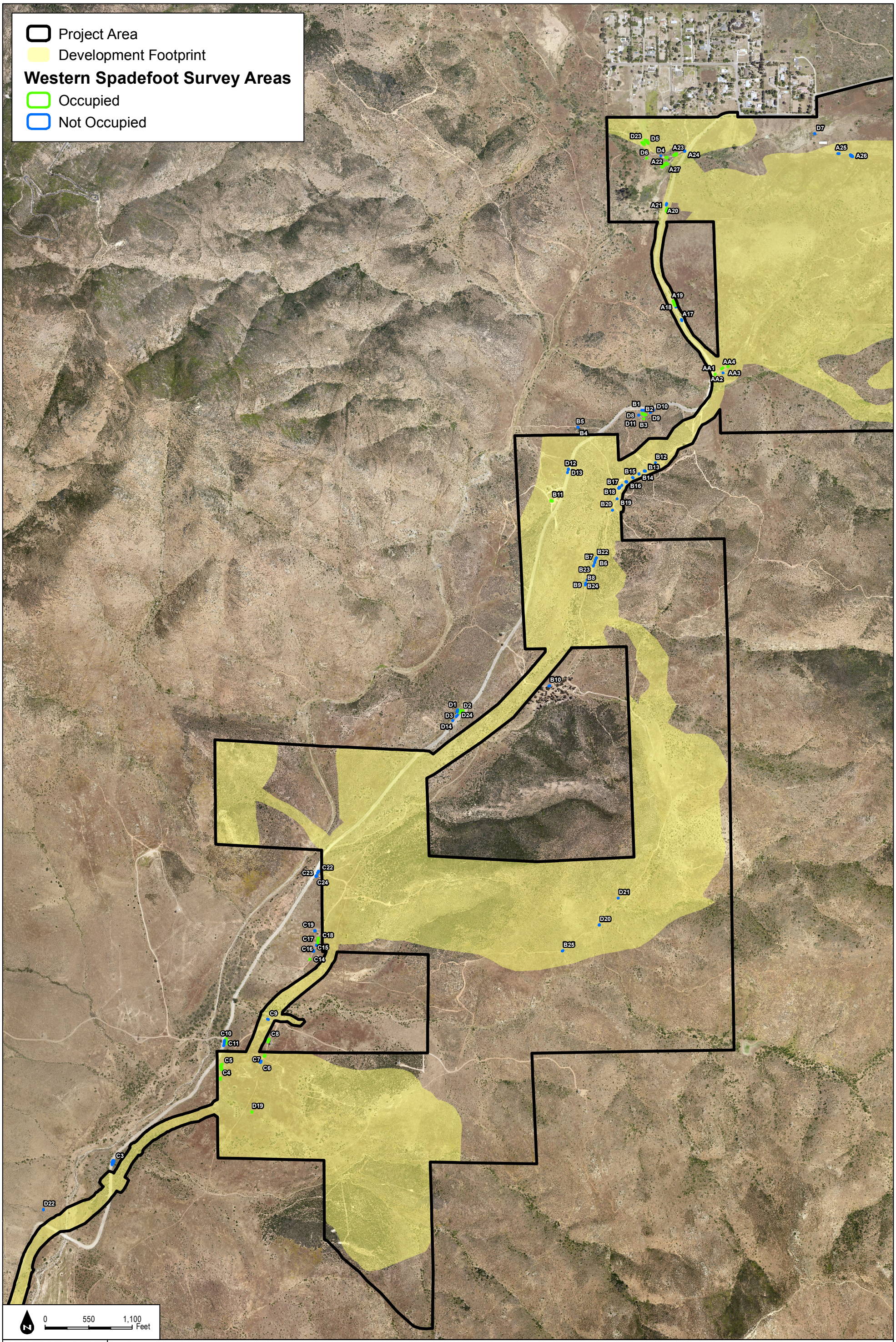
Thomas Liddicoat conducted additional dry-season surveys on November 18, 2016. Dry soil samples were collected using the same techniques as the 2015 dry survey described above, and samples were taken from within 17 known features. The dry-season survey resulted in the detection of San Diego fairy shrimp in features in D4 and D9.

The Proposed Project was designed to avoid all nine features supporting San Diego fairy shrimp (i.e., A12, A22, A23, A27, B2, C14, C21, D4, and D9).

3.3.9 Western Spadefoot

Generally, surveys to detect western spadefoot should begin early in the rainy season after adequate rainfall to identify areas of suitable habitat (i.e., ephemeral pooling or ponding) on site. The toad species is unique in that it spends the majority of the year underground in a state of torpor (i.e., dormancy). Western spadefoot digs a long and narrow tunnel and encapsulates itself several feet belowground. After substantial winter rainfall results in areas of pooling or ponding, toads emerge at night to forage and mate at vernal pools, pond edges, and along slow-moving stream courses.

To provide a better understanding of the distribution of western spadefoot within and adjacent to the Project Area, focused surveys were conducted during the 2016/2017 winter rainy season. Western spadefoot egg masses, tadpoles, and metamorphs were observed in a few areas adjacent to Proctor Valley Road and outside of the Project Area by Dudek biologists while conducting focused surveys for vernal pool fairy shrimp during 2016 and 2017. The presence of western spadefoot adjacent to the Project Area prompted the need for focused surveys within the Project Area. Based on past surveys conducted and Dudek biologists' familiarity with the Project Area, 78 potential suitable habitat areas (i.e., pools/ponds) were located within the Project Area (Figure 3-7, Proposed Western Spadefoot Survey Areas). Known pooling areas were investigated for evidence of western spadefoot. At each pool feature, a visual inspection was conducted to detect egg masses, tadpoles, metamorphs, and burrows. If the visual inspection did not result in the detection of the species, then immediate subsequent dip-netting was performed to sample areas within the pooled area. If a pool was substantially turbid (i.e., not clear water), dip netting was performed. Data collected for each specific pool area that was found to support western spadefoot included pool size, water depth, pool condition, water temperature, vegetation, and other species present. Once a pool was identified as supporting western spadefoot, that pool was not resurveyed during subsequent field efforts. Results of the surveys are discussed in Section 4.6.1 of this report.



SOURCE: NAIP 2016; Hunsaker 2017

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FIGURE 3-7

Western Spadefoot Survey Areas

Otay Ranch Village 14 and Planning Areas 16/19

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3.4 Survey Limitations

Direct observations of special-status plants and wildlife species were recorded during vegetation mapping, jurisdictional delineations, rare plant surveys, focused wildlife surveys, and habitat assessments. In addition to direct observations of wildlife species, signs such as tracks and scat were also recorded. Special-status species observed during these surveys were recorded and/or mapped. San Diego County experienced drought conditions over the last 5 years that affected plant growth. However, more recent years, particularly 2017, have seen an increase in rainfall. Fluctuations in annual plant populations and effect rates of germination are associated with variations in rainfall and other climatic conditions. Therefore, in addition to years of focused surveys, an emphasis was placed on conducting habitat assessments for special-status plant species (Appendix G, List of Plant Species Observed). In addition, reference checks were conducted for populations of rare plants within the Project Area vicinity to determine appropriate survey timing.

Focused wildlife surveys were conducted per the appropriate protocols, where required, which resulted in wildlife surveys being conducted during the day. Birds represent the largest component of the vertebrate fauna. Since birds are active in the day, diurnal surveys maximized the number of observations of this portion of the fauna. Daytime surveys, however, may result in fewer observations of animals that are more active at night, such as mammals, including bats. Similarly, many species of reptiles and amphibians are nocturnal or cryptic in their habits and may be difficult to observe using standard meandering transects.

To account for survey limitations, biologists identified special-status wildlife species that could occur in the Project Area, based on pertinent distribution and habitat preference literature, ~~and~~ recorded off-site observations and extensive local experience of the Dudek wildlife biologists were analyzed based on their potential to occur, and adequate measures to avoid and minimize impacts to these species are provided in this report.

With specific regard to small mammal trapping, there is no indication that such an effort was necessary, given that the only listed mammal species that could occur~~s~~ within the region and for which suitable habitat occurs within the Project Area is the federally listed endangered Pacific pocket mouse (*Perognathus longimembris pacificus*). This species is now thought to be restricted to the coast from Camp Pendleton north to Dana Point in Orange County; therefore, the Project Area is outside the known range of Pacific pocket mouse, and the species is not expected to occur in the Project Area. Due to the low potential for bats to roost within the Development Footprint, focused surveys for bats were not conducted. Small patches of potential tree roosting habitat for bat species and rock outcrops that could provide roosting areas are located within the Otay Ranch RMP Preserve (eucalyptus trees in Planning Area 16 and oak riparian forest in Village 14), non-

graded LDA portions of the Project Area in the most eastern portion of Planning Area 16 and within the adjacent Conserved Open Space (small rock outcrops), and outside of the Project Area. Large boulders, caves, or cliffs were not observed within the Project Area. These features may occur outside of the Project Area within the adjacent mountains. Although there is foraging habitat within the Project Area, including the Development Footprint, any potential roosting habitat (large trees or rock outcrops) is located outside of the Development Footprint.

4 ENVIRONMENTAL SETTING (EXISTING CONDITIONS)

4.1 Site Description

The Proposed Project is located in Otay Ranch, southwest of the unincorporated community of Jamul and northeast of Bonita (Figure 1-1). The Otay Reservoir System is located to the south of the Project Area. Publicly owned open space borders the Project Area to the northwest and southeast. Specifically, the Project Area is located primarily southeast of Proctor Valley Road, within the Jamul Mountains U.S. Geological Survey (USGS) 7.5-minute quadrangle, Township 17 South, Ranges 1 East and 1 West, Sections 8, 9, 10, 15, 16, 17, 19, 20, 25, 29, 30, 31, and 32 (Figure 1-2). The approximate center of the Project Area is located at a latitude and longitude of 32°40′57″ north and 116°54′24″ west.

The entire Project Area is undeveloped. The on-site elevation ranges between 525 and 1,650 feet above mean sea level (amsl). The Project Area is diverse in topography and contains a flat valley along Proctor Valley Road and rolling hills within the remainder of the Project Area. The Project Area is bordered by San Miguel Mountain and the Jamul Mountains immediately to the northwest and southeast, with the foothills of these mountains encroaching into the Project Area. The two eastern portions of Planning Area 16 are located within portions of the Jamul Mountains and contain the highest elevations.

Nineteen soil types in 12 soil series occur within the Project Area: Diablo-Olivenhain complex, 9% to 30% slopes; Diablo clay, 15% to 30% slopes; Diablo clay, 9% to 15% slopes; Escondido very fine sandy loam, 9% to 15% slopes, eroded; Friant rocky fine sandy loam, 30% to 70% slopes; Friant rocky fine sandy loam, 9% to 30% slopes; Olivenhain cobbly loam, 2% to 9% slopes; Olivenhain cobbly loam, 9% to 30% slopes; Placentia sandy loam, 2% to 9% slopes; Placentia sandy loam, 5% to 9% slopes, eroded; Placentia sandy loam, thick surface, 2% to 9% slopes; Riverwash; San Miguel–Exchequer rocky silt loams, 9% to 70% slopes; Visalia gravelly sandy loam, 2% to 5% slopes; Visalia sandy loam, 2% to 5% slopes; Visalia sandy loam, 5% to 9% slopes; Vista rocky coarse sandy loam, 5% to 15% slopes; Water; Wyman loam, 2% to 5% slopes (USDA 2014). Of those soil types, the Diablo, Olivenhain, and San Miguel are known to support special-status plant species.

4.2 Habitat Types/Vegetation Communities

The Project Area, which totals 1,369 acres, is dominated by chaparral and sage scrub, with some representation of grassland. Various wetland plant communities also occur in the Project Area. The vegetation communities and land cover types within the Project Area are described below. Acreages are presented in Tables 4-1 and 4-2. Spatial distributions of vegetation communities are

presented in Figure 4-1, Biological Resources – Legend, and Figures 4-1a through 4-1cc, Biological Resources.

~~In September 2010, the California Department of Fish and Game (now CDFW) published the List of California Vegetation Alliances and Associations (CDFG 2010), which uses the scientific name of the dominant species in that alliance as the alliance name, and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2014). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2014):~~

~~1 = critically imperiled~~
~~2 = imperiled~~
~~3 = vulnerable to extirpation or extinction~~
~~4 = apparently secure~~
~~5 = demonstrably widespread, abundant, and secure~~

~~For example, G1 would indicate that a vegetation community is critically imperiled across its entire range (i.e., globally). A rank of S3 would indicate the vegetation community is vulnerable and at moderate risk within a particular state or province, although it may be more secure elsewhere (NatureServe 2014). Because NatureServe ranks vegetation communities at the global level, they have few rankings at the state level available. However, the List of California Vegetation Alliances and Associations (CDFG 2010) includes state-level rarity rankings (i.e., the subnational (S) rank) for vegetation communities. The List of California Vegetation Alliances and Associations (CDFG 2010) is considered the authority for ranking the conservation status of vegetation communities in California. Tables 4-1 and 4-2 provide the acreages of each vegetation community or land cover within the Project Area.~~

Table 4-1
Vegetation Communities and Land Cover Types in the Project Area

Habitat Types/Vegetation Communities	Code[a]	Project Area (acres)			Total Acres[c]
		Village 14	*Planning Areas 16/19*	*Off-Site Improvement Areas[b]*	
Sensitive Upland Communities					
Granitic chamise chaparral	37210	289.0	—	18.8	307.8
Granitic chamise chaparral (disturbed)	37210	0.8	—	—	0.8
Granitic southern mixed chaparral	37121	—	94.9	4.3	99.2

Table 4-1
Vegetation Communities and Land Cover Types in the Project Area

Habitat Types/Vegetation Communities	Code[a]	Project Area (acres)			Total Acres[c]
		Village 14	*Planning Areas 16/19*	*Off-Site Improvement Areas[b]*	
Diegan coastal sage scrub	32500	309.3	373.0	28.8	711.1
Diegan coastal sage scrub (disturbed)	32500	71.5	11.9	9.6	93.0
Diegan coastal sage scrub – *Baccharis* dominated	32530	—	—	0.7	0.7
Diegan coastal sage scrub – *Baccharis* dominated (disturbed)	32530	—	—	0.6	0.6
Non-native grassland	42200	34.9	62.4	14.9	112.2
Subtotal of Sensitive Upland Communities		*705.4*	*542.3*	*77.8*	*1,325.5*
Jurisdictional Aquatic Resources					
Cismontane alkali marsh (including disturbed)	52310	1.1	6.7	—	7.8
Mulefat scrub	63310	0.2	0.5	0.3	1.0
Coastal and valley freshwater marsh	52410	—	—	0.4	0.4
Southern coast live oak riparian forest	61310	0.7	—	—	0.7
Southern willow scrub	63320	—	0.3	0.1	0.3
Open water	64100	—	0.4	—	0.4
Unvegetated channel	64200	See Section 4.7	See Section 4.7	0.1[d]	0.1
Subtotal of Jurisdictional Aquatic Resources		*2.0*	*7.9*	*0.9*	*10.8*
Non-Sensitive Communities and Land Covers					
Eucalyptus woodland	79100	—	2.7	0.2	2.9
Urban/developed	12000	3.0	1.1	3.2	7.3
Disturbed habitat	11300	13.2	5.9	3.4	22.5
Subtotal of Non-Sensitive Communities and Land Covers		*16.2*	*9.7*	*6.7*	*32.7*
Total[c]		**723.7**	**559.9**	**85.4**	**1,369.0**

[a] Oberbauer et al. 2008.
[b] Off-site improvement areas are shown in Table 4-2.
[c] May not total due to rounding.
[d] Unvegetated stream channel is also an overlay within various vegetation communities and is therefore not fully represented in this table. See Section 4.7.

Table 4-2
Vegetation Communities and Land Cover Types by Off-Site Improvement Area (acres)

Habitat Types/Vegetation Communities	Off-Site Improvement Areas				Total Off-Site Area (Acres)[a]
	Proctor Valley Road South	*Proctor Valley Road Central*	*Proctor Valley Road North*	*Planning Areas 16/19 Roads*	
Sensitive Upland Communities					
Granitic chamise chaparral	—	12.5	6.3	—	18.8
Southern mixed chaparral	3.2	—	—	1.1	4.3
Diegan coastal sage scrub	11.6	—	2.6	14.7	28.8
Diegan coastal sage scrub (disturbed)	4.1	5.5	<0.1	—	9.6
Diegan coastal sage scrub – *Baccharis* dominated	0.7	—	—	—	0.7
Diegan coastal sage scrub – *Baccharis* dominated (disturbed)	—	0.6	—	—	0.6
Non-native grassland	9.4	0.7	4.9	—	14.9
Subtotal	*28.9*	*19.3*	*13.8*	*15.8*	*77.8*
Jurisdictional Aquatic Resources					
Mulefat scrub	0.3	—	—	—	0.3
Coastal and valley freshwater marsh	0.4	—	—	—	0.4
Southern willow scrub	—	—	0.1	—	0.1
Unvegetated channel[b]	0.1	—	—	—	0.1
Subtotal	*0.8*	—	*0.1*	—	*0.9*
Non-Sensitive Communities and Land Covers					
Eucalyptus woodland	0.1	0.1	—	—	0.2
Urban/developed	1.4	—	1.7	—	3.2
Disturbed habitat	1.5	0.4	1.5	—	3.4
Subtotal	*3.0*	*0.5*	*3.2*	—	*6.7*
Total[a]	**32.7**	**19.8**	**17.1**	**15.8**	**85.4**

[a] May not total due to rounding. This does not include 0.5 acres of impacts that may be required for widening Proctor Valley Road.
[b] Unvegetated stream channel is also an overlay within various vegetation communities and is therefore not fully represented in this table. See Section 4.7.

Granitic Chamise Chaparral (37210)

Granitic chamise chaparral contains shrubs, overwhelmingly dominated by chamise, from 3 to 10 feet tall, with little cover provided by other species. Stump sprouting allows this vegetation to adapt to repeated fires. Chamise chaparral typically occurs on dry slopes and ridges (Holland 1986). The chamise chaparral alliance is ranked by CDFW as a G5S5 alliance (CDFG 2010). This ranking indicates that globally and within California the alliance is widespread, abundant, and is considered secure (CDFG 2010; NatureServe 2014).

Project Area

Special-status Wildlife

- Amphibian=A-WESP=Western spadefoot
- Bird=B-BUOW=burrowing owl (sign)
- Bird=B-CAGN=Coastal California gnatcatcher
- Bird=B-HOLA=California horned lark
- Bird=B-LEOW=Long-eared owl
- Bird=B-LOSH=Loggerhead shrike
- Bird=B-NOHA=Northern harrier
- Bird=B-NUWO=Nuttall's woodpecker
- Bird=B-RCSP=Southern California rufous-crowned sparrow
- Bird=B-WEBL=Western bluebird
- Bird=B-WTKI=White-tailed kite
- Mammal=M-AMBA=American badger (burrow only)
- Mammal=M-BTJR=San Diego black-tailed jackrabbit
- Reptile=R-BHLI=Blainville's horned lizard
- Reptile=R-COWH=Coastal whiptail
- Reptile=R-ROBO=Rosy boa
- San Diego Fairy Shrimp

Special-status Plants

- Dunn's mariposa lily
- Gander's pitcher sage
- Munz's sage
- Orcutt's brodiaea
- Otay manzanita
- Otay tarplant
- Palmer's grapplinghook
- Robinson's pepper-grass
- San Diego County needle grass
- San Diego County viguiera
- San Diego barrel cactus
- San Diego goldenstar
- San Diego marsh-elder
- San Diego sagewort
- San Miguel Savory
- ashy spike-moss
- delicate clarkia
- golden-rayed pentachaeta
- graceful tarplant
- southwestern spiny rush
- variegated dudleya
- western dichondra
- western ponysfoot

Vegetation Communities

- CAM=Cismontane Alkali Marsh
- CC=Chamise Chaparral
- CSS=Diegan Coastal Sage Scrub
- CSSB=Diegan Coastal Sage Scrub - Baccharis-dominated
- DEV=Developed
- DH=Disturbed Habitat
- EUC=Eucalyptus Woodland
- FWM=Freshwater Marsh
- MFS=Mulefat Scrub
- NNG=Non-Native Grassland
- ORF=Oak Riparian Forest
- OW=Open Water
- SMX=Southern Mixed Chaparral
- SWS=Southern Willow Scrub
- UVC=Unvegetated Channel
- dCAM=disturbed Cismontane Alkali Marsh
- dCC=disturbed Chamise Chaparral
- dCSS=disturbed Coastal Sage Scrub
- dCSSB=disturbed Diegan Coastal Sage Scrub - Baccharis-dominated

Jurisdictional Delineation

- ACOE/RWQCB/CDFW Waters or Streambed
- ACOE/RWQCB/CDFW Wetlands or Riparian Habitat
- Data Stations

Figure 4-1a
Figure 4-1b
Figure 4-1c
Figure 4-1d
Figure 4-1e
Figure 4-1f
Figure 4-1g
Figure 4-1h
Figure 4-1i
Figure 4-1j
Figure 4-1k
Figure 4-1l
Figure 4-1m
Figure 4-1n
Figure 4-1o
Figure 4-1p
Figure 4-1q
Figure 4-1r
Figure 4-1s
Figure 4-1t
Figure 4-1u
Figure 4-1v
Figure 4-1w
Figure 4-1x
Figure 4-1y
Figure 4-1z
Figure 4-1aa
Figure 4-1bb
Figure 4-1cc

N
0 1,300 2,600 Feet

SOURCE: Hunsaker 2017

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FIGURE 4-1

Biological Resources - Legend

Otay Ranch Village 14 and Planning Areas 16/19

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