



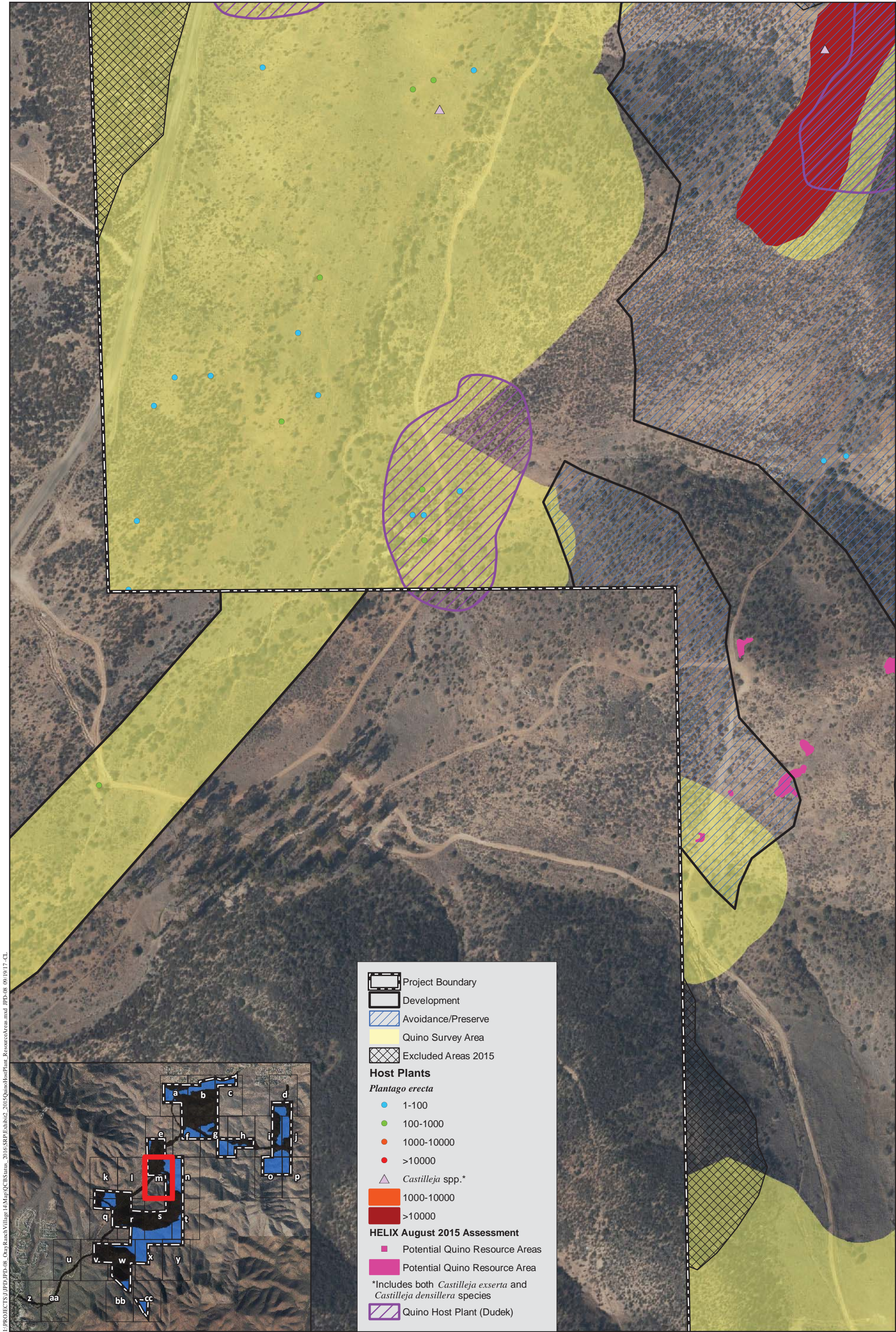
2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE



2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

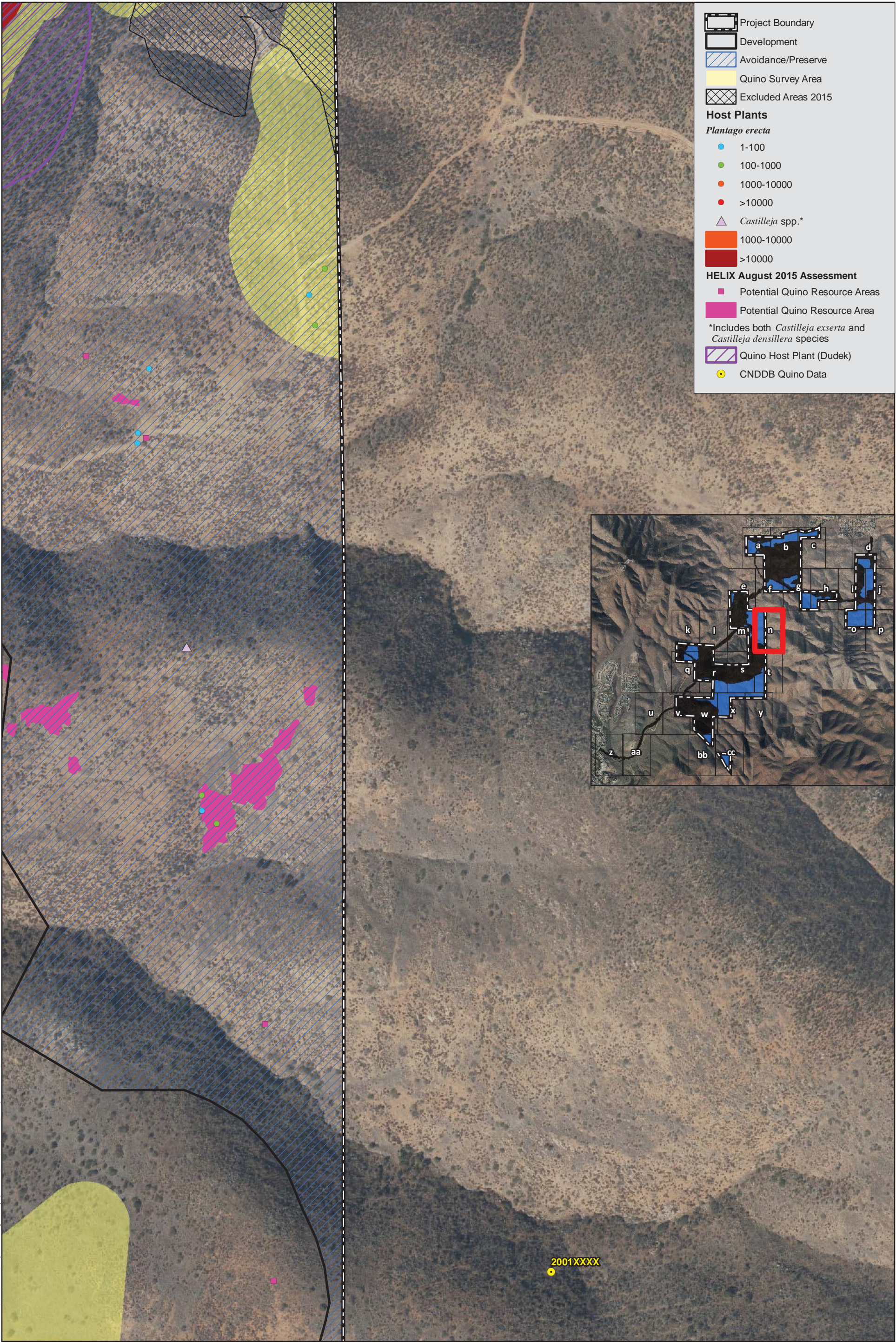
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DEVELOPMENT FOOTPRINT AND PRESERVE



2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

Exhibit 2m



2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

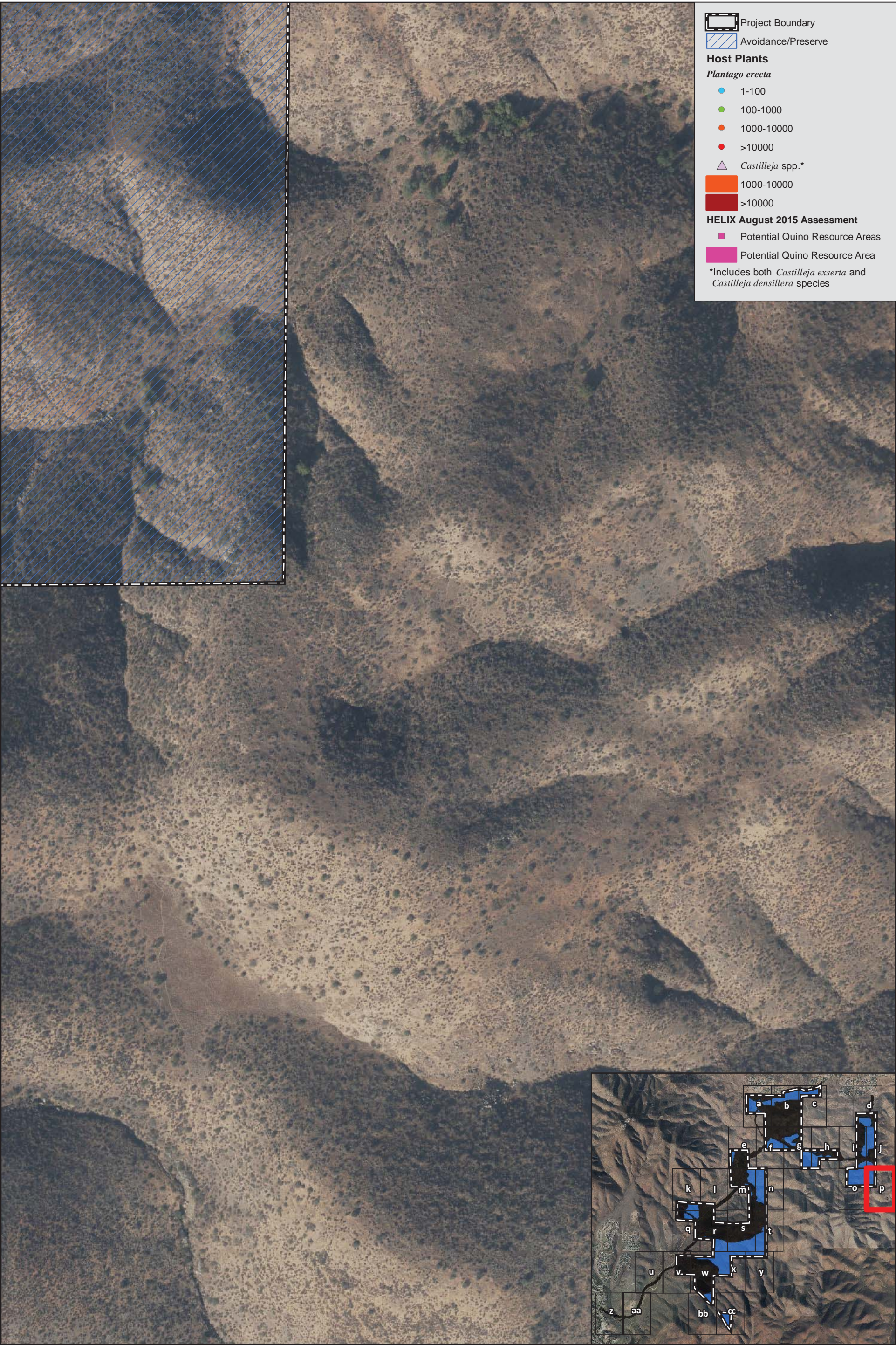
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DEVELOPMENT FOOTPRINT AND PRESERVE



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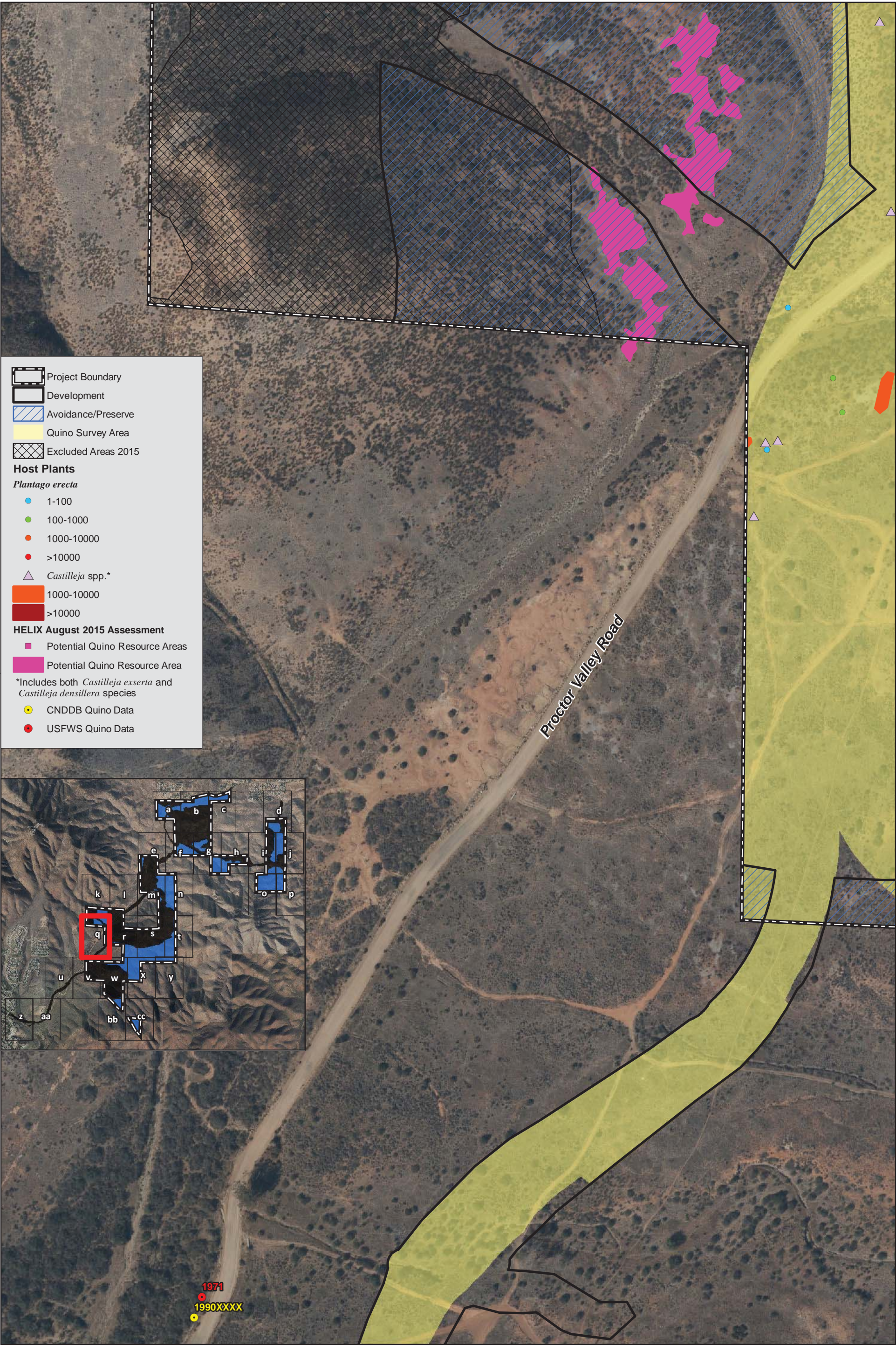
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DEVELOPMENT FOOTPRINT AND PRESERVE



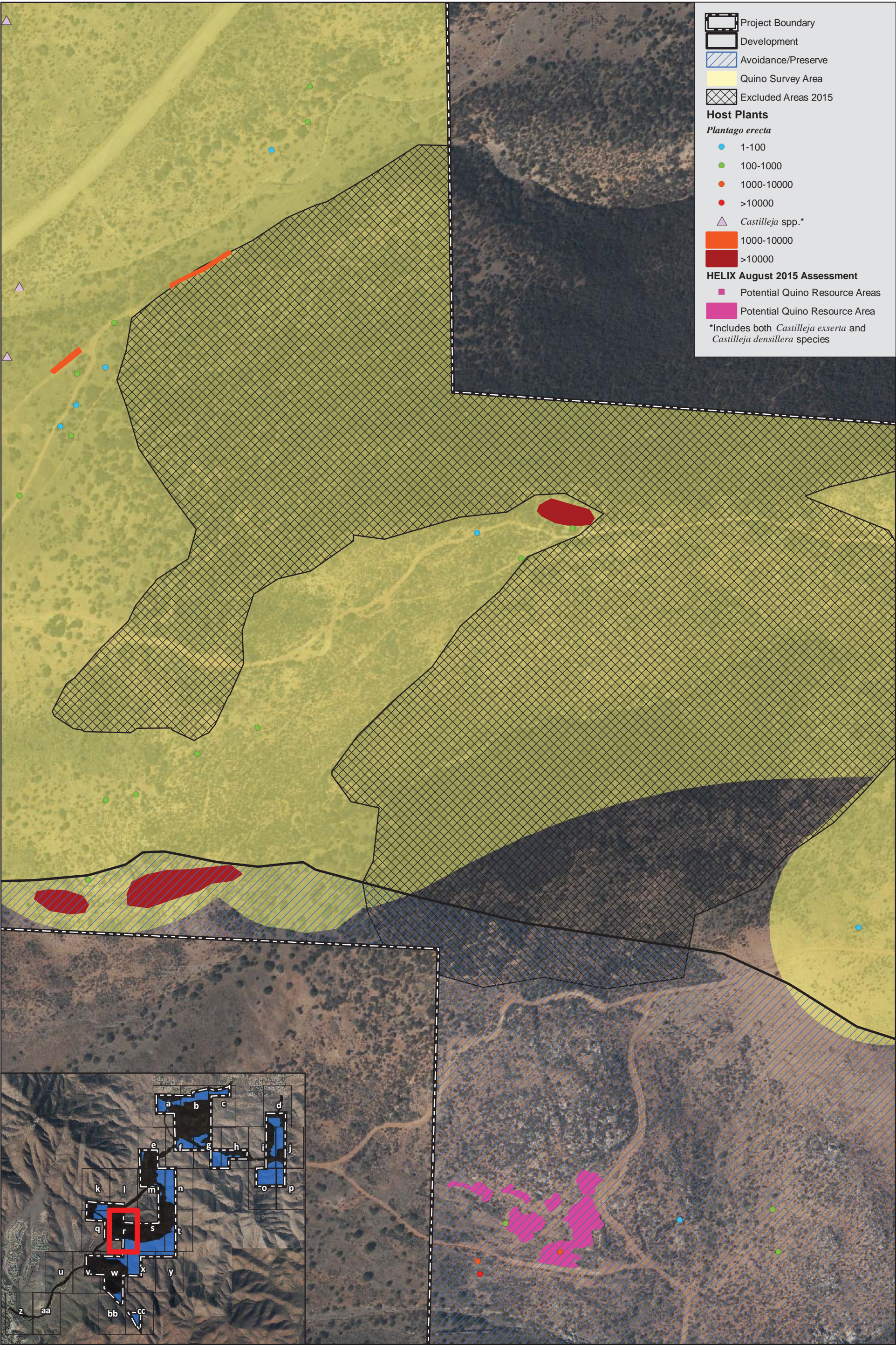
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DEVELOPMENT FOOTPRINT AND PRESERVE



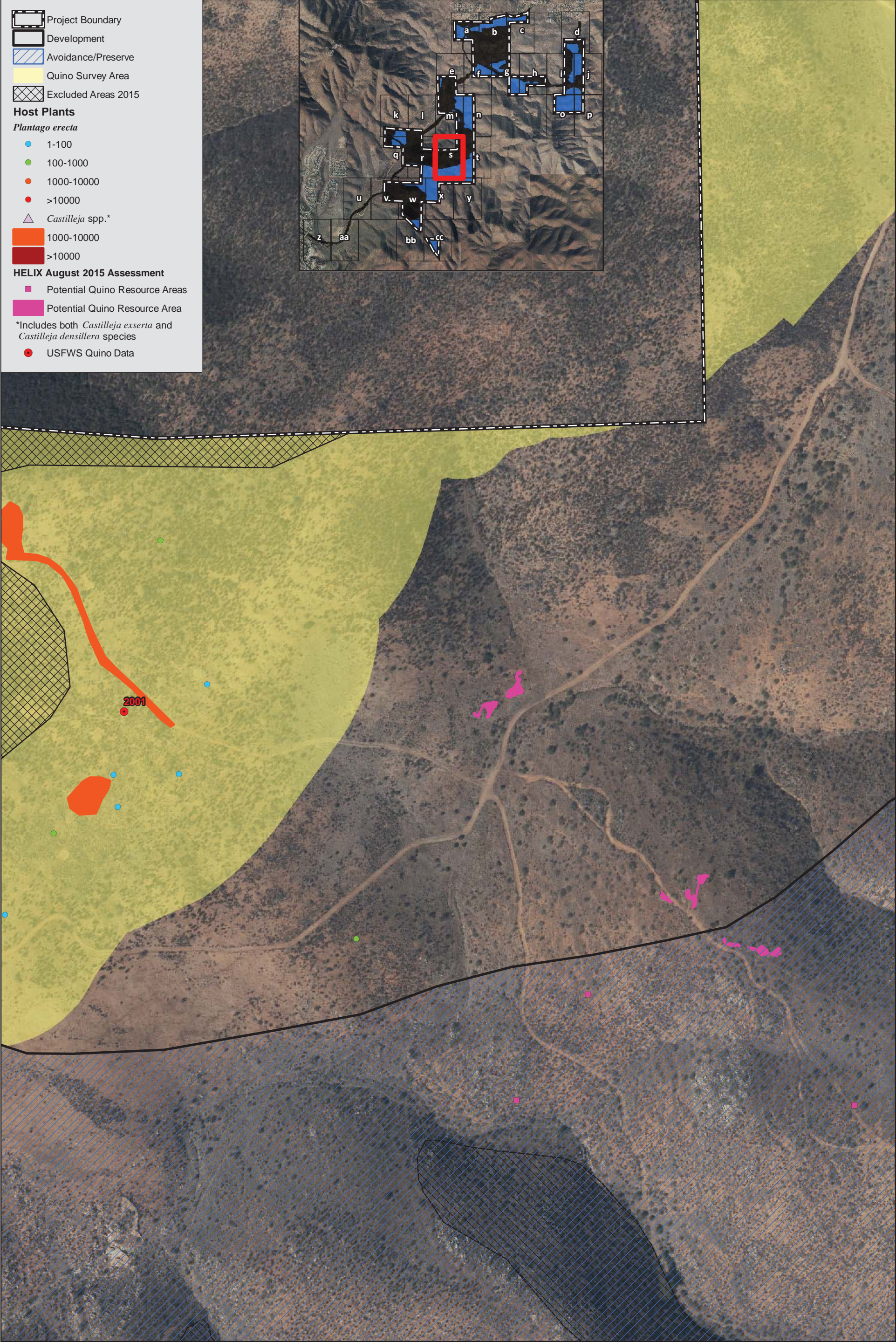
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OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE



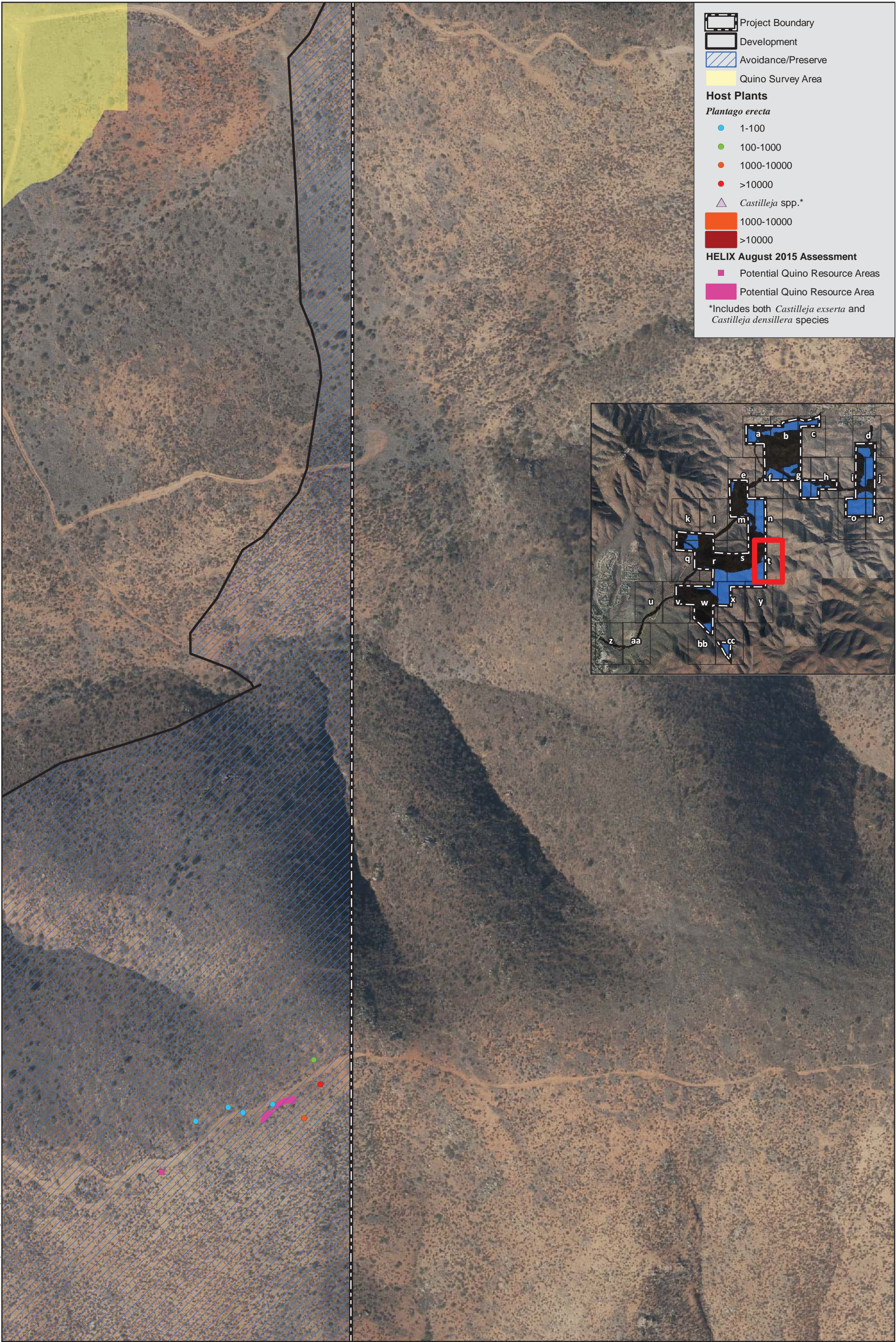
2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

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OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE



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Project Boundary

Development

Quino Survey Area

Excluded Areas 2015

Host Plants

Plantago erecta

1-100

100-1000

1000-10000

>10000

Castilleja spp.*

1000-10000

>10000

HELIX August 2015 Assessment

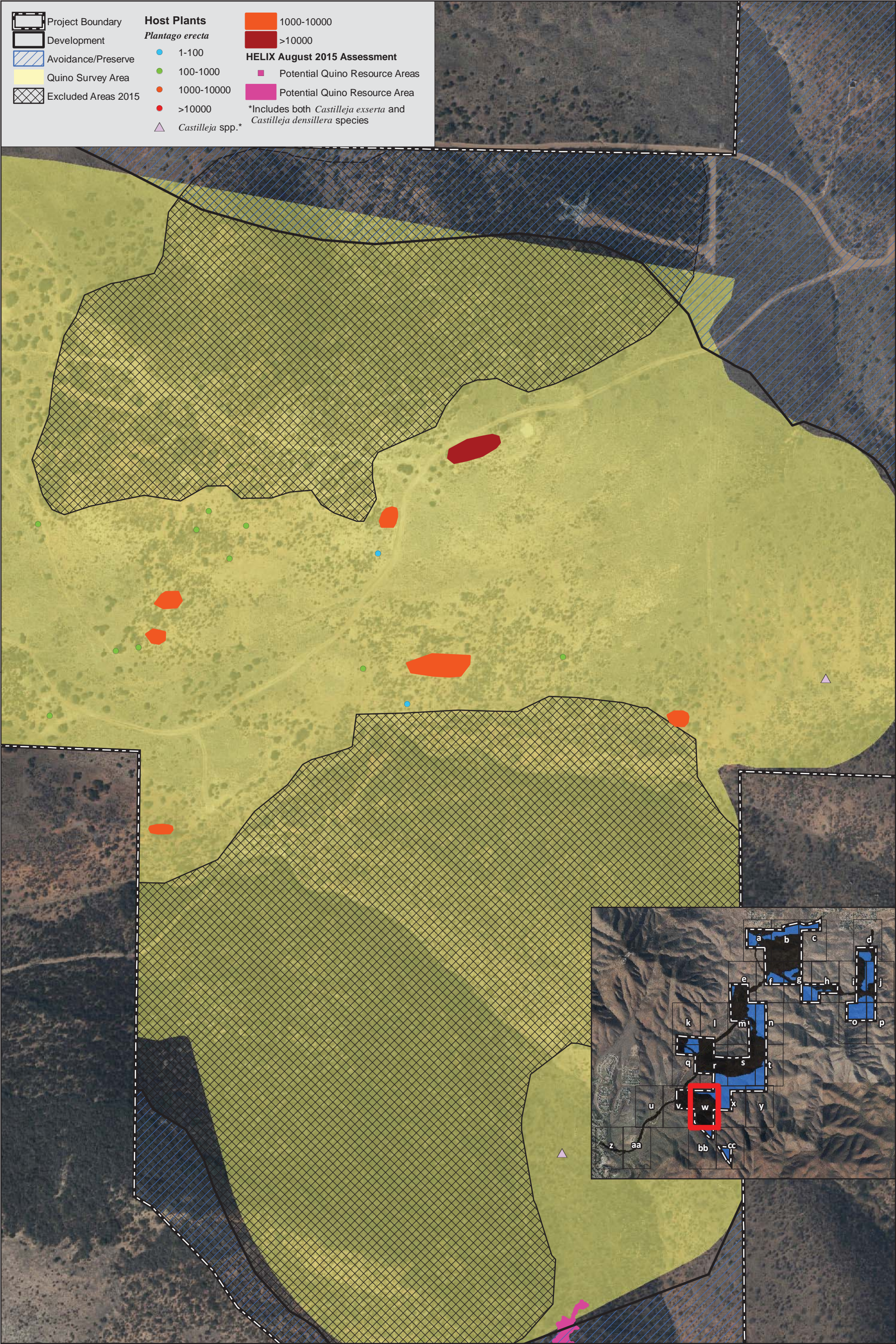
Potential Quino Resource Areas

Potential Quino Resource Area

*Includes both *Castilleja exserta* and *Castilleja densillera* species

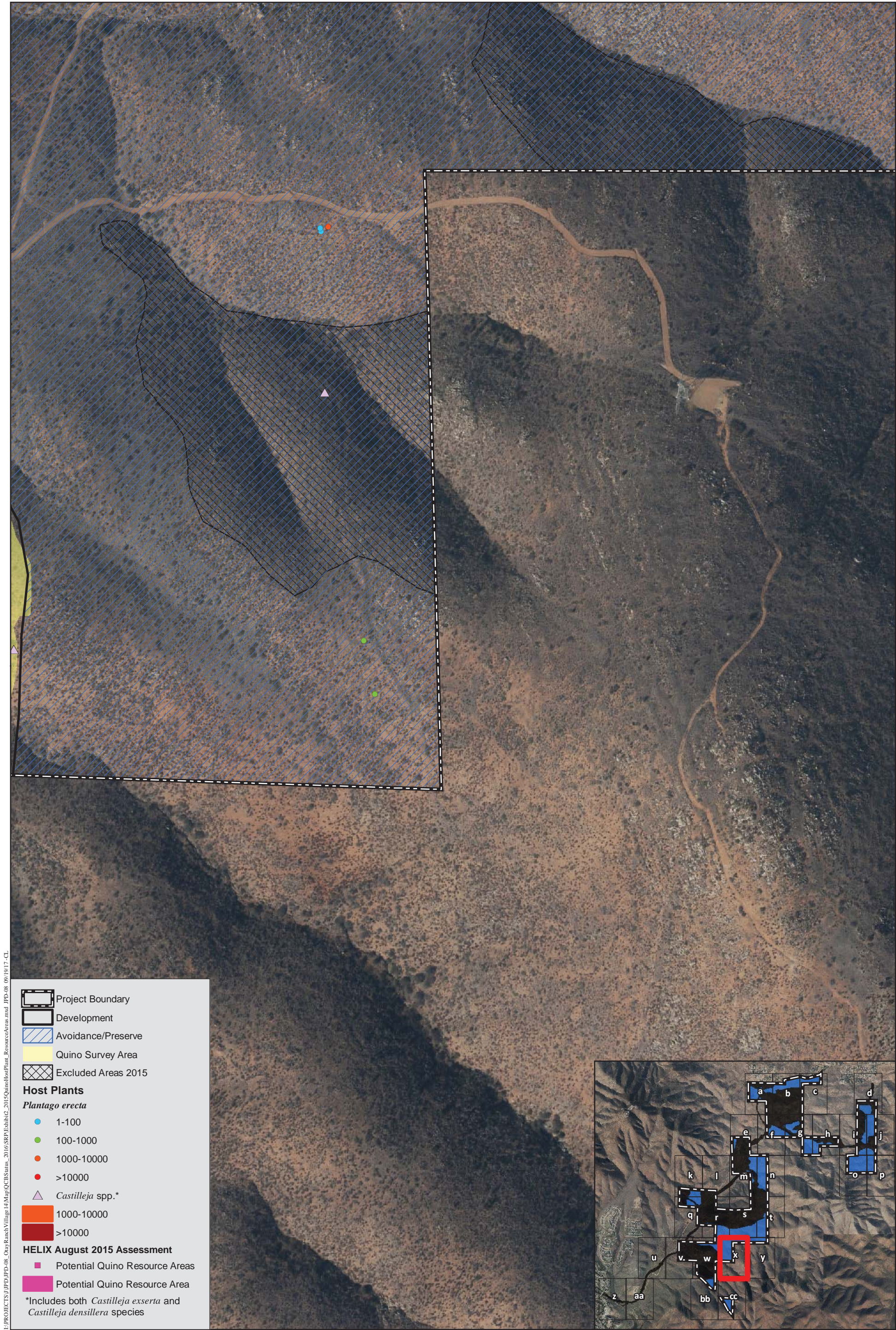
2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE



2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

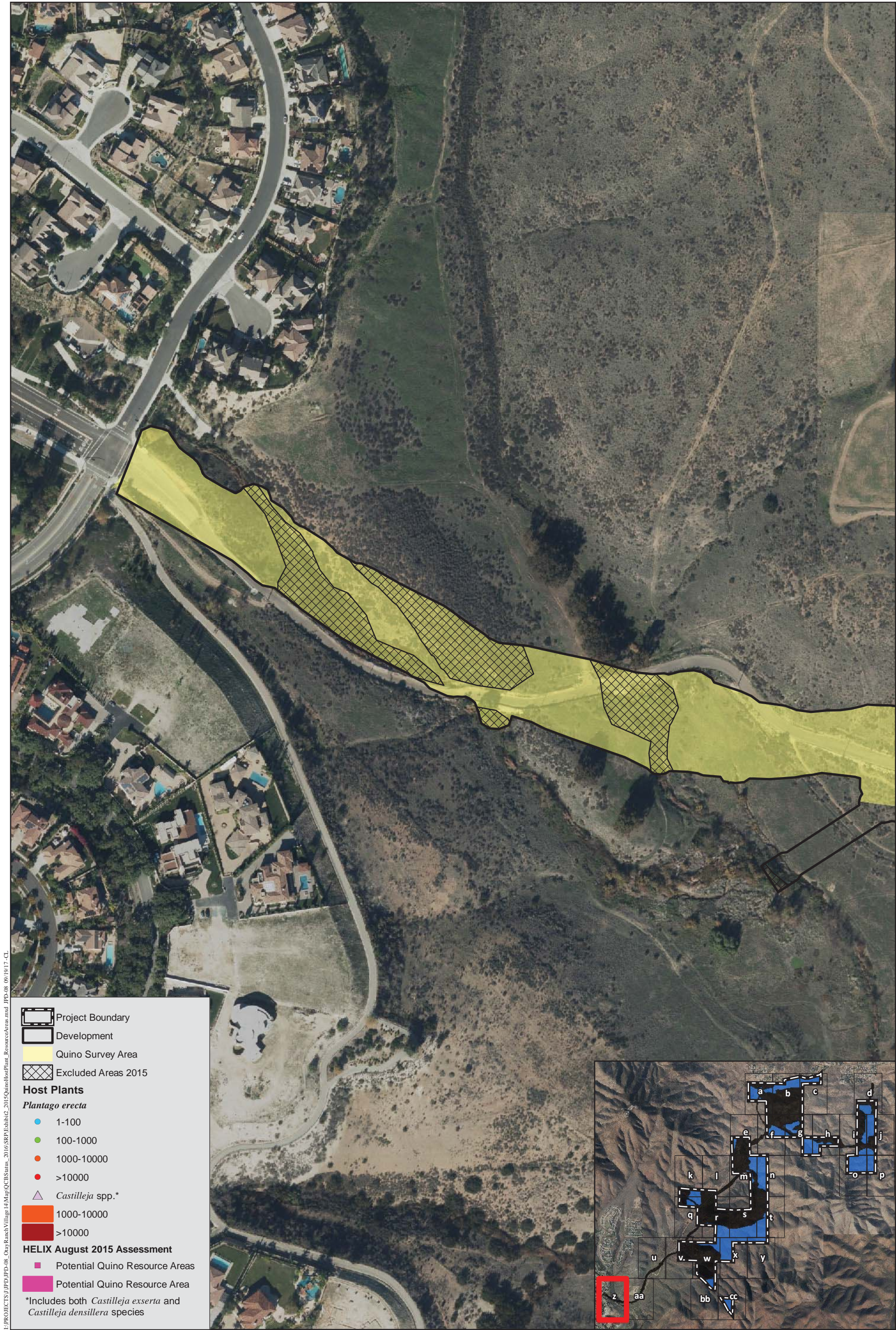
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DEVELOPMENT FOOTPRINT AND PRESERVE



2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

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DEVELOPMENT FOOTPRINT AND PRESERVE





2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

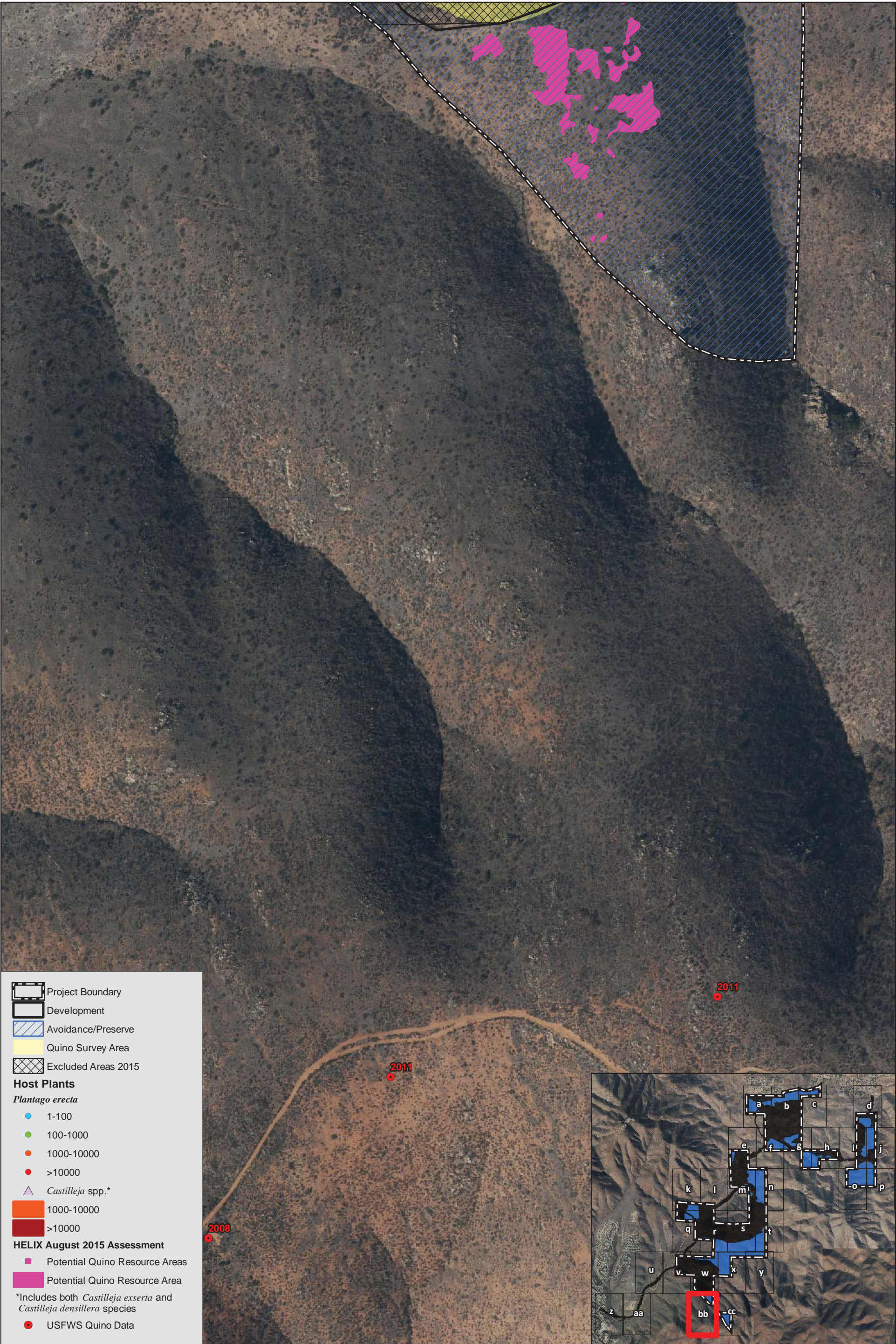
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2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

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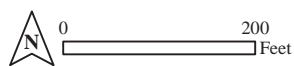


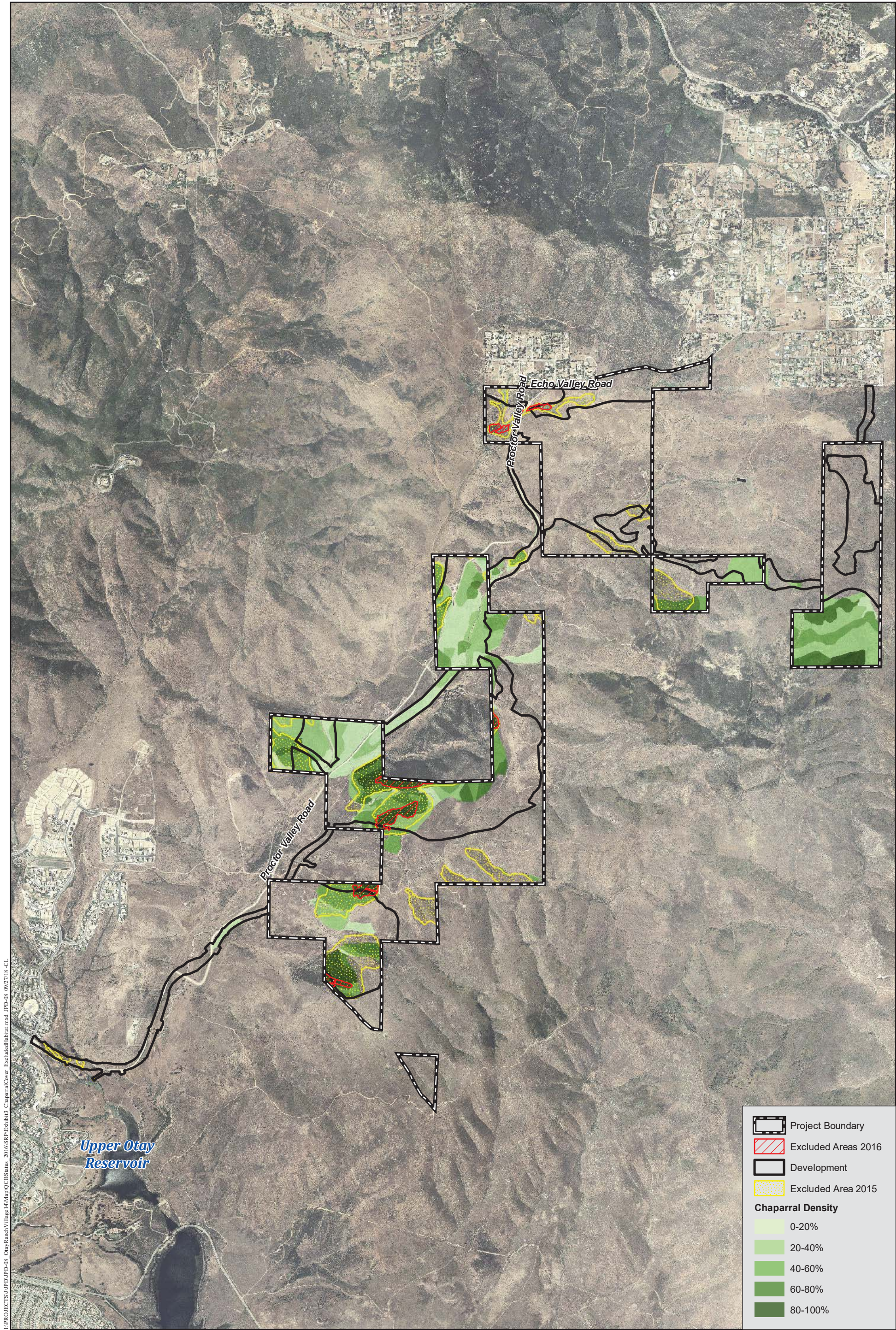
2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE



2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

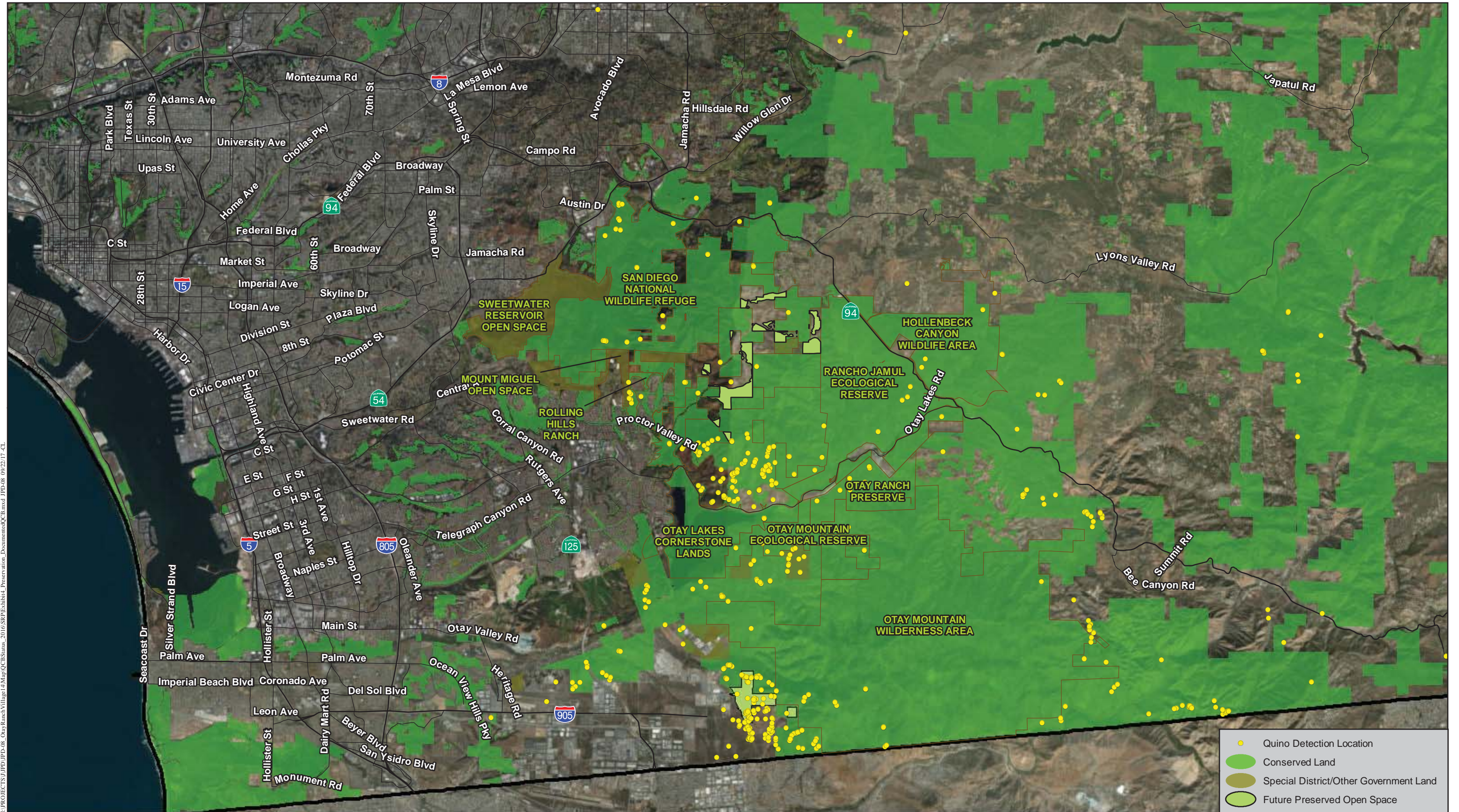


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Chaparral Cover and QCB Excluded Habitat

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

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Preservation of Documented QCB Sightings in County Subarea Plan

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

Otay Ranch Proctor Valley Village & Preserve

Quino Checkerspot Butterfly Survey Report


June 3, 2015

Prepared for:
**Jackson Pendo Development Company
for GDCI Proctor Valley, LP**
2245 San Diego Avenue, Suite 223
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Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard, Suite 200
La Mesa, CA 91942

**Otay Ranch Proctor Valley Village & Preserve
Quino Checkerspot Butterfly Survey Report**


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



Jasmine Bakker
TE-778195



Erica Harris
TE-778195

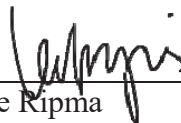

Sally Trnka
TE-778195



Stacy Nigro
TE-778195



Jim Rocks
TE-063230-4

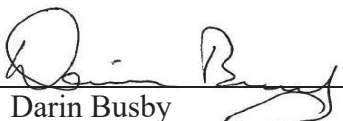

Melanie Rocks
TE-082908-1

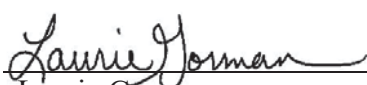

Brian Lohstroh
TE-063608-5

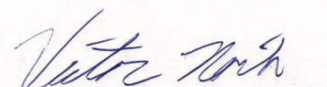

Lee Ripma
TE-221290-3



Garrett Huffman
TE-20186A-1

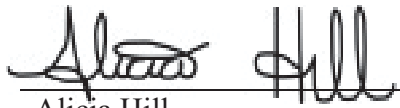

Melanie Dicus
TE-049175-3


Darin Busby
TE-115373-3


Laurie Gorman
TE-233367-2


Victor Novick
TE-069534-2


Travis Cooper
TE-170389-5


Alicia Hill
TE-06145B-0

Otay Ranch Proctor Valley Village & Preserve Quino Checkerspot Butterfly Survey Report

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1.0 INTRODUCTION

This report documents the results of HELIX Environmental Planning, Inc.'s (HELIX's) 2015 Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) survey of the Proctor Valley - Otay Ranch Village 14 Project site. HELIX biologists performed the protocol survey (comprising seven site visits) under HELIX's Threatened/Endangered Species Permit No. TE778195. Consultants (Busby Biological Services, Inc. and Rocks Biological) conducted surveys under their individual permits (please refer to the title page for a complete list of individual permit numbers).

The Project site is located predominantly within the County of San Diego and portions of the City of Chula Vista in southwestern San Diego County, California in an area commonly known as Proctor Valley. It is further located within Sections 17, 18, 19, 20, 25, and 30 of Township 17 South, Range 1 West and 1 East of the U.S. Geological Survey (USGS) 7.5-minute Jamul Mountains quadrangle map (Figure 1). The Project site and associated study area are situated along Proctor Valley Road and are southeast of San Miguel Mountain, north of Upper Otay Reservoir, and west of the Jamul Mountains. The Project site also includes portions of the California Department of Fish and Wildlife Rancho Jamul Ecological Reserve located in Otay Ranch Village 14. Elevations range from approximately 560 to 1,320 feet above mean sea level. Vegetation communities within the study area consist primarily of chamise chaparral, coastal sage scrub, non-native grassland, and southern mixed chaparral. Eucalyptus woodland and disturbed habitat comprising unpaved roads and trails are also present.

2.0 METHODS

The study area comprises the proposed development footprint, including limits of brush management and potential Proctor Valley Road realignment areas, and totals approximately 778 acres (Figure 2). A QCB habitat assessment of the study area was conducted by HELIX biologist Jasmine Bakker on February 12, 2015. Based on this habitat assessment, approximately 216 acres were excluded from the survey area, largely as dense chamise chaparral or southern mixed chaparral. The 562-acre QCB survey area was divided into smaller areas and distributed amongst the surveyors to ensure 100 percent coverage of the survey area.

Seven weekly protocol surveys were conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) Survey Protocol for Quino Checkerspot Butterfly (2014) by HELIX biologists Jasmine Bakker, Erica Harris, Stacy Nigro, and Sally Trnka, and consultants Busby Biological Services, Inc. and Rocks Biological (Appendix A). HELIX biologists Tara Baxter, Laura Moreton, and Ben Rosenbaum participated as supervised individuals. Surveys began on February 17, 2015 and continued through April 2, 2015. The first QCB in Riverside County was reported at Oak Mountain by Adam Malisch on February 26, 2015 (Quino Biologists United 2015). The first QCB in San Diego County was reported at Marron Valley by Alison Anderson on March 12, 2015; however, additional sightings of QCB within San Diego County were limited. The seventh and last survey was conducted the week of March 30; however, the seventh survey was not completed for the entire survey area because surveys were discontinued due to host and nectar resources conditions and limited QCB sightings in San Diego County (see additional details in Section 3.0).

Surveys consisted of walking through appropriate habitat and identifying all butterflies observed by sight and with the aid of binoculars. Larval host plants were mapped with the aid of hand-held Global Positioning System (GPS) units (Figure 3), and potential nectar plant species were documented. Surveys covered between 5 and 10 acres per hour, with the exception of the first survey conducted on February 20 due to limited protocol weather conditions.

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

3.0 RESULTS

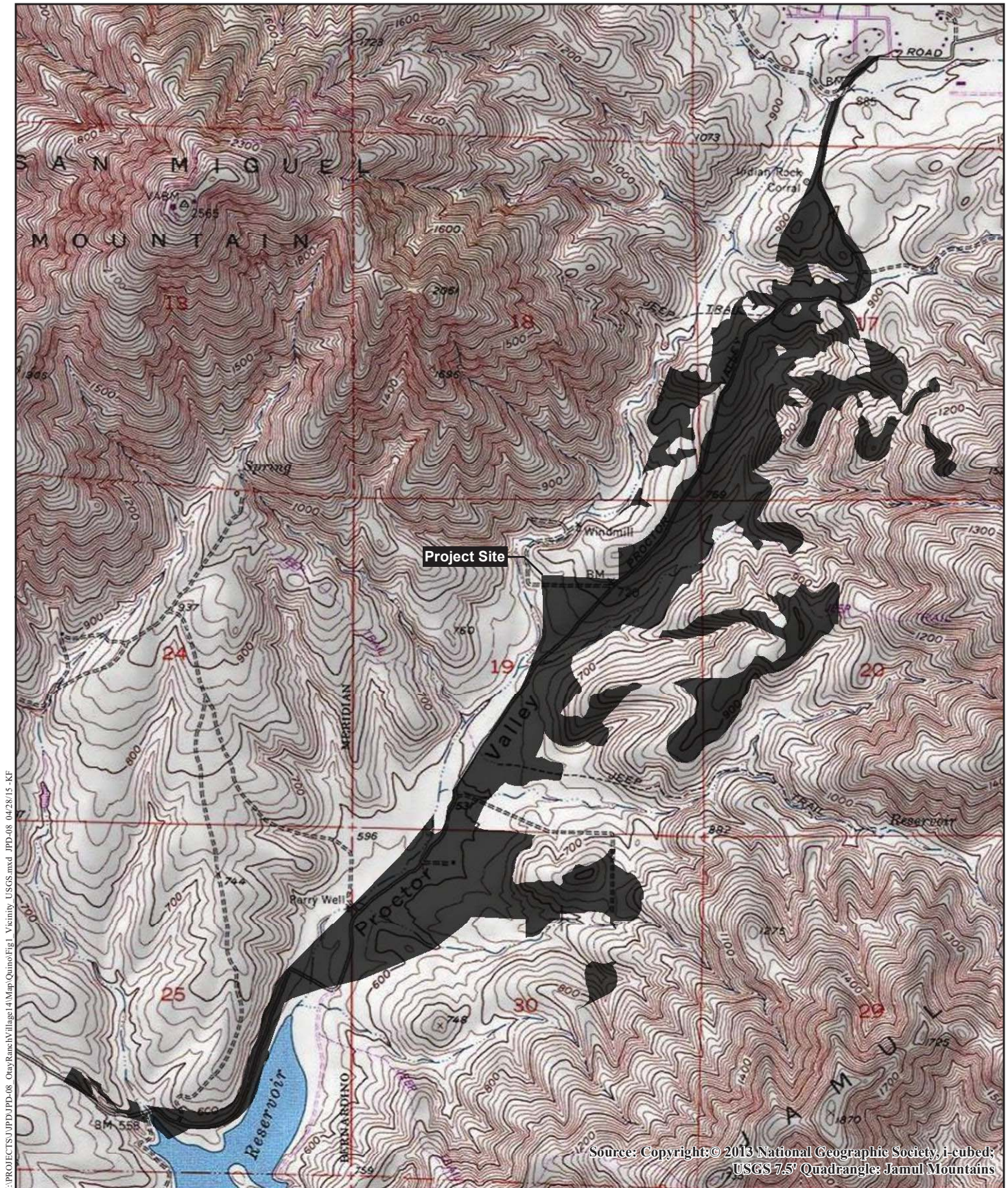
No QCB or QCB larvae were detected within the survey area during the 2015 protocol surveys.

Surveyors observed a total of 3,849 butterfly individuals representing at least 32 butterfly species during the seven surveys. The most common butterflies observed were Behr's metalmark (*Apodemia mormo virgulti*), funereal duskwing (*Erynnis funeralis*), southern blue (*Glaucopsyche lygdamus australis*), ladies (*Vanessa* spp.), and Sarah's orangetip (*Anthocharis sara sara*).

Two larval host plant species were observed within the survey area: dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja exserta*). Parish's owl's clover (*Castilleja densiflora*), a potential host plant species similar to purple owl's clover, was more commonly observed in small patches throughout the survey area than purple owl's clover. Dwarf plantain was mapped in patches of low density (1 - 100 plants), medium density (100 - 1,000 plants), and high density (1,000 - 10,000 plants); the owl's clover were mapped in low density patches (Figure 3). High density patches of dwarf plantain were mapped as polygons if they were in areas larger than approximately 250 square feet, and a few of those were reported to have greater than 10,000 plants. Host plants were in good condition during the first 6 weeks of surveys and representative of a typical year; however, by the seventh week dwarf plantain numbers decreased and most individuals has senesced.

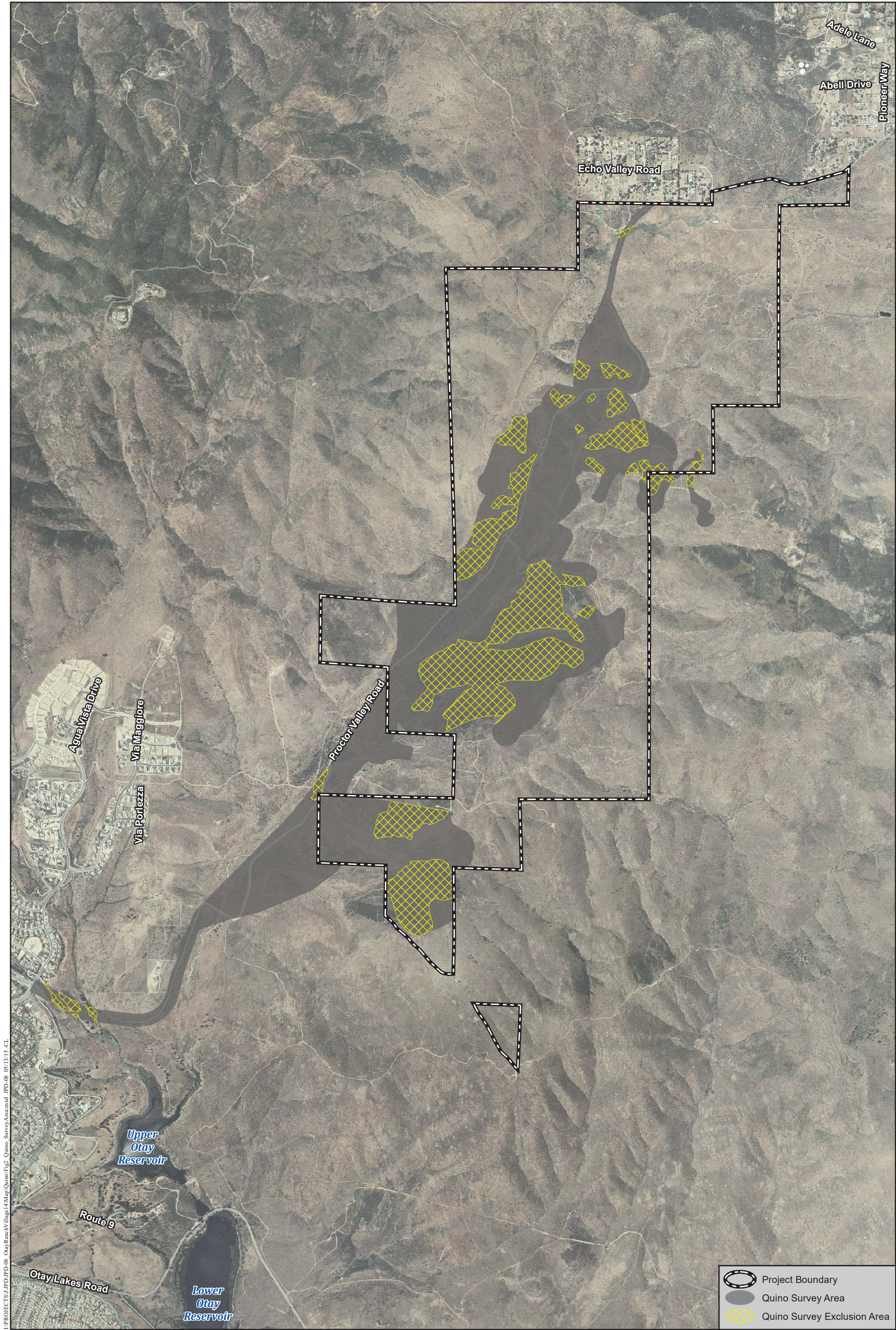
Seven potential nectar sources known to be utilized by QCB were noted within the survey area: popcorn flower (*Cryptantha* and *Plagiobothrys* spp.), California buckwheat (*Eriogonum fasciculatum*), goldfields (*Lasthenia* spp.), ground pink (*Linanthus dianthiflorus*), goldenstar (*Muilla maritima*), rancher's fiddleneck (*Amsinckia intermedia*), and onion (*Allium* sp.). Other potential nectar sources were documented on survey forms and field notes. California buckwheat was a dominant within coastal sage scrub and was observed flowering throughout the seven surveys. Popcorn flower was present throughout the survey area and onion was common within patches of grassland intermixed with the chaparral communities on the north-facing slopes. Ground pink and goldfields occurred in smaller, isolated patches, and rancher's fiddleneck occurred occasionally along the road and trails.

Dominant plant species within the coastal sage scrub were primarily California buckwheat, California sagebrush (*Artemisia californica*), San Diego sunflower (*Bahiopsis laciniata*), laurel sumac (*Malosma laurina*), and deerweed (*Acmispon glaber*). Dominant plant species within the



Project Vicinity Map

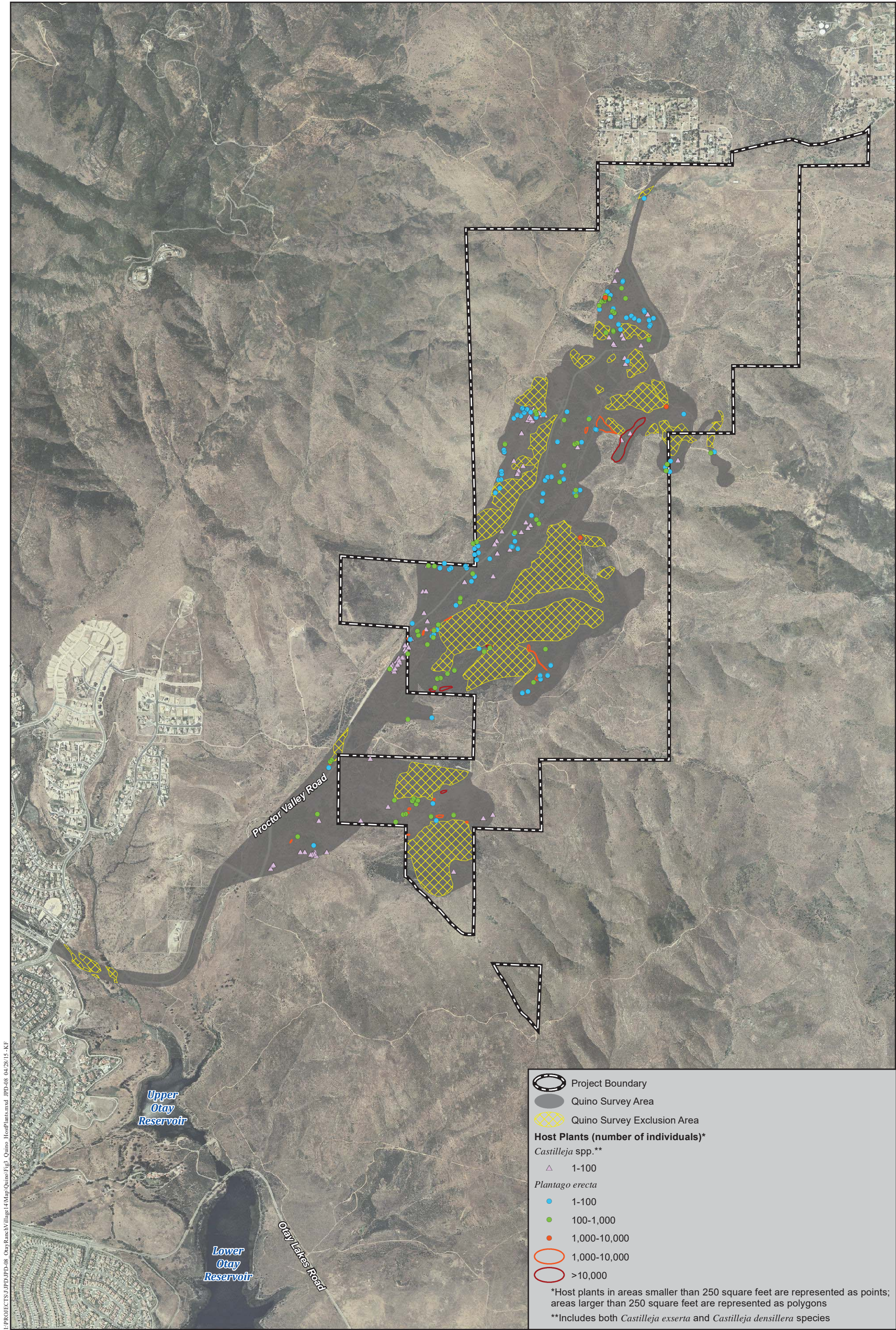
OTAY RANCH PROCTOR VALLEY VILLAGE & PRESERVE



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2015 Quino Checkerspot Butterfly Survey Area

OTAY RANCH PROCTOR VALLEY VILLAGE & PRESERVE



2015 Quino Checkerspot Butterfly Host Plant Locations

OTAY RANCH PROCTOR VALLEY VILLAGE & PRESERVE

chamise chaparral and southern mixed chaparral were primarily chamise (*Adenostoma fasciculatum*), Ramona lilac (*Ceanothus tomentosus*), and mission manzanita (*Xylococcus bicolor*). Munz's sage (*Salvia munzii*) also occurred in patches throughout the survey area.

Surveys were discontinued during the seventh week due to a combination of factors: host plant and nectar resources within the survey area had deteriorated to a condition that was determined by HELIX permitted biologists to not be suitable conditions; and an extremely limited number of QCB sightings in coastal San Diego County, including in areas known to support QCB. HELIX had several communications with USFWS staff (i.e., Susan Wynn and Alison Anderson) to confirm the extremely limited QCB sightings in San Diego County, prior to making a decision to stop the weekly surveys. The only reported sightings in coastal San Diego County were two sightings in Marron Valley (March 12 and March 20) and one sighting in east Otay Mesa on March 20 (Quino Biologists United 2015).

Despite the limited QCB sightings within San Diego County in 2015, this survey season was a good habitat year across the region and the 2015 QCB resource mapping for the Otay Ranch Village 14 survey area likely is representative of QCB resources on site.

4.0 REFERENCES

- Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken (eds.). 2012. The Jepson manual: vascular plants of California, second edition. Berkeley, CA: University of California Press.
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Appendix A

SURVEY INFORMATION



Appendix A
SURVEY INFORMATION

Survey 1							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
February 20, 2015	Jasmine Bakker [^]	45	13.5	1220/1540	Hazy, 73°F, wind 2-3 mph	Hazy, 68°F, wind 3-9 mph	No QCB Observed
	Erica Harris [^]	40	12.6	1230/1540	Hazy, 73°F, wind 0-1 mph	Overcast, 68°F, wind 3-9 mph	
February 17, 2015	J. Rocks [#]	127	6.22	1005/1530	0% clouds, 61°F, wind 1-3 mph	0% clouds, 73°F, wind 3-5 mph	No QCB Observed
	Melanie Rocks [#]						
	Brian Lohstroh [#]			1120/1530	0% clouds, 68°F, wind 0-3 mph		
February 19, 2015	J.Rocks [#]			1000/1525	50% clouds, 64°F, wind 1-2 mph	80% clouds, 74°F, wind 1-6 mph	No QCB Observed
February 18, 2015	Laurie Gorman ^β , Victor Novick ^β , Travis Cooper ^β	120	5	0820/1600	3% clouds, 61.4°F, wind 0-2 mph	100% clouds, 74.8°F, wind 0-3 mph	No QCB Observed
February 19, 2015	Darin Busby ^β	30	10	1240/1530	Light haze, 75°F, wind 1-5 mph	Light haze, 74°F, wind 1-3 mph	No QCB Observed
February 20, 2015	Laurie Gorman ^β , Travis Cooper ^β	91	7.58	0945/1545	10% clouds, 71.5°F, wind 0-2 mph	50% clouds, 70.8°F, wind 1-6 mph	No QCB Observed
February 21, 2015	Travis Cooper ^β , Victor Novick ^β , Brian Lohstroh ^β	110	7.3	1000/1500	90% clouds, 70°F, wind 3-5 mph	50% hazy, 70°F, wind 5-7 mph	No QCB Observed

[^]Signifies HELIX biologist

[#]Signifies Busby biologist

^βSignifies Rocks biologist

Appendix A (cont.)
SURVEY INFORMATION

Survey 2							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
February 25, 2015	Jasmine Bakker^	40	9.4	1000/1415	0% clouds, 63°F, wind 1-3 mph	0% clouds, 76°F, wind 3-7 mph	No QCB Observed
	Stacy Nigro^	45	9.8	0945/1420	0% clouds, 64°F, wind 2-5 mph	5% clouds, 76°F, wind 3-7 mph	
February 26, 2015	J.Rocks‡	127	6.27	0915/1600	10% clouds, 60°F, wind 1-4 mph	10% clouds, 70.5°F, wind 1-5 mph	No QCB Observed
	Melanie Dicus‡				5% clouds, 60°F, wind 1-3 mph	10% clouds, 70.5°F, wind 1-5 mph	
	Garrett Huffman‡				10% clouds, 60°F, wind 1-3 mph	10% clouds, 70.5°F, wind 1-5 mph	
February 24, 2015	Alicia Hill ^β , Laurie Gorman ^β ,	93	8.45	1040/1615	2% clouds, 66.2°F, wind 5-10 mph	2% clouds, 71.6°F, wind 0.5-7 mph	No QCB Observed
February 25, 2015	Alicia Hill ^β , Laurie Gorman ^β , Travis Cooper ^β , Victor Novick ^β	137	5.37	0800/1500	3% clouds, 62.1°F, wind 0-1 mph	3% clouds, 76.0°F, wind 3-8 mph	No QCB Observed
February 26, 2015	Travis Cooper ^β , Victor Novick ^β	89	6.59	0900/1545	30% clouds, 62°F, wind 1-3 mph	5% clouds, 72°F, wind 5-8 mph	No QCB Observed
February 26, 2015	Laurie Gorman ^β	30	9.23	1245/1600	60% clouds, 78.2°F, wind 1-5 mph	10% clouds, 70.6°F, wind 1-4 mph	No QCB Observed

^Signifies HELIX biologist

‡Signifies Busby biologist

^βSignifies Rocks biologist

Appendix A (cont.)
SURVEY INFORMATION

Survey 3							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
March 5, 2015	Jasmine Bakker^	40	10	0930/1330	0% clouds, 65°F, wind 1-3 mph	0% clouds, 76°F, wind 2-7 mph	No QCB Observed
	Erica Harris^	45	11.25	0930/1330	0% clouds, 65°F, wind 1-3 mph	0% clouds, 76°F, wind 2-7 mph	
March 5, 2015	J.Rocks‡	127	6.43	0850/1510	0% clouds, 62°F, wind 0-2 mph	0% clouds, 79°F, wind 0-4 mph	No QCB Observed
	Melanie Dicus‡			0850/1530	0% clouds, 62°F, wind 2-4 mph	0% clouds, 76°F, wind 0-2 mph	
	Garrett Huffman‡			0850/1510	0% clouds, 62°F, wind 2-4 mph	0% clouds, 76°F, wind 0-2 mph	
March 5, 2015	Alicia Hill [§] , Travis Cooper [§] , Victor Novick [§]	145	6.9	0830/1530	0% clouds, 63°F, wind 0-2 mph	0% clouds, 77°F, wind 0-3 mph	No QCB Observed
March 6, 2015	Alicia Hill [§] , Travis Cooper [§] , Victor Novick [§]	111	6.2	0815/1415	0% clouds, 63°F, wind 0-3 mph	0% clouds, 82°F, wind 1-5 mph	No QCB Observed
March 7, 2015	Travis Cooper [§] , Victor Novick [§]	93	7.75	0745/1345	0% clouds, 61°F, wind 0-1 mph	0% clouds, 86°F, wind 1-5 mph	No QCB Observed

^Signifies HELIX biologist

‡Signifies Busby biologist

§Signifies Rocks biologist

Appendix A (cont.)
SURVEY INFORMATION

Survey 4							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
March 9, 2015	Jasmine Bakker^	45	9.47	1015/1500	0% clouds, 63°F, wind 0-2 mph	10% clouds, 71°F, wind 2-6 mph	No QCB Observed
	Stacy Nigro^	40	9.8	1045/1445	5% clouds, 65°F, wind 2-5 mph	5% clouds, 71°F, wind 2-6 mph	
March 9, 2015	Melanie Rocks‡	127	6.05	0920/1615	0% clouds, 61°F, wind 1-2 mph	0% clouds, 77°F, wind 1-2 mph	No QCB Observed
	Melanie Dicus‡			0915/1615	0% clouds, 60.6°F, wind 1-2 mph	0% clouds, 78°F, wind 1-2 mph	
	Garrett Huffman‡			0920/1615	0% clouds, 61°F, wind 1-2 mph	0% clouds, 78°F, wind 1-2 mph	
March 11, 2015	Travis Cooper‡, Victor Novick‡	81	6.75	1040/1640	80% clouds, 72°F, wind 1-2 mph	80% clouds, 76°F, wind 1-3 mph	No QCB Observed
March 12, 2015	Alicia Hill‡, Travis Cooper‡, Victor Novick‡	123	6.8	0830/1430	0% clouds, 63°F, wind 0-1 mph	0% clouds, 85°F, wind 3-5 mph	No QCB Observed
March 13, 2015	Alicia Hill‡, Travis Cooper‡, Victor Novick‡, Brian Lohstroh‡	145	6.04	0800/1400	0% clouds, 62°F, wind 0-2 mph	0% clouds, 91°F, wind 4-7 mph	No QCB Observed

^Signifies HELIX biologist

‡Signifies Busby biologist

‡Signifies Rocks biologist

Appendix A (cont.)
SURVEY INFORMATION

Survey 5							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
March 18, 2015	Jasmine Bakker^	85	10	1125/1540	20% clouds, 69°F, wind 0-4 mph	60% clouds, 70°F, wind 3-7 mph	No QCB Observed
	Sally Trnka^						
March 16, 2015	Melanie Rocks‡	127	6.86	0930/1500	55% clouds, 76°F, wind 1-3 mph	30% clouds, 88°F, wind 2-7 mph	No QCB Observed
	Melanie Dicus‡			0830/1500	30% clouds, 78°F, wind 3-8 mph	30% clouds, 88°F, wind 2-7 mph	
	Garrett Huffman‡			0830/1500	30% clouds, 78°F, wind 3-8 mph	30% clouds, 85°F, wind 2-7 mph	
March 19, 2015	Alicia Hill ^β , Travis Cooper ^β , Victor Novick ^β	133	7.4	0930/1530	10% clouds, 65°F, wind 0-2 mph	10% clouds, 82°F, wind 3-6 mph	No QCB Observed
March 20, 2015	Alicia Hill ^β , Travis Cooper ^β , Laurie Gorman ^β ,	112	6.2	0900/1500	1% clouds, 66.1°F, wind 0-1 mph	1% clouds, 85°F, wind 3-5 mph	No QCB Observed
	Victor Novick ^β	45	7.5	1030/1630	0% clouds, 73°F, wind 0-2 mph	5% clouds, 78°F, wind 0-3 mph	No QCB Observed
March 21, 2015	Travis Cooper ^β ,	74	6.2	0815/1415	45% clouds, 62°F, wind 1-3 mph	0% clouds, 79°F, wind 2-5 mph	No QCB Observed
	Victor Novick ^β ,				45% clouds, 62°F, wind 0-3 mph	0% clouds, 74°F, wind 0-5 mph	

^Signifies HELIX biologist

‡Signifies Busby biologist

^βSignifies Rocks biologist

Appendix A (cont.)
SURVEY INFORMATION

Survey 6							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
March 23, 2015	Jasmine Bakker [^] Sally Trnka [^]	85	10	1015/1430	0% clouds, 67°F, wind 0-3 mph	20% clouds, 74°F, wind 3-8 mph	No QCB Observed
March 23, 2015	Garrett Huffman [#]	127	8.2	0845/1530	0% clouds, 62°F, wind 1-3 mph	0% clouds, 72°F, wind 2-6 mph	No QCB Observed
	Melanie Dicus [#]			0845/1530	1% clouds, 62°F, wind 0-3 mph	1% clouds, 72°F, wind 2-6 mph	
	Lee Ripma [#]			0855/1345	1% clouds, 62°F, wind 1-3 mph	60% clouds, 75°F, wind 2-5 mph	
March 24, 2015	Brian Lohstroh ^β , Laurie Gorman ^β	52	7.43	1200/1500	2% clouds, 78°F, wind 4-9 mph	1% clouds, 85°F, wind 5-9 mph	No QCB Observed
	Travis Cooper ^β ,	49	7.5	0830/1500	5% clouds, 61°F, wind 1-3 mph	1% clouds, 85°F, wind 5-9 mph	No QCB Observed
March 26, 2015	Alicia Hill ^β , Travis Cooper ^β , Victor Novick ^β	139	6.6	0745/1440	0% clouds, 62°F, wind 0-1 mph	0% clouds, 93°F, wind 1-5 mph	No QCB Observed
March 27, 2015	Alicia Hill ^β , Travis Cooper ^β , Victor Novick ^β ,	119	6.6	0730/1330	0% clouds, 60°F, wind 0-1 mph	0% clouds, 93°F, wind 2-7 mph	No QCB Observed

[^]Signifies HELIX biologist

[#]Signifies Busby biologist

^βSignifies Rocks biologist

Appendix A (cont.)
SURVEY INFORMATION

Survey 7							
DATE	BIOLOGIST	ACRES	AC/HR	TIME* (start/ end)	WEATHER CONDITIONS		RESULTS†
					Start	End	
March 30, 2015	Stacy Nigro^	40	10	1015/1415	0% clouds, 74°F, wind 0-8 mph	0% clouds, 79°F, wind 5-8 mph	No QCB Observed
March 30, 2015	Melanie Dicus‡ Garrett Huffman‡	60	7.5	0845/1630	0% clouds, 61°F, wind 0-2 mph	0% clouds, 79°F, wind 2-6 mph	No QCB Observed
April 1, 2015	Brian Lohstroh‡, Travis Cooper‡, Victor Novick‡	97	5.9	0900/1430	20% clouds, 67°F, wind 1-4 mph	0% clouds, 82°F, wind 2-7 mph	No QCB Observed
April 2, 2015	Alicia Hill‡, Travis Cooper‡, Victor Novick‡	48	8	0830/1030	45% clouds, 62°F, wind 2-5 mph	20% clouds, 69°F, wind 2-6 mph	No QCB Observed

^Signifies HELIX biologist

‡Signifies Busby biologist

‡Signifies Rocks biologist

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Appendix B

SURVEY FORMS AND FIELD NOTES



2015 Quino Checkerspot Butterfly Survey Form

Surveyor: J. Rocks

Date: 2/17/15

Site Name: Proctor Valley - Village 14 of Olay Ranch

Site Visit No: 1

Acres Surveyed 127 (217+219) Survey Time: 20.4

Acres per Hour: 6.22

Other Surveyors Present: M. Rocks
B. Lohstroch

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	<u>1005</u>	<u>61</u>	<u>1-3</u>	<u>0%</u>
End	<u>1530</u>	<u>73</u>	<u>3-5</u>	<u>0%</u>
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Chamise Chap. NNG

DCSS, Dist Hab, So Mixed Chap (Chamise, Xylococcus, Ceanothus tomentosus)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	<u>1</u>	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	<u>11</u>
purple owl's clover (<i>Castilleja exserta</i>)	<u>1</u>	goldfields (<i>Lasthenia</i> spp.)	<u>1</u>
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	<u>1</u>
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
		ground pink (<i>Linanthus dianthiflorus</i>)	
		Munz's Sage (<i>Salvia munzii</i>)	<u>1</u>
		Blue Dicks (<i>Dichelostemma cap</i>)	<u>1</u>

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	<u>1111</u>
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	<u>111111</u>	painted lady (<i>V. cardui</i>)	<u>1111</u>
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	<u>1</u>
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	<u>1</u>	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	<u>11</u>
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	<u>1111</u>	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	<u>14</u>	Column Subtotal	<u>12</u>
		Total	<u>26</u>

AcnGla Adefas All Prae Bah Lac So Par
Xyl Bic Mal Lav Cal Cil Vio Red 1
Cea Tom Sel Cin Esch Cal Lom Das

2015 Quino Checkerspot Butterfly Survey Form

Surveyor

Melanie Rocks

Date:

2/17/2015

Site Name: Proctor Valley - Village 14 of Otay Ranch

Site Visit No:

1

Acres Surveyed

127

Survey Time:

20.4

Acres per Hour:

6.22

Other Surveyors Present:

J. Rocks

B. Lohstroh

Field Conditions			
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)
Start	1005	61	1-3
End	1530	73	3-5
Start			
End			

Vegetation Communities Surveyed (inc. dominant spp.)

Chamise chaparral (Ade fas), NW6, DCS

Disturbed / roadway, so mixed chaparral

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	✓	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	✓
purple owl's clover (<i>Castilleja exserta</i>)	✓	goldfields (<i>Lasthenia</i> spp.)	✓
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	✓
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	✓
		ground pink (<i>Linanthus dianthiflorus</i>)	

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	111
chalcid checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brachydium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Evers amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	111	painted lady (<i>V. cardui</i>)	#
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	111
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	1
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	1	funereal duskywing (<i>Erynnis funeralis</i>)	1
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	111	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	7	Column Subtotal	
		Total	10

2015 Quino Checkerspot Butterfly Survey Form

Surveyor: B. Lohstroff Date: 2/17/15
 Site Name: Proctor Valley - Village 14 of Otay Ranch Site Visit No: 1
 Acres Surveyed: 127 Survey Time: 1120-1530 20.4 Acres per Hour: 6.22
 Other Surveyors Present: J. Rocks, M. J. Rocks

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1120	68°F	0-3 mph	0%
End	1530	73°F	3-5 mph	0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Chap. Mtn DCSS, Dist
Chamise, Isocoma, leucostemum, Salvia munzii, Erigeron f. f., Achillea

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	X	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	X
purple owl's clover (<i>Castilleja exserta</i>)	X	goldfields (<i>Lasthenia</i> spp.)	X
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
		ground pink (<i>Linanthus dianthiflorus</i>)	X
		see add'l Nectar sources opposite page	

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	11
chalcid checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	11	painted lady (<i>V. cardui</i>)	11
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	1
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	11	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	1
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	11	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		Column Subtotal	
		Total	

2015 Quino Checkerspot Butterfly Survey Form

Surveyor:

J. Rocks

Date: 2/19/15

Site Name: Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 1

Acres Surveyed: 127

Survey Time: 20.4

Acres per Hour: 6.22

Other Surveyors Present: —

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1000	64	1-2	50% thin
End	1230	70	1-8	10% thin
Start	1525	74	1-6	80% thin
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Cham chap, DCS, Dist habitat, NNG
Dirt Roads

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	1	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	1
purple owl's clover (<i>Castilleja exserta</i>)	1	goldfields (<i>Lasthenia</i> spp.)	1
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Mulla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	1
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	1
		ground pink (<i>Linanthus dianthiflorus</i>)	
		Blue dicks, <i>Clematis pauciflora</i>	1

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)	11	brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	11
chalcidon checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Evers amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	7/11	painted lady (<i>V. cardui</i>)	11
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	1	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	11
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	7/11	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal		Column Subtotal	
		Total	

Add'l Nectar Sources - *Lathyrus vestitus*
Calystegia macro
Acmispon glaber
Bahiopeis laciniata
Mirabilis calif.
Solanum parishii
Oxalis

2015 Quino Checkerspot Butterfly Survey Form

Surveyor: Laurie Gorman Date: 2-18-15
 Site Name: Proctor Valley - Village 14 of Otay Ranch Site Visit No: 1 (F.G. northern portion of K)
 Acres Surveyed: 120 Survey Time: 7.75 Acres per Hour: 5
 Other Surveyors Present: Victor Novik, Travis Cooper

Field Conditions			
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)
Start	0820	61.4	0-2
End	1600	74.8	0-3
Start			
End			

Vegetation Communities Surveyed (inc. dominant spp.)

Chamise (dom. *Ceanothus tomentosus*)
Chaparral *Adenostoma fasciculatum*

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	X	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	X
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	X
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Mullea</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
		ground pink (<i>Linanthus dianthiflorus</i>)	X

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcid checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exilis</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Evers amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	painted lady (<i>V. cardui</i>)	2
Edward's blue (<i>Hemiarctus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	20
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	15	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	10	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	6
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgult</i>)	2045	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		striated queen	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	53	Column Subtotal	29

total 82

Oxalis sp.
 Eschscholzia californica
 Mirabilis laevis
 Dodecatheon clevelandii
 Salvia clevelandii
 Thymelaea incana
 Solanum sp.
 Dichelostemma capitatum
 Eschscholzia californica
 Lomatium sp.

2015 Quino Checkerspot Butterfly Survey Form

Surveyor: TRAVIS COOPER Date: 2/18/15
 Site Name: Proctor Valley - Village 14 of Otay Ranch F, G, K (North) Site Visit No: 1
 Acres Surveyed: 120 Survey Time: 7hr 40min Acres per Hour: 5.16
 Other Surveyors Present: Victor Muzik, Laurie Gorman

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0820	61	02	5%
End	1600	75	0-3	100% haze
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

<u>Chamise Chaparral (chamise)</u>	<u>CSS (Buckwheat)</u>
------------------------------------	------------------------

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	X	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	X
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	X
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Mulla</i> spp.)	X
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	X
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
		ground pink (<i>Linanthus dianthiflorus</i>)	X

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcidon checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	painted lady (<i>V. cardui</i>)	2
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	20
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	15	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	10	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	6
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	27	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		<u>Striated Queen</u>	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	14		
Column Subtotal	53	Column Subtotal	28
		Total	81

2015 Quino Checkerspot Butterfly Survey Form

Surveyor Darin Busby Date: 2/19/15
 Site Name: Proctor Valley - Village 14 of Otay Ranch (Map M) Site Visit No: 1
 Acres Surveyed 30 acres Survey Time: ~ 3 hrs Acres per Hour: ~ 10 acres/hr.
 Other Surveyors Present: N/A

Field Conditions			
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)
Start	1240	75 F	1-5 mph
End	1530	74 F	1-3 mph
Start			
End			

Vegetation Communities Surveyed (inc. dominant spp.)
Coastal Sage Scrub, disturbed areas, bare ground, non-native grass/and.

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	X
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	X
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	X

~~No host plants observed.~~

other flowering plants:
 Isomeris, Eriogonum, Agrostis, Brassica,
 Dichlostenum, Bahiopsis, Mirabilis

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)	1	west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	1
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	1	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	1
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	11	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Unidentified moth	11
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	6	Column Subtotal	4
		Total	10

2015 Quino Checkerspot Butterfly Survey Form

Surveyor: Jasmine Bakker **Date:** 2/20/2015
Site Name: Proctor Valley – Village 14 of Otay Ranch (JPD-08); Area A **Site Visit No:** 1
Acres Surveyed 45 **Survey Time:** 3 hours 20 min **Acres per Hour:** 13.5*
Other Surveyors Present: Erica Harris ~ Area C
 *Survey completed at faster pace in order to complete survey during suitable weather conditions

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1220	73	2-3	hazy
End	1540	68	3-9	hazy (mostly cloudy)
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
NNG (<i>Bromus</i> , <i>Avena</i>), DCSS (<i>Artemisia californica</i> , <i>Eriogonum fasciculatum</i> , <i>Salvia apiana</i> , <i>Acmispon glaber</i>),
SMC (<i>Ceanothus tomentosus</i> , <i>Adenostoma fasciculatum</i> , <i>Xylococcus bicolor</i> , <i>Rhamnus crocea</i>)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	X	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	X
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	X

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	2
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginiensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	3	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	1	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	5
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	3	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	10	Column Subtotal	7
		Total	17

Procter Valley
QCB Survey #1

20 Feb 2015

JB

ARDA A ~ 45 acres

START: 73° 2-3 mph, hazy: 1220

SOOP: 68° 3-9 mph, " 1540

NNG, SMC, CC, DSS

Flowering Sp.

Rap sat Pla. ere*
Ero. mos. Coa tom
Hir inc Sal mel
Dre cap Eri tom
Acm. gla Cryptantha*
Oxa. pes Lin. dia*
Cal mac Esc cal
Mir cal Pelecogyne sp.
Mar mac Xyl bic
Cal cil Las. ves.
Eri far* Cle pan.
Camissonia sp.
Allium sp.* Dod. de
Lomatium Thalictrum
Sanicula Lepidium
Oxa. cal Stilodine
Bac sal Der far
Solanum Kee. ant

Butterflies

W. Coast lady II
Dusky wing III
Southern blue III
Behr's metalmark III
Blue III
Cal. Ringlet I

WILDLIFE

WEME COBA
Lizards LEGF
woolly bear caterpillars
moths, bees
WREN SPTO
jack rabbit
ROWR BUSH
BEWR
CATH

2015 Quino Checkerspot Butterfly Survey Form

Surveyor: Erica Harris Date: 2/20/15
 Site Name: Proctor Valley - Village 14 of Otay Ranch Site Visit No: 1
 Acres Surveyed: 40 Survey Time: 3.17 hr Acres per Hour: 12.6
 Other Surveyors Present: Jasmine Bakker (Area A)

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	<u>1230</u>	<u>73</u>	<u>0-1</u>	<u>100% hazy</u>
End	<u>1540</u>	<u>68</u>	<u>3-9</u>	<u>100% overcast</u>
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	X	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	X
purple owl's clover (<i>Castilleja exserta</i>)	X	goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	X
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbi</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcid checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	painted lady (<i>V. cardui</i>)	1
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	1
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)		anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	2	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	30	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	33	Column Subtotal	2
		Total	35

JPD 08

Enca H

QCB #1; Area C

2/20/15

START: 1230; 73°F, 0-1, 100% hazy

STOP: 1540; 68°F, 3-9, 100% over

Flowering:

Dracopis oxalis rap sat
acmgla calcil vioped
Hir inc mir lae solanum
Diccayp cryptantha trifas
amr mer ceacrothus esc cal
pic mon *pla ere cal mac
Allium sis bel sanicula
cast ex *

Duskywing III So. Blue I

Berks ^{III} ^{III} ^{III} Painted I

Riglet II Lady I

WOMF BUSH OAKI LABP

AMCR NOFL WCSP SAVS

GRRO RCKI YRWA BOMR

WREN ROMR HOFI OWA

CALIN (part)

*NO QCB