

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Gretchen Cummings Date: 3/23/16
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 4
 Area Surveyed W Acres Surveyed 54 Survey Time: 0920-1450 Acres per Hour: 9.82
 Other Surveyors Present: none 5hrs 30min

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0920	61.7°F	< 3.1 mph	none 0%
End	1450	77.1°F	2.2-6.1 mph w/gusts to 10.4	none 0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Sage Scrub (Salvia munzii + Eriogonum fasciculatum)

Chaparral (Chamise + Scrub Oak), Non-Native Grassland (Erodium spp. + Avena sp.)

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>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	X
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. 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>)	2
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Myliatta crescent (<i>Phyciodes myliatta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginiensis</i>)	1
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	6
marine blue (<i>Leptotes marina</i>)	3	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	18	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>)	3
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbria</i>)		Skippers	
unidentified white	2	funereal duskywing (<i>Erynnis funeralis</i>)	4
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	45	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	2		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	2		
Column Subtotal	73	Column Subtotal	17
(7 species)		Total	90

(6 species)
(13 species)
total

2016 Quino Checkerspot Butterfly Survey Form

Surveyor:

D. Busby

Date:

3/23/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No:

4

Area Surveyed

X

Acres Surveyed

62 acres

Survey Time:

6.75 hr.

Acres per Hour:

~9

Other Surveyors Present:

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1000	73	0-2	0%
End	1645	75	5-8	0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

chaparral, coastal sage scrub, disturbed, nonnative grassland

ADF FAS, ERE FAS, MAL LAY, CEA TOM, ART CAL, BAH LAC

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.)	
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>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	X
Host Plant Mapping Updated (circle) Yes <u>No</u>		New Area or Existing Area (circle) New <u>Existing</u> Both	
Species updated (list)	HEL SCO, MIR CAL, SAL CLE, BAH LAC, ACN GLA, BRI CON, HEL SCO		

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California palch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorant</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)	3	brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcidion checkerspot (<i>E. chalcidion chalcidion</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemargus ceraunus gyas</i>)	2	American (Virginia) lady (<i>V. virginensis</i>)	5
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	10
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>)	19	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>)	14	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	9
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	20	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calophelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	6		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sanna marcellina</i>)			
unidentified sulphur			
Column Subtotal	64	Column Subtotal	24
		Total	88

2016 Quino Checkerspot Butterfly Survey Form

Surveyor

Chez Brungaber

Date:

3/19/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No:

4

Area Surveyed 7.2 (partial) Acres Surveyed 78

Survey Time: 8 hrs

Acres per Hour: 10

Other Surveyors Present:

Griffn Brungaber (supervised)

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1000	67.5	0-3	5%
End	1800	65.3	0-3	20%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Active bunch grass land, CSS, chamise chap
 Stipa sp., Art cal, Eriogonum, Salvia apiana, chamise, Malosma

Host Plants		Obs.	Nectar Plants		Obs.
dwarf plantain (<i>Plantago erecta</i>)		FLWR	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		FLWR
purple owl's clover (<i>Castilleja exserta</i>)		FLWR	goldfields (<i>Lasthenia</i> spp.)		
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>)		FLWR
woolly plantain (<i>Plantago patagonica</i>)			onion (<i>Allium</i> spp.)		FLWR
Chinese houses (<i>Collinsia</i> spp.)		FLWR	buckwheat (<i>Eriogonum fasciculatum</i>)		FLWR
			ground pink (<i>Linanthus dianthiflorus</i>)		
Host Plant Mapping Updated (circle)		(Yes)	No	New Area or Existing Area (circle)	New Existing Both
Species updated (list) <i>Castilleja</i> , <i>Collinsia</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>)	
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>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	II
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	III
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>)	IIIIII	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)	IIIIII	Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	IIIIII	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)	IIIIII	common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)	IIIIII	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)	IIIIII	Skippers	
unidentified white	IIIIII	funereal duskywing (<i>Erynnis funeralis</i>)	IIII
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	II
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	IIIIII	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)	IIIIII	white (common) checkered-skipper (<i>Pyrgus albescens</i>)	IIII
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	141	Column Subtotal	18
		Total	159

2016 Quino Checkerspot Butterfly Survey Form

Surveyor

Chez Brumgraber

Date: 3/16/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 4

Area Surveyed 2 partial Acres Surveyed 40

Survey Time: 6 hrs

Acres per Hour: 6.67

Other Surveyors Present:

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0900	67.1	0-2	0
End	1500	79.9	2-5	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CSS, chamise chap, native bunch grassland, buckwheat scrub
(Chamise, Salvia muszlii, Malva, buckwheat, Bahiopsis, Selagheella, Stipa, Erodium)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	flw	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	flw
purple owl's clover (<i>Castilleja exserta</i>)	flw	goldfields (<i>Lasthenia</i> spp.)	
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.)	flw
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	flw
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list) <i>Castilleja</i> sp.			

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 exilis</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
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>)	1	Swallowtails	
unidentified blue	0	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>) 12	12	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>)	11
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>)	111
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemis mormo virgulti</i>)	1	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	111
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	1		
Column Subtotal	110	Column Subtotal	15
		Total	125

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Natalie Brodie & Brenna Oso (TE-1359482-1343383) Date: 26 Mar 2016
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch - Poly A Site Visit No: 4
 Acres Surveyed 55 Survey Time: 6h 10min Acres per Hour: 8.9
 Other Surveyors Present: Andy Smisek (under supervision)

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1230 / 1240	69	2-6	0
End	1540	80	2-9	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CSS (Enfes, Mallau, Artcal, Bahlac), grassland
 add'l plants in flower: Diccap, Bahlac, Eradum, Phacic, Ericon, Mimaur, Acmgla

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>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.)	✓
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	✓
		ground pink (<i>Linanthus dianthiflorus</i>)	

Host Plant Mapping Updated (circle) Yes No New Area or Existing Area (circle) New Existing Both

Species updated (list) Placer: 32.68976, -116.87962, 50-100 (~10/m²), 32.69683, -116.87631, 500-1000 (10-100/m²)
32.69703, -116.87605, <10 indiv.

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>)	1	brown elfin (<i>Callophrys augustinus</i>)	1
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>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	1
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	1	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	29 + 27	anise swallowtail (<i>P. zelicaon</i>)	1 + 1
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)	5	common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	1
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	1 + 7
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	28 + 12	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1	<i>Erynnis</i> sp.	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	1		
Column Subtotal	106	Column Subtotal	15
		Total	121

Cases: 32.69010, -116.87818, 1 indiv; 32.68985, -116.87836, 9; 32.68983, -116.87835, 1;
 32.68990, -116.87836, 17; 32.68983, -116.87836, 6

* SDHL & CAGN observed

2016 Quino Checkerspot Butterfly Survey Form

Surveyor:

Chez Brungaber

Date:

3/27/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No:

5

Area Surveyed AA, CC (part) Acres Surveyed 72

Survey Time: 6.25 hour Acres per Hour: 5.8

Other Surveyors Present: Nicole Kimball, Griffin Brungaber (supervised)

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0945	65.8	0-1	0%
End	1600	74.0	4-7	2%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	flwr	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	flwr
purple owl's clover (<i>Castilleja exserta</i>)	FLWR	goldfields (<i>Lasthenia</i> spp.)	flwr
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	FLMR
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.)	flwr
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	FLWR
		ground pink (<i>Linanthus dianthiflorus</i>)	FLWR
Host Plant Mapping Updated (circle) (Yes) No		New Area or Existing Area (circle) New Existing Both	
Species updated (list) <i>Castilleja e.</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>)	11	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>)	1
western tailed blue (<i>Evers amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	111
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.)	111
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	111	pale swallowtail (<i>Papilio eurymedon</i>)	1
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	11111111	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	111111	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	1
checkered (common) white (<i>Pontia protodice</i>)	1	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	11	funereal duskywing (<i>Erynnis funeralis</i>)	111111
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	1111111111	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	111111111111
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Northern checkered-skipper	11
sleepy orange (<i>Eurema nicippe</i>)		unidentified skipper	1
cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Comstock fritillary	1
unidentified sulphur	111	hardest Sulphur	1
Column Subtotal	260	Column Subtotal	59
		Total	319

+30+20+50
+30

150

+50
80

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: N. Proff & B. Ogg (TE-13594824134338-3) Date: 26 Mar 2016
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch - Poly B Site Visit No: 4
 Acres Surveyed 60 Survey Time: 6 hrs Acres per Hour: 10
 Other Surveyors Present: Andy Smisek (univ. supervisor)
 *black-tailed garter snake

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0915	61°	0-2	0
End	1215	69°	2-6	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

css (Erigeron, Bahlac, Mallard, Acacia, Salvia, Gutierrezia), grassland (Aristida, Bromus, Erod. sp.)
 other flowering plants: Johnny jump up, mimulus, deerweed, blueberries, nuttall's snapdragon, vigiera, Erodium, Mircal

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>)	
Host Plant Mapping Updated (circle)	Yes	New Area or Existing Area (circle)	New Existing Both
Species updated (list)	Caseys: 32.69221, -116.87904, 1 indiv.		

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>) <u> </u>	5	brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
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>) <u> </u>	6	Swallowtails	
unidentified blue <u> </u>	1	pale swallowtail (<i>Papilio eurymedon</i>)	1
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>) <u> </u>	65	anise swallowtail (<i>P. zelicaon</i>)	1
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>) <u> </u>	1
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> </u>	3
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>) <u> </u>	26	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>) <u> </u>	5
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	4	<i>Erynnis</i> sp.	4
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur <u> </u>	3		
Column Subtotal	110	Column Subtotal	15
		Total	125

2016 Quino Checkerspot Butterfly Survey Form

Surveyor

Chez Brungaber

Date: 3/25/15

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 5

Area Surveyed BB

Acres Surveyed 46

Survey Time: 4.5 hrs

Acres per Hour: 10

Other Surveyors Present: Griffin Brungaber (supervised)

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1330	76	2-5	30%
End	1800	72	0-3	0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	FLWR	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	FLWR
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snaptail (<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.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	FLWR
		ground pink (<i>Linanthus dianthiflorus</i>)	FLWR
Host Plant Mapping Updated (circle)	Yes	No	
Species updated (list)		New Area or Existing Area (circle)	New Existing Both

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
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.)	11
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>)	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>)	11
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	11	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>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Grey Hairstreak	1
sleepy orange (<i>Eurema nicippe</i>)		Unidentified Skipper	11
cloudless sulfur (<i>Phoebastria sennae marcellina</i>)			
unidentified sulphur	1		
Column Subtotal	34	Column Subtotal	11
		Total	45

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: N. Brodie & Brenna Ogg (TE-135948-2 & 134338-3) Date: 27 Mar 2016
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Poly C Site Visit No: 4
 Acres Surveyed 33 Survey Time: 3hrs 50 min Acres per Hour: 8.6
 Other Surveyors Present: —

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1300	76°	4-8 (gust to 14)	10 % w/ haze
End	1455	78°	2-8	15% w/ haze
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CSS (Mallau, Artrial, Bahlac, Salapi), chap (Adefar, Mallau)

Flowering: blueberries, shooting star, allium, golden yarrow, morning glory, mimulus, vigvera

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>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.)	✓
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	✓
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) <u>(Yes)</u>	No	New Area or Existing Area (circle) New Existing Both	
Species updated (list) <u>Casexs, Placere - see back</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>)	1	brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	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.)	
marine blue (<i>Leptotes marina</i>)	3	Swallowtails	
unidentified blue	2	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	40	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>)	2	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	1	funereal duskywing (<i>Erynnis funeralis</i>)	2
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	1
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	4	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	5	<i>Erynnis</i> sp.	2
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)	2		
unidentified sulphur	1		
Column Subtotal	70	Column Subtotal	5
		Total	75

*PCSP, SDHL observed

Casexs - # (density); coord

1; 32.68987, -116.88189

~25 ($\leq 5/m^2$); 32.68923, -116.87722

1; 32.68988, -116.87759

5 ($\leq 5/m^2$); 32.68922, -116.87704

1; 32.68909, -116.87714

3 ($\leq 2/m^2$); 32.68817, -116.87832

3 ($\leq 2/m^2$); 32.68812, -116.87849

~15 ($\approx 3/m^2$); 32.68813, -116.87856

1; 32.68750, -116.87929

7 ($\approx 2/m^2$); 32.68744, -116.87931

10+; 32.68806, -116.87972

Casexs / Placere - # (density); coord

3/75-100 ($\leq 50/m^2$); 32.68922, -116.87997

2016 Quino Checkerspot Butterfly Survey Form

Surveyor

Chez Bangraber

Date: 3/31/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 5

Area Surveyed CC part, FF part Acres Surveyed 30

Survey Time: 4 hr

Acres per Hour: 7.5

Other Surveyors Present: /

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1315	74.9	4-7	0
End	1715	66.0	4-9	2%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>) 10% infest; dried up		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>)	flwr
		ground pink (<i>Linanthus dianthiflorus</i>)	flwr
Host Plant Mapping Updated (circle) Yes ☒ No ☐		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>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>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
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>)		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>)	1
Behr's metalmark (<i>Apodemia mormo virgultorum</i>)	25	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>)		Constock fritillary	1
sleepy orange (<i>Eurema nicippe</i>)		Buckeye lanai	
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	1		
Column Subtotal	43	Column Subtotal	11
		Total	54

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Renee Owens **Date:** 3-26-2016
Site Name: JPD-08 Proctor Valley – Village 14 of Otay Ranch **Site Visit No:** 5
Area Surveyed D **Acres Surveyed** 42 **Survey Time:** 6 hrs **Acres per Hour:** 7
Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0835	62	0	0
End	1425	74	3.0	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
Mixed chaparral w/ <i>A. fasciculatum</i> , <i>Bahiopsis</i> , <i>S. mellifera</i> and <i>apiana</i> , <i>E. fasciculatum</i> , <i>A. californica</i> , <i>L. scoparius</i> , <i>R. crocea</i>

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.)	x
snapdragon (<i>Antirrhinum coulterianum</i>)	x	goldenstar (<i>Muilla</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>)	x
		ground pink (<i>Linanthus dianthiflorus</i>)	x
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)	3	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>Limnitis 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>)	
Edward's blue (<i>Hemiarctus ceraunus gys</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	3	unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	4	Swallowtails	
unidentified blue	1	pale swallowtail (<i>Papilio eurymedon</i>)	1
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	20	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>)	1
checkered (common) white (<i>Pontia protodice</i>)	2	mourning cloak (<i>Nymphalis antiopa</i>)	1
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>)	12	fiery skipper (<i>Hylephila phyleus</i>)	1
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)	1		
unidentified sulphur	2		
Column Subtotal	21	Column Subtotal	6
		Total	57

2016 Quino Checkerspot Butterfly Survey Form

Surveyor

Chez Brungaber

Date: 3/24/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 5

DD Area Surveyed Y, Z (partial) Acres Surveyed 108

Survey Time: 8hr 45min

Acres per Hour: 12.34 (6.1 ac/hr)

Other Surveyors Present: Nicole Kimball

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0915	72	0-2	0%
End	1800	79	0-3	0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	flwr	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	flwr
purple owl's clover (<i>Castilleja exserta</i>)	flwr	goldfields (<i>Lasthenia</i> spp.)	flwr
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.)	fruit
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	flwr
		ground pink (<i>Linanthus dianthiflorus</i>)	flwr
Host Plant Mapping Updated (circle)	(Yes) No	New Area or Existing Area (circle)	New Existing Both
Species updated (list) Castilleja 20 CAS → polygon linear 40' x 6', West → East			

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>)	1	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>)	11
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	r3
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.)	11 + 1 = 4
marine blue (<i>Leptotes marina</i>)	11 + 5	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	1
Sara orangetip (<i>Anthocharis sara sara</i>)	11 + 11	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)	11 + 11	Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	11 + 11	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)	11 + 11	common buckeye (<i>Junonia coenia grisea</i>)	111
checkered (common) white (<i>Pontia protodice</i>)	1	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	+ 1 = 1
unidentified white	11	funereal duskywing (<i>Erynnis funeralis</i>)	11 + 3 = 6
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	1
Behr's metalmark (<i>Apodemia mormo virgulta</i>)	11 + 11	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)	11 + 11	white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1 + 6 = 7
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		un-identified skipper	1
sleepy orange (<i>Eurema nicippe</i>)		Comstock satillary	1 + 3 = 4
cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Dalbys Sulphur	1
unidentified sulphur	111		
Column Subtotal	251	Column Subtotal	35
		Total	286

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: N. Bratice & B. Ogg (TE-135948-2 & 134338-3) Date: 27 Mar 2016
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Poly E Site Visit No: 4
 Acres Surveyed 51 Survey Time: 6 hrs Acres per Hour: 8.5
 Other Surveyors Present: —

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0945	62°	1-3	5% cover (w/ haze)
End	1245	76°	4-8 (gust to 14)	10% cover (w/ haze)
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

chap (Adefar, Xyltic, Mallau, Ceatom, Rhacro) CSS (Artcal, Mallau, Salapi, Bohlac, Salmun)
flowering: chamise, ~~mint~~ sage, dremwood, blueticks, vique^o, co pppp. Erodium spp, Ericon, Salcol

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>)	basal rare, only ✓	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>)	
Host Plant Mapping Updated (circle)	Yes No	New Area or Existing Area (circle)	New Existing Both
Species updated (list) <i>Plac. Carex. Ant. cov. - see back</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>)	1	brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
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>)	72	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>)	1
Metalmarks		mourful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	21	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	1		
Column Subtotal	98	Column Subtotal	2
		Total	100

Plaere - # (density); coord

100-500 (100/m²); 32.68731, -116.87396

Caesexs - # (density); coord

~50 (~15-20/m²); 32.68741, -116.87862

~10 (5/m²); 32.68736, -116.87796

~25 (≤ 20 /m²); 32.68733, -116.87778

4 (2/m²); 32.68731, -116.87773

3 (3/m²); 32.68723, -116.87759

3 (≤ 2 /m²); 32.68716, -116.87747

3 (3/m²); 32.68794, -116.87714

30 (5-10/m²); 32.68782, -116.87710

3 (3/m²); 32.68777, -116.87708

1; 32.68745, -116.87730

3 (3/m²); 32.68698, -116.87701

10+; 32.68713, -116.87786

Antcou

possible Antcou, basal rosette - 32.68569, -116.88131
(same indiv obs 11 Mar 2016)

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: GARRETT HUFFMAN

Date: 03/24/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 5

Area Surveyed EE/R

Acres Surveyed 30

Survey Time: 8 Hours

Acres per Hour: 3/5

Other Surveyors Present: NONE

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0830	63	0-2	0
End	1330	81	2-4	0
Start	1400	82	2-4	0
End	1700	76	2-6	0

Vegetation Communities Surveyed (inc. dominant spp.)

CHAMISE CHAPARRAL, COASTAL SAGE SCRUB, NON-NATIVE GRASSLAND

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>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	X
Host Plant Mapping Updated (circle) Yes	No	New Area or Existing Area (circle) New	Existing Both
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)	1	great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)	2	brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	1
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>)	1
western tailed blue (<i>Evers amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	1
southern blue (<i>Glaucopsyche lygdamus australis</i>)		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.)	
marine blue (<i>Leptotes marina</i>)	2	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	2
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	65	anise swallowtail (<i>P. zelicaon</i>)	1
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	14	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	2
checkered (common) white (<i>Pontia protodice</i>)	8	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	2
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	49	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>)		CALLIPPE FLUTTERBY	3
sleepy orange (<i>Eurema nicippe</i>)		(SEEYERIA CALLIPPE)	
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	146	Column Subtotal	14

TOTAL

159

2016 Quino Checkerspot Butterfly Survey Form

Surveyor:

Chez Brungaber

Date: 3/29/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 5

Area Surveyed FF per +

Acres Surveyed 30

Survey Time: 3hr 15min

Acres per Hour: 9.2

Other Surveyors Present:

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1100	60.1	4-9	35%
End	1415	63	4-9, gusts to 17	40%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	flur
purple owl's clover (<i>Castilleja exserta</i>)		goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	flur
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>)	flur
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle)	Yes	No	
Species updated (list)		New Area or Existing Area (circle)	New Existing Both

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	
Myliitta crescent (<i>Phyciodes myliitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
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>)		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>)	1
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>)	1111	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>)		Comstock fritillary	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	7	Column Subtotal	3
		Total	10

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Erik LaCoste Date: 3/25/16
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 5
 Area Surveyed 9.1 Acres Surveyed 91 Survey Time: 9.3 hrs Acres per Hour: 9.8
 Other Surveyors Present: ERICA Harris, Hannah Sadowski (unpermitted)

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0830 Am	63	0-1	0
End	1:40 pm	82	4-7	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Chaparral, CSS, NNG, NG, Chamise 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>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.)	
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
		ground pink (<i>Linanthus dianthiflorus</i>)	✓
Host Plant Mapping Updated (circle)	Yes No	New Area or Existing Area (circle)	New Existing Both
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atides 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>)	
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>)	1
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>)	
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.)	4
marine blue (<i>Leptotes marina</i>)	1	Swallowtails	
unidentified blue	5	pale swallowtail (<i>Papilio eurymedon</i>)	1
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	33	anise swallowtail (<i>P. zelicaon</i>)	2
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	19	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)	2	common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)	2	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)	4	Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	7
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	17	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	3		
Column Subtotal	158	Column Subtotal	16
		Total	174

3123/140

Bids: Erik Lj Hinnrah S (super)

WEME	CATH	MOMO	ANATHU
MOMO	CORA	BUSH	ROWK
CATH	RTHA	RCSP	HOFI
WREN	COHU	ANOR	TRES
LEUO	BCSP	CALT	selasprans

BTJR granite spray 12.
comenzio western fence 12.

Spring III	Amise I
Funeral II	Blue III
Behr's III	GA Sister I
GA ringlet III	Gabb's III
Lady III	Sulphur III
Syrax III	

Flower: clarkia pur, sis bel, cal spl,
sae mun, pent aurea, cas aff, Lir did,
yuc whip, exelium, Hix inc, sil gal,
dem gla, woped, maledicthamnus,
allium, sanchus, Dic cap, en con,
es cal, cide fas, cal mac, yuc whip,
gulium, mim aur, ban lac, sisymbrium,
cryptantharaplagio, cas donexa,
ara arv, Apt nut, tied cre, solanum
Pracic, Enocruss

H Sadowski:

3/25/16

Temp: 63-81°F

GCB w/ Erica

Wind: 0-4-7

JPD-01

Cloud: 0% - 5

Time: 8:45-1 (4:25 hours)

Birds

RTHA

Butterfly

Bears: III

Saras: HTT III III

Cabbage white: II

Sulfurs: III

dusky wing: I

Pale Swallowtail: I

* Gabb's: III

Blue: I

ID independently

Flower

Seline gallica violad, blue dicks,
wild onion, Erodium spp, CA poppy, deer
weed chamise Adefas, spring red berry
galium, snap dragon, soap plant, owl's
clover (exserta), popcorn flower, monkey
flower, golden yarrow, Sisymbrium spp,
Pinta kite, JD sun flower

Rite in the Rain

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Amy Mattson Date: 3/25/16
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 5
 Area Surveyed H Acres Surveyed 55 Survey Time: 5:35 (5.6) Acres per Hour: 9.8
 Other Surveyors Present: Talaya Rachele (supervised individual)

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	9:15	71	0	0
End	1450	79	0-3	50
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CSS, SMC, NMG

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>)				
Host Plant Mapping Updated (circle)	Yes	No	New Area or Existing Area (circle)	New	Existing	Both
Species updated (list)						

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
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>)	1
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>)	
Edward's blue (<i>Hemiarctus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	1
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	1
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue	11	pale swallowtail (<i>Papilio eurymedon</i>)	
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>)	11	Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)	11	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	11	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	1
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>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		ainty sulphur	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	11		
Column Subtotal		Column Subtotal	
		Total	
106		113	

3/25/16 JPD08 QCBS Arcatt Amy

Ero bot/cir
Mel ind
Sen ok
Bra nig
Hed ere
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Hyp gla
Ana arl
Gysmachia
Spigularia

- Eri fas
Mir lae
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Bah lae t
Cryptantha
Erica
Dic cap
Gub erejia
- pla ere
Phacelia fl purple
(almost all
- Allium is dry)
Acon mic
Vio ped
Galium - 4 petal
Scl qpi
Lup bic
Aemison sp.
Sil mun
Solanum dk purple
Larlynus
Dei fas
- Mulia amar
Ant nut
Camissonia s
Esc cal
Pentstemon
Mal fas
Oxal
Dan pus
Sis bel
Sid mal

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Amy Mattson Date: 3.24.16
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 5
 Area Surveyed I Acres Surveyed 42 Survey Time: 4:25 (4.4) Acres per Hour: 9.5
 Other Surveyors Present:

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	<u>11:20</u>	<u>79</u>	<u>0-1</u>	<u>0%</u>
End	<u>15:45</u>	<u>82</u>	<u>0-6</u>	<u>0%</u>
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

NDG, CSS

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>)				
Host Plant Mapping Updated (circle)	Yes	(No)	New Area or Existing Area (circle)	New	Existing	Both
Species updated (list)						

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>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>)	
chalcidon checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Myliitta crescent (<i>Phyciodes myliitta</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>Glaucopteryx lygdamus australis</i>)		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.)	<u>(1)</u>
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>)	<u>(13)</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>)	<u>(1)</u>	common buckeye (<i>Junonia coenia grisea</i>)	<u>(2)</u>
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	<u>(3)</u>	funereal duskywing (<i>Erynnis funeralis</i>)	<u>(3)</u>
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulta</i>)	<u>(15)</u>	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	<u>(1)</u>
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	<u>(10)</u>		
Column Subtotal		Column Subtotal	
		Total	

JPD08

3.24.10

Amey
QCB 5

Area I

Melina (by H)

Fro cic/bot

Hed cre

Sil gal

Sonole

Ana aru

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Convolvulus sp

Dic cap

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Artemisia sp

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- Iso men

- Cyphotha

Cal mac

Erica

Dei fas

- (Allium ^{almost all} is cy)

Vio per

Lupinus sp

Cal spl

Cal oil

Sis bel

Sal api

Sanicula ^{red}

Solanum ^{dark purple}

(Placere)

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: MELANIE DAVIS, JOHN DAVIS Date: 03-29-2016
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 5
 Area Surveyed J, m(42) Acres Surveyed 68 Survey Time: 4.25 HRS Acres per Hour: ~8/EACH BIO
 Other Surveyors Present: —

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1200	60	2 mph	30%
End	1615	60	7-9 mph	40%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.) CHAPARRAL; MOUNTAIN; GRASSLAND
DCSS = ERODIA SPP, BRONUS SPP, ARTEMISIA CA, E-FASCICULUM, M-LAUREA
NEWLEASS (AUSSUND) (DISTURBED) = STPALEIDA, BRONUS SPP, ERODIA 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>) / <i>DENSIFLORA</i>	x	goldfields (<i>Lasthenia</i> spp.)	
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.)	b
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.)	y
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	x
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) <u>Yes</u>	No	New Area or Existing Area (circle) <u>New</u>	Existing Both
Species updated (list) <u>C.DENSIFLORA</u>			

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>)	3
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	3
Acmon blue (<i>Icaricia acmon acmon</i>)	2	unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	1	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	27	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>)	6
checkered (common) white (<i>Pontia protodice</i>)	7	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	4
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	43	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	6	<i>LELODEA EUFALA</i>	1
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	87	Column Subtotal	18
		Total	105

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: MELANIE DICUS, JOHN DICUS

Date: 03-27-2016

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No: 5

Area Surveyed K, L, M (1/2) Acres Surveyed 133

Survey Time: 8 hrs

Acres per Hour: ~8.3 / each 130

Other Surveyors Present: —

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	<u>0845</u>	<u>63</u>	<u>1 mph</u>	<u>0</u>
End	<u>1645</u>	<u>72</u>	<u>4.7 mph</u>	<u>10</u>
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

1 NW 17: Bromus diandrus, B. hordeaceus, Avena fatua, HO

2 DESS: Broom spp. Artemisia ca, E. fasciculata, M. laurina, CHAMISE CLAP

3 EUC WOODLAND w/ DESS UNDERSTORY: Eucalyptus sp, Artemisia ca, E. fasciculata

ROSEUM
SPP.

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

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	<u>1</u>
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>)	<u>1</u>	west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Evers amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	<u>3</u>
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	<u>1</u>
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	<u>3</u>
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	<u>3</u>	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>133</u>	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	<u>2</u>	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	<u>15</u>
checkered (common) white (<i>Pontia protodice</i>)	<u>13</u>	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	<u>7</u>
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	<u>47</u>	fiery skipper (<i>Hylephila phyleus</i>)	<u>1</u>
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	<u>15</u>
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	<u>8</u>	<i>COLIAS HARFORDII</i>	<u>7</u>
sleepy orange (<i>Eurema nicippe</i>)		<i>HYLOPERES ERICETORUM</i>	<u>2</u>
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	<u>207</u>	Column Subtotal	<u>56</u>
		Total	<u>263</u>

Surveyor: GARDNER HUFFMAN 2016 Quino Checkerspot Butterfly Survey Form

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Date: 3/31/16

Site Visit No: 5

Area Surveyed: N Acres Surveyed: 65

Survey Time: 8 Hours

Acres per Hour: 8.13

Other Surveyors Present: _____

	Time (24 hr)	Field Conditions		Cloud Cover
		Temperature (°F)	Wind Speed (mph)	
Start	<u>0830</u>	<u>60</u>	<u>2-5</u>	<u>0</u>
End	<u>1630</u>	<u>63</u>	<u>3-8</u>	<u>1</u>
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CHAPARRAL CHMISE CHAPARRAL, COASTAL SALINE SCRUB, NON-NATIVE GRASSLAND

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	<u>X</u>	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	<u>X</u>
purple owl's clover (<i>Castilleja exserta</i>)	<u>X</u>	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>)	<u>X</u>
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	<u>X</u>
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	<u>X</u>
		ground pink (<i>Linanthus dianthiflorus</i>)	<u>X</u>
Host Plant Mapping Updated (circle)	Yes <u>No</u>	New Area or Existing Area (circle)	New Existing Both

Species updated (list)	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>)	<u>1</u>	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>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	<u>2</u>
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	<u>2</u>	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	<u>72</u>	anise swallowtail (<i>P. zelicaon</i>)	<u>1</u>
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>)	<u>10</u>
checkered (common) white (<i>Pontia protodice</i>)	<u>4</u>	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>)	<u>42</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>)	<u>1</u>		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			

Column Subtotal

Column Subtotal

13

TOTAL

125 / 135

2016 Quino Checkerspot Butterfly Survey Form

Surveyor Alicia Hill **Date:** 3/27/16
Site Name: JPD-08 Proctor Valley – Village 14 of Otay Ranch **Site Visit No:** 5
Area Surveyed 0, V **Acres Surveyed** 137 **Survey Time:** 5.5 **Acres per Hour:** 10
Other Surveyors Present: Travis Cooper

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0850	68	0-1	0
End	1420	78	2-5	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)	chamise chaparral (ADE FAS, ERI FAS, ACM GLA), native/non-native grassland (Stipa sp., BRO MAD, Avena sp.) coastal sage scrub (ART CAL, ERI FAS, ACM GLA)
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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>) densiflora	X	goldfields (<i>Lasthenia</i> spp.)	X
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</i> spp.) Bloomeria clevelandii	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>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	x
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list) CAS DEN, BLO CLE			

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>Limnitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	2
Edward's blue (<i>Hemiarctus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	3
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	5	Swallowtails	
unidentified blue	2	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	118	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>)	19
checkered (common) white (<i>Pontia protodice</i>)	29	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>)	87	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	4
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	10	Harford's sulphur	5
sleepy orange (<i>Eurema nicippe</i>)		Dainty sulphur	1
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	252	Column Subtotal	35
		Total	287

LAS GRA; CAL SPL; DIC CAP; PHA GRA; SID SPA; DEI FAS; CLA PUR;

Surveyor: GARRET HUFFMAN 2016 Quino Checkerspot Butterfly Survey Form
 Date: 3/27/16
 Site Name: JPD-08 Proctor Valley - Village 14 of Olay Ranch Site Visit No: 5
 Area Surveyed: P Acres Surveyed: 61 Survey Time: 8 HRS Acres per Hour: 7.6
 Other Surveyors Present: ALIVE

Start	Time (24 hr)	Field Conditions		
		Temperature (°F)	Wind Speed (mph)	Cloud Cover
End	<u>0830</u>	<u>60</u>	<u>2-4</u>	<u>0</u>
Start	<u>1630</u>	<u>70</u>	<u>3-8</u>	<u>0</u>
End				

Vegetation Communities Surveyed (inc. dominant spp.)
Ulmaceae, Cistaceae, Rosaceae, Ranunculaceae, Ranunculaceae

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	<u>X</u>	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	<u>0</u>
purple owl's clover (<i>Castilleja exserta</i>)	<u>4</u>	goldfields (<i>Lasthenia</i> spp.)	<u>0</u>
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Mullea</i> spp.)	<u>0</u>
birds-beak (<i>Cordylanthus rigidus</i>)		fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	<u>0</u>
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	<u>0</u>
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	<u>0</u>
		ground pink (<i>Linanthus dianthiflorus</i>)	<u>0</u>
Host Plant Mapping Updated (circle) <u>Yes</u>	No	New Area or Existing Area (circle) <u>New</u>	Existing Both
Species updated (list) <u>PURPURA, CISTACEAE</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>)	<u>1</u>	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	
Myiitta crescent (<i>Phyciodes myiitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	<u>2</u>
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	<u>2</u>
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>)	<u>52</u>	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	<u>1</u>	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>)	<u>5</u>	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	<u>5</u>
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	<u>2</u>	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	<u>4</u>
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	<u>5</u>	<u>Heliothis eruditorum</u>	<u>1</u>
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	<u>76</u>	Column Subtotal	<u>14</u>

TOTAL 90

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: GARRET HUFFMAN Date: 3/30/16
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 5
 Area Surveyed Q Acres Surveyed 55 Survey Time: 6 Hours Acres per Hour: 9.16
 Other Surveyors Present: NONE

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0830	60	2-4	10
End	1130	58	3-8	70
Start	1400	60	2-6	50
End	1700	60	3-8	30

Vegetation Communities Surveyed (inc. dominant spp.)

CHAMISE CHAPARRAL, COASTAL SAGE SCRUB, NON NATIVE GRASSLAND

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
snaptail (<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>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle)	Yes ☐ No ☒	New Area or Existing Area (circle)	New ☐ Existing ☐ Both ☐
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcid checkerspot (<i>E. chalcidona chalcidona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	1
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exilis</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everses amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	2
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	5
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	4
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	2	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	1
Sara orangetip (<i>Anthocharis sara sara</i>)	25	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>)	3	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>)	12	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)			
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	43	Column Subtotal	14

TOTAL 57

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: GARRETT HUREMANDate: 3/25/14Site Name: JPD-08 Proctor Valley - Village 14 of Otay RanchSite Visit No: 5Area Surveyed R/pAcres Surveyed 40Survey Time: 8 HoursAcres per Hour: 5Other Surveyors Present: NONE

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0830	66	1-4	0
End	1630	73	3-8	20
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CHAMISE CHAPARRAL, COASTAL SAGE SCRUB, NON NATIVE GRASSLAND

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>)	☒
Host Plant Mapping Updated (circle)	☒ Yes ☐ No	New Area or Existing Area (circle)	☒ New ☐ Existing ☐ Both
Species updated (list) <u>CASTLEWOOD SP.</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>)	2	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	
Myliatta crescent (<i>Phyciodes myliatta</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>)		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>)	1	unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	3	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	70	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	4	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	9
checkered (common) white (<i>Pontia protodice</i>)	1	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>)	35	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>)	6		
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	122	Column Subtotal	10

TOTAL 132

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Renee Owens **Date:** 3-27-2016
Site Name: JPD-08 Proctor Valley – Village 14 of Otay Ranch **Site Visit No:** 5
Area Surveyed S **Acres Surveyed** 47 **Survey Time:** 5.5 hrs **Acres per Hour:** 8.5
Other Surveyors Present: Patrick Hord

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	% Cloud Cover
Start	0810	61	0	10
End	1340	73	3.2	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
Mixed chaparral w/ <i>A. fasciculatum</i> , <i>Bahiopsis</i> , <i>Salvia mellifera</i> & <i>apiana</i> , <i>E. fasciculatum</i> , <i>A. californica</i> , <i>L. scoparius</i> , <i>R. crocea</i> ,

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.)	x
snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Muilla</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>)	x
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	1
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>Limnitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiarctus ceraunus gys</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	2	unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	8	Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	16	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>)	3
checkered (common) white (<i>Pontia protodice</i>)	1	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	1	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	16	fiery skipper (<i>Hylephila phyleus</i>)	1
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	45	Column Subtotal	5
		Total	50

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Brian Lohstroh **Date:** 25 March 2016
Site Name: JPD-08 Proctor Valley – Village 14 of Otay Ranch **Site Visit No:** _____
Area Surveyed T **Acres Surveyed** 57 acres **Survey Time:** 6.17 hrs **Acres per Hour:** 9.24
Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	08:40	64 air, 66 at ground	0-1	Clear
End	14:50	86	0-4	Clear
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)
scrub (<i>B. laciniata</i> , <i>M. laurina</i>); chaparral (<i>A. fasciculatum</i> , <i>M. laurina</i> , <i>R. crocea</i> , <i>C. tomentosus</i>);
NNG (<i>Avena</i> spp, <i>Bromus</i> spp.)

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>)	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>)	
woolly plantain (<i>Plantago patagonica</i>)		onion (<i>Allium</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)	X	buckwheat (<i>Eriogonum fasciculatum</i>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)	11	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>Limnitis 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>)	1
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	1
Edward's blue (<i>Hemiarctus ceraunus gys</i>)		American (Virginia) lady (<i>V. virginensis</i>)	2
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	1
marine blue (<i>Leptotes marina</i>)	9	Swallowtails	
Spring azure (<i>Celastrina ladon echo</i>)		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	32	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	11	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>)	11	mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white		funereal duskywing (<i>Erynnis funeralis</i>)	4
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	35	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	10
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	4	Lupine blue (<i>Plebejus lupines</i>)	
sleepy orange (<i>Eurema nicippe</i>)		<i>Erynnis</i> sp.	
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
dainty sulphur (<i>Nathalis iole</i>)	2		
Column Subtotal	115	Column Subtotal	19
		Total	134

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: John Lovio **Date:** 3-24-16
Site Name: JPD-08 Proctor Valley – Village 14 of Otay Ranch **Site Visit No:** 5
Area Surveyed Polygon U **Acres Surveyed** 48 **Survey Time:** 5.2 hours **Acres per Hour:** 9
Other Surveyors Present: None

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	10:00	76	2	0
End	15:00	83	5-10, W	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Chaparral: *Adenostema fasciculatum*, *Ceanothus tomentosus*, *Quercus berberidifolia*, *Xylococcus bicolor* > *Heteromeles arbutifolia*, *Mimulus aurantiacus*, *Rhus integrifolia*, *Malsoma laurina*, *Salvia munzii*, *Yucca schidigera*

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.)	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>)				
Host Plant Mapping Updated (<i>circle</i>)	Yes	No	New Area or Existing Area (<i>circle</i>)	New	Existing	Both
Species updated (list)						

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
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>)		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.)	6
marine blue (<i>Leptotes marina</i>)		Swallowtails	
Spring azure (<i>Celastrina ladon echo</i>)		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	16	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>)	1
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	2	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	9	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)	1	Lupine blue (<i>Plebejus lupines</i>)	
sleepy orange (<i>Eurema nicippe</i>)		<i>Erynnis</i> sp.	
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur	2		
Column Subtotal	30	Column Subtotal	8
		Total	38

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Renee Owens **Date:** 3-31-2016
Site Name: JPD-08 Proctor Valley – Village 14 of Otay Ranch **Site Visit No:** 5
Area Surveyed W **Acres Surveyed** 54 **Survey Time:** 6.5 hrs **Acres per Hour:** 8.3
Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	% Cloud Cover
Start	0805	60	0	10
End	1420	71	3.6	0
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Mixed chaparral w/ *A. fasciculatum*, *Salvia mellifera* & *apiana*, *E. fasciculatum*, *Artemisia*, *Lutus scoparius*, *Rhamnus crocea*, *Quercus* spp.

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.)	x
snapdragon (<i>Antirrhinum coulterianum</i>)	x	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>)	
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		gray hairstreak (<i>Strymon melinus pudica</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limnitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiarctus ceraunus gys</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	1	unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)	14	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>)	9	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>)	1	common buckeye (<i>Junonia coenia grisea</i>)	2
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>)	1
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	14	fiery skipper (<i>Hylephila phyleus</i>)	1
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>)	1		
unidentified sulphur			
Column Subtotal	42	Column Subtotal	4
		Total	46

2016 Quino Checkerspot Butterfly Survey Form

Surveyor: Brian Parker Date: 3/25/16
 Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch Site Visit No: 5
 Area Surveyed X Acres Surveyed 62 Survey Time: 6.25h Acres per Hour: 9.9
 Other Surveyors Present: NA

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0915	63	3-5	0%
End	1530	74	5-8	0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

CC- ADE FAS, MAL LAU, SAL MUN NNG- BRO MAD, AVENA, ERO CIC
 CSCG- ADE FAS, ERI FAS, SAL MUN

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.)	
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>)	X
		ground pink (<i>Linanthus dianthiflorus</i>)	X
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)	1	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>)	1
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		Ladies/Admirals	
Mylitta crescent (<i>Phyciodes mylitta</i>)		California sister (<i>Adelpha bredowii californica</i>)	
Blues		Lorquin's admiral (<i>Limenitis lorquini</i>)	
western pygmy-blue (<i>Brephidium exila</i>)		west coast lady (<i>Vanessa annabella</i>)	1
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubria</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	2
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		American (Virginia) lady (<i>V. virginensis</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		unidentified lady (<i>Vanessa</i> sp.)	
marine blue (<i>Leptotes marina</i>)		Swallowtails	
unidentified blue		pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	13	anise swallowtail (<i>P. zelicaon</i>)	1
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)		monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	8	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	29	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	51	Column Subtotal	4
		Total	55

2016 Quino Checkerspot Butterfly Survey Form

Surveyor:

Chez Brungaber

Date:

3/23/16

Site Name: JPD-08 Proctor Valley - Village 14 of Otay Ranch

Site Visit No:

4782 5

Area Surveyed

Acres Surveyed

50

Survey Time: 5 hrs

Acres per Hour:

10 (5/ac/hr)

Other Surveyors Present:

Nicole Kimball

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0900	61	0-2	0%
End	1400	81	4-7	0%
Start				
End				

Vegetation Communities Surveyed (inc. dominant spp.)

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)	flw	popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	flw
purple owl's clover (<i>Castilleja exserta</i>)	flw	goldfields (<i>Lasthenia</i> spp.)	flw
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>)	flw
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle)	Yes	No	New Area or Existing Area (circle)
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	
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>)		painted lady (<i>V. cardui</i>)	
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.)	II
marine blue (<i>Leptotes marina</i>)	I	Swallowtails	
unidentified blue	I	pale swallowtail (<i>Papilio eurymedon</i>)	
Whites		western tiger swallowtail (<i>P. rutulus</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>)	II III III III	anise swallowtail (<i>P. zelicaon</i>)	
desert (Felder's) orangetip (<i>A. cethura</i>)		Miscellaneous	
common California ringlet (<i>Coenonympha californica</i>)	I	monarch (<i>Danaus plexippus</i>)	
cabbage white (<i>Pieris rapae</i>)		common buckeye (<i>Junonia coenia grisea</i>)	II
checkered (common) white (<i>Pontia protodice</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
spring white (<i>P. sisymbrii</i>)		Skippers	
unidentified white	III	funereal duskywing (<i>Erynnis funeralis</i>)	
Metalmarks		mournful duskywing (<i>Erynnis tristis</i>)	
Behr's metalmark (<i>Apodemia mormo virgulti</i>)	II III III III III III III	fiery skipper (<i>Hylephila phyleus</i>)	
Wright's metalmark (<i>Calephelis wrighti</i>)		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	III
Sulphurs		Other	
orange sulphur (<i>Colias eurytheme</i>)		Buckeye larvae larvae	III I
sleepy orange (<i>Eurema nicippe</i>)			
cloudless sulfur (<i>Phoebus sennae marcellina</i>)			
unidentified sulphur			
Column Subtotal	58	Column Subtotal	13
		Total	71



Appendix C

BUTTERFLY CHECKLIST



Appendix C BUTTERFLY CHECKLIST

2016 Quino Checkerspot Butterfly Surveys BUTTERFLY CHECKLIST
Site Name: Proctor Valley – Village 14 of Otay Ranch
Dates: February 24 – March 31, 2016
Survey Numbers: 1-5
Surveyors: Jasmine Bakker, Erica Harris, Amy Mattson, Melissa Busby, Darin Busby, Melanie Rocks, Brian Lohstroh, Erik LaCoste, Gretchen Cummings, Brenna Ogg, Brian Parker, Crysta Dickson, Diana Saucedo, John Lovio, Monica Alfaro, Natalie Brodie, Renee Owens, Chez Brungraber, Andrew Borchert, Nicole Kimball, Travis Cooper, Alicia Hill, Melanie Dicus, John Dicus, and Garrett Huffman (Ben Rosenbaum, Hannah Sadowski, Talaya Rachels, Griffin Brungraber, Andy Smisek, and Patrick Hord as supervised individuals)

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Metalmarks	
California patch (<i>Chlosyne californica</i>)	26	Behr's metalmark (<i>Apodemia mormo virgulti</i>)	2,817
Gabb's checkerspot (<i>C. gabbii</i>)	180	Wright's metalmark (<i>Calephelis wrighti</i>)	57
Quino checkerspot (<i>Euphydryas editha quino</i>)		Ladies/Admirals	
chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		California sister (<i>Adelpha bredowii californica</i>)	2
Leanira checkerspot (<i>Thessalia leanira 1ulphu</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		west coast lady (<i>Vanessa annabella</i>)	48
Blues		red admiral (<i>V. atalanta rubria</i>)	102
western pygmy-blue (<i>Brephidium exila</i>)	20	painted lady (<i>V. cardui</i>)	139
Bernardino blue (<i>Euphilotes bernardino allyni</i>)	1	American (Virginia) lady (<i>V. virginensis</i>)	123
western tailed blue (<i>Everes amyntula</i>)	2	unidentified lady (<i>Vanessa</i> sp.)	154
southern blue (<i>Glaucopsyche lygdamus australis</i>)	264	Swallowtails	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)	4	Giant swallowtail (<i>Papilio cresphontes</i>)	15
Acmon blue (<i>Icaricia acmon acmon</i>)	108	pale swallowtail (<i>P. eurymedon</i>)	44
marine blue (<i>Leptotes marina</i>)	177	western tiger swallowtail (<i>P. rutulus</i>)	16
unidentified blue	125	anise swallowtail (<i>P. zelicaon</i>)	136
Whites		Skippers	
Sara orangetip (<i>Anthocharis sara sara</i>)	4,262	Bald duskywing (<i>Erynnis afranius</i>)	2
desert (Felder's) orangetip (<i>A. cethura</i>)	22	funereal duskywing (<i>E. funeralis</i>)	587
common California ringlet (<i>Coenonympha californica</i>)	652	Artful duskywing (<i>E. pacuvius</i>)	10
Common ringlet (<i>Coenonympha tullia</i>)	2	mournful duskywing (<i>E. tristis</i>)	88
cabbage white (<i>Pieris rapae</i>)	133	Duskywing sp. (<i>Erynnis</i> sp.)	26
checkered (common) white (<i>Pontia protodice</i>)	310	Northern white skipper (<i>Heliopetes ericetorum</i>)	89
spring white (<i>P. sisymbrii</i>)	41	fiery skipper (<i>Hylephila phyleus</i>)	19
unidentified white	208	Eufala skipper (<i>Lerodea eufala</i>)	11
Sulphurs		white (common) checkered-skipper (<i>Pyrgus albescens</i>)	403
orange sulphur (<i>Colias eurytheme</i>)	365	Arizona powdered skipper (<i>Systasea zampa</i>)	2
Harford's sulphur (<i>C. harfordii</i>)	68	unidentified Skipper	12
sleepy orange (<i>Eurema nicippe</i>)	8	Miscellaneous	
dainty sulphur (<i>Nathalis iole</i>)	15	Gulf fritillary (<i>Agraulis vanillae incarnata</i>)	24
cloudless sulfur (<i>Phoebus sennae marcellina</i>)	5	Spring azure (<i>Celastrina ladon</i>)	1
unidentified sulphur	198	Striated queen (<i>Danaus gilippus</i>)	1
Hairstreaks		monarch (<i>D. plexippus</i>)	57
great purple hairstreak (<i>Atlides halesus corcorani</i>)		Pearly marble (<i>Euchloe hyantis</i>)	9
brown elfin (<i>Callophrys augustinus</i>)	48	common buckeye (<i>Junonia coenia grisea</i>)	233
bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	30	mourning cloak (<i>Nymphalis antiopa</i>)	15
gray hairstreak (<i>Strymon melinus pudica</i>)	97	California tortoiseshell (<i>N. californica</i>)	1
		Callippe fritillary (<i>Speyeria callippe consecra</i>)	3
		Comstock's fritillary (<i>Speyeria callippe comstocki</i>)	7
Column Subtotal	7,371	Column Subtotal	5,253
		Total Butterflies Observed	12,624

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APPENDIX E

Coastal California Gnatcatcher Survey Reports

January 26, 2015

8207

U.S. Fish and Wildlife Service
Attention: Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: *California Gnatcatcher Survey Report for the Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19) County of San Diego, Jamul California*

Dear Recovery Permit Coordinator:

This report documents the results of protocol-level presence/absence surveys for the coastal California gnatcatcher (*Poliophtila californica californica*; CAGN). Focused surveys were conducted throughout all areas of suitable habitat (i.e., coastal sage scrub and sub-associations) for the proposed Proctor Valley Project (project) (Figure 1). The proposed project consists of three Village/Planning Areas (i.e., Village 14 and Planning Areas 16 and 19) within Otay Ranch and a portion of Proctor Valley Road located in the City of San Diego or City of Chula Vista, California (Figure 1). The Village/Planning areas are either owned by the city, privately owned or owned by the California Department of Fish and Wildlife (CDFW). This report focuses on the private- and city-owned portions of the project. Results of the CDFW surveys are provided as a separate survey report. Dudek biologists Thomas Liddicoat, Erin Bergman, Paul Lemons, and Jeff Priest conducted a first round of surveys in June and July 2014. A second round of surveys was conducted in October and November 2014 by Dudek biologists Thomas Liddicoat, Erin Bergman, Paul Lemons, Jeff Priest, Anita Hayworth, Kam Muri, Brock Ortega, and Tricia Wotipka-Priest.

The CAGN is a federally-listed threatened species and a California Department of Fish and Game Species of Special Concern. It is closely associated with coastal sage scrub habitat and typically occurs below 950 feet elevation and on slopes less than 40% (Atwood 1990), but CAGN have been observed at elevations greater than 2,000 feet. The species is threatened primarily by loss, degradation, and fragmentation of coastal sage scrub habitat, and is also impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The proposed Proctor Valley project is located in within the community of Jamul in southern San Diego County, California. Specifically, the project site is located on the U.S. Geological

Survey 7.5 minute series Jamul Mountains Quadrangle map, Township 17 South, Range 1 East, section 17 (Figure 2). The project site is centered around Proctor Valley Road, which generally runs north to south through the entire site.

The project site supports native vegetation communities and is topographically diverse from steep-rolling hillsides along the east portions of the project to flat areas along Proctor Valley Road. Elevations across the site decrease from north to south; approximately 950 feet above mean sea level (AMSL) along the northern boundary, approximately 630 feet AMSL centrally, and approximately 540 feet ASML along the southern boundary. The highest elevation is slightly above 1,500 feet and found within the most eastern portion of the project site within Village 16 (privately-owned lands).

The entire site, other than Proctor Valley Road, is undeveloped with a number of dirt roads traversing the project site. A transmission line crosses the project site from west to east. Vacant lands surround much of the project site; however, existing residential development is present to the north and south. Upper Otay Lake is also located to the south.

Vegetation Communities

Vegetation types that potentially support gnatcatchers within the privately-owned and city-owned lands focused survey area included coastal sage scrub and disturbed coastal sage scrub, totaling approximately 907 acres. The acreages of suitable habitat surveyed is provided in Table 1 and descriptions of these communities are provided below.

Table 1
Survey Area Acreages

Vegetation Community	Privately-owned Lands (Survey Areas 1, 2, 3, 4, 5)	City-owned Lands (Survey Area 1)	Total
Round 1			
Coastal Sage Scrub	248	61	309
Disturbed Coastal Sage Scrub	60	99	159
Subtotal	308	160	468
Round 2			
Coastal Sage Scrub	418	0	418
Disturbed Coastal Sage Scrub	21	0	22
Subtotal	439	0	439
Total	747	160	907

Coastal Sage Scrub

Coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.); with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and toyon (*Heteromeles arbutifolia*). It typically develops on south-facing slopes and other xeric situations (Holland 1986).

Coastal sage scrub habitat occurs throughout the entire project site. Areas of disturbed coastal sage scrub generally support a higher percent cover of non-native annual grass species such as wild oat (*Avena barbata*) and ripgut species (*Bromus* spp.). The southern areas of the project have the largest portion of coastal sage scrub habitat but most of the acreage comes from the western and eastern boundaries in the northern half of the project site.

METHODS

The City is enrolled in the Natural Community Conservation Planning (NCCP) through its San Diego Multiple Species Conservation Program (MSCP); thus, in accordance with U.S. Fish and Wildlife Service (USFWS) (USFWS 1997) survey protocol, three surveys were conducted for the project site. The project site was surveyed over two rounds of field surveys to cover the entire project site and were conducted under the authorization of permit holders Thomas Liddicoat (TE139634-2), Erin Bergman (TE813545-5), Paul Lemons (TE051248-4), Jeff Priest (TE840619), Anita Hayworth (TE781084-8), Kam Muri (TE051250-3), Brock Ortega (TE813545-5), and Tricia Wotipka-Priest (independent investigator under permit TE840619) according to the schedule provided below in Table 2. The specific areas surveyed during the two rounds of surveys are provided in Figure 3.

Table 2
Survey Details and Conditions

Site	Date	Time	Personnel	Survey Conditions	Survey Area
<i>Round One</i>					
Privately-Owned Lands	6/26/14	0640–1210	TSL	100-70% cc; wind 0–3mph; 65-79°F	4
	6/26/14	0600–1200	EJB	100-0% cc; wind 1–4mph; 62-86°F	1
	6/27/14	0615–1300	EJB	90-0% cc; wind 1–5mph; 63-87°F	3
	7/2/14	0602-1200	EJB	100-0% cc; wind 1–4mph; 62-78°F	1
	7/3/14	0608-1200	EJB	100-0% cc; wind 1–5mph; 64-81°F	3
	7/9/14	0700-1200	JDP	100-0% cc; wind 1–4mph, 67-82°F	4

Table 2
Survey Details and Conditions

Site	Date	Time	Personnel	Survey Conditions	Survey Area
City Owned Lands	7/9/14	0700-1200	EJB	100-0% cc; wind 1-3mph; 62-84°F	1
	7/10/14	0600-1200	EJB	100-0% cc; wind 1-2mph; 63-82°F	3
	7/16/14	0700-1200	TSL	100-0% cc; wind 0-5mph; 68-81°F	4
	6/18/14	0700-1205	TSL	0% cc; wind 3-8 mph, 59-73°F	5
	6/26/14	0640-1210	TSL	100-70% cc; wind 0-3 mph; 65-79°F	4
	7/1/14	0608-1200	EJB	100-0% cc; wind 1-5mph, 63-84°F	5
	7/8/14	0700-1200	PML	60-5% cc; wind 4-8mph (9-15 gusts); 67-89°F	5
	7/9/14	0700-1200	JDP	100-0% cc; wind 1-4mph, 67-82°F	4
	7/16/14	0700-1200	TSL	100-0% cc; wind 0-5mph; 68-81°F	4
<i>Round Two</i>					
Privately Owned Lands	10/23/14	0620-1145	EJB	0% cc; wind 1-6 mph; 58-79°F	1
	10/31/14	0615-1200	EJB	0% cc; wind 1-6 mph; 56-81°F	1
	11/7/14	0600-1150	AMH	0% cc; wind 3-5 mph; 64-78°F	1
	10/24/14	0700-1040	TSL	0% cc; wind 0-3 mph; 55-74°F	2
	11/2/14	0700-1200	JDP	50% cc; wind 0-4 mph; 57-68°F	2
	11/11/14	0540-1005	BAO	100% cc; wind 0-3 mph; 50-66°F	2
	10/24/14	0645-1030	JDP	0% cc; wind 0-4 mph; 60-72°F	3
	11/4/14	0700-1045	TWP	50% cc; wind 0-4 mph; 57-68°F	3
	11/11/14	0715-1145	KJM	0% cc; wind 2-3 mph; 51-71°F	3
	10/27/14	0715-1300	KJM	0% cc; wind 0-6 mph; 54-71°F	4
	11/4/14	0700-1200	JDP	0% cc; wind 0-6 mph; 56-74°F	4
	11/16/14	0710-1200	PLM	5-15% cc; wind 0-5 mph; 60-69°F	4
	10/30/14	0700-1030	PLM	40-70% cc; wind 0-2 mph; 60-74°F	5
	11/6/14	0545-0955	BAO	0% cc; wind 0-1 mph; 50-83°F	5
	11/13/14	0615-1030	AMH	0% cc; wind 1-3 mph; 55-69°F	5

Personnel: TSL=Thomas Liddicoat (TE139634-2), EJB=Erin Bergman (TE813545-5), PML=Paul Lemons (TE051248-4), JDP= Jeff Priest (TE840619), AMH=Anita Hayworth (TE781084-8), KJM=Kam Muri (TE051250-3), BAO=Brock Ortega (TE813545-5), and TWP=Tricia Wotipka-Priest (independent investigator under permit TE840619)

Survey Conditions: cc = cloud cover, °F = degrees Fahrenheit, mph = miles per hour

In accordance with the protocol, no more than 100-acres of suitable habitat was surveyed by a single biologist during each visit. The entire project area was covered on-foot during each survey visit for 100% visual and audible coverage of the site; routes of the surveys are illustrated on Figure 3. During each round of surveys the visits were conducted at minimum one-week intervals (i.e., 7-day) and were performed in conformance with the currently accepted protocol of the USFWS *Coastal California Gnatcatcher (Poliophtila californica californica) Presence/Absence Survey Protocol* (USFWS 1997).

A topographic map at 100-scale of the site (1 inch = 100 feet) overlain with vegetation polygons and the project boundary was carried during the survey. Additionally, digital mobile maps were utilized during the surveys to assist in navigating each survey area and mapping any gnatcatcher present. Weather conditions during surveys are provided in Table 2. Appropriate binoculars (e.g., 8.5x42 to 10x50 and magnification) were used to aid in detecting and identifying bird species. A tape of recorded gnatcatcher vocalizations was played approximately every 100-150 feet to induce responses from potentially present gnatcatchers. Tape-playback was terminated immediately upon detection of any gnatcatchers to minimize the potential for harassment. Weather conditions, time of day, and season were appropriate for the detection of gnatcatchers.

RESULTS

To Dudek's knowledge, no previous presence/absence survey efforts for California Gnatcatcher have occurred for the project site. Throughout the two rounds of surveys a total of 25 CAGN were observed including nine pairs, four fledglings/juveniles, and two lone males (Figure 4). The survey results according to property ownership are described below.

Privately-Owned Lands

A total of four CAGN pairs and one lone male were detected during the two rounds of surveys within the privately-owned lands incorporated into the proposed project survey area (Figure 4). Although these surveys did not include identifying CAGN territories, three CAGN pairs and the lone male were detected in the proposed Village 14 site, and the other CAGN pair was observed within Village 16. No CAGN were observed within Village 19 site.

City Owned Lands

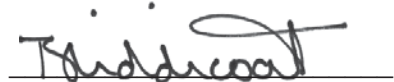
A total of five CAGN pairs, one lone male, and four juveniles were detected during the two rounds of surveys within the City owned lands incorporated in to the project survey area (Figure 4).

U.S. Fish and Wildlife Service

Subject: California Gnatcatcher Survey Report for the Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19) County of San Diego, Jamul California

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Sincerely,



Thomas S. Liddicoat
Permit # TE139634-2



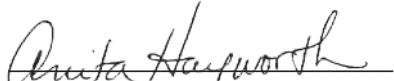
Erin Bergman
Permit # TE813545-5



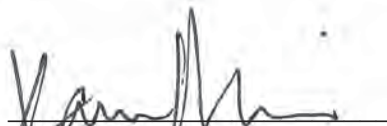
Jeff Priest
Permit # TE840619



Paul Lemons
Permit # TE051248-4



Anita Hayworth
Permit # TE781084-8



Kam Muri
Permit # TE051250-3



Brock Ortega
Permit # TE813545-5



Tricia Wotipka-Priest
Independent investigator under
permit # TE840619)

Att.: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, CAGN Survey Comparison
Figure 4, Biological Resources and CAGN Survey Routes
Appendix A, Compendium of Wildlife Species Observed or Detected

REFERENCES

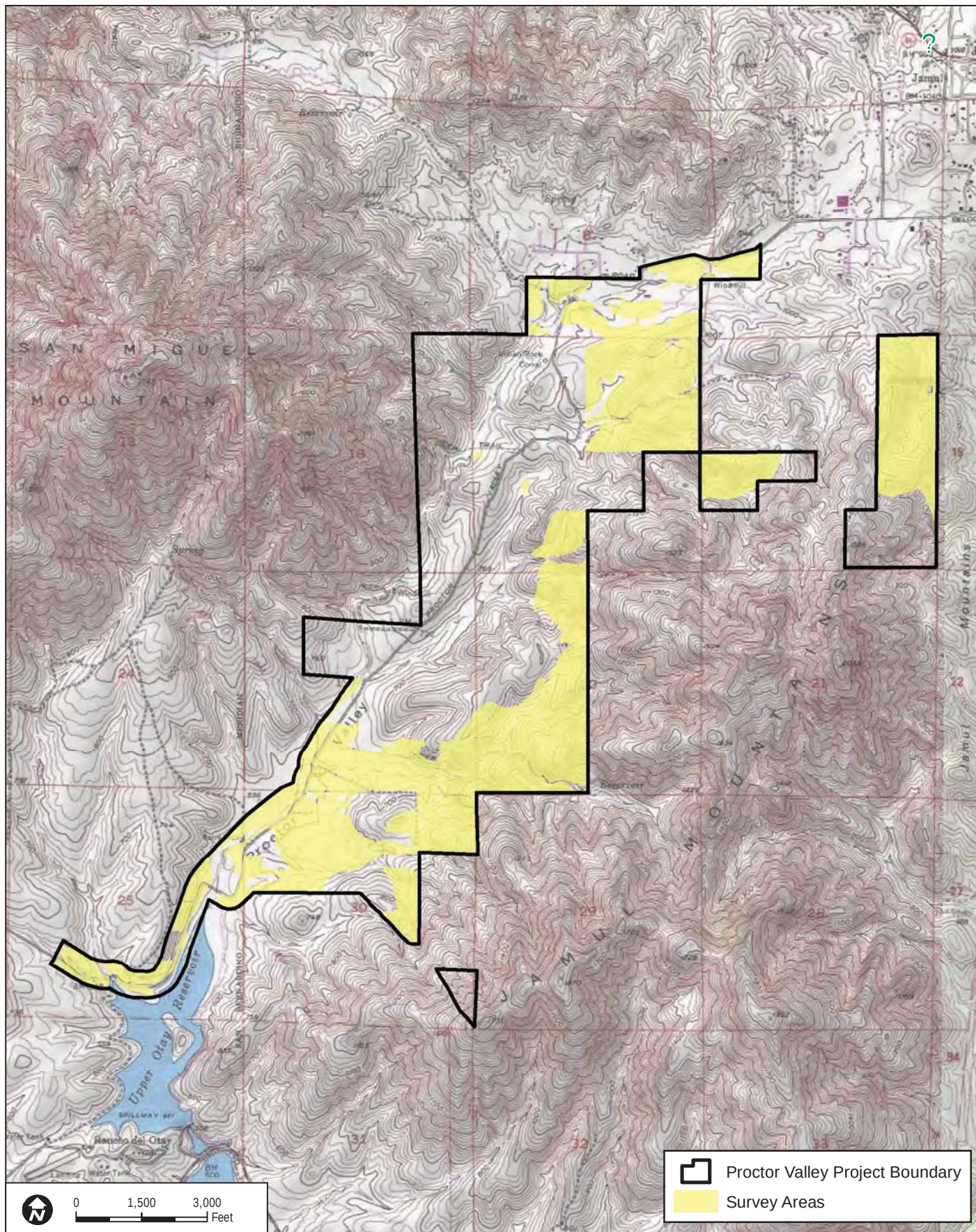
- Atwood, J.L. 1990. *Status review of the California gnatcatcher* (*Poliophtila californica*). Unpublished technical report, Manomet Bird Observatory, Manomet, Massachusetts. 79 pp.
- Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.
- USFWS (U.S. Fish and Wildlife Service). 1997. *Coastal California Gnatcatcher* (*Poliophtila californica californica*) *Presence/Absence Survey Guidelines*, July 28, 1997.



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**FIGURE 1
Regional Map**

2014 FOCUSED CALIFORNIA GNATCATCHER SURVEY REPORT FOR PROCTOR VALLEY PROJECT
(OTAY RANCH VILLAGE 14, PLANNING AREAS 16 AND 19) - PRIVATE AND CITY OWNED LANDS

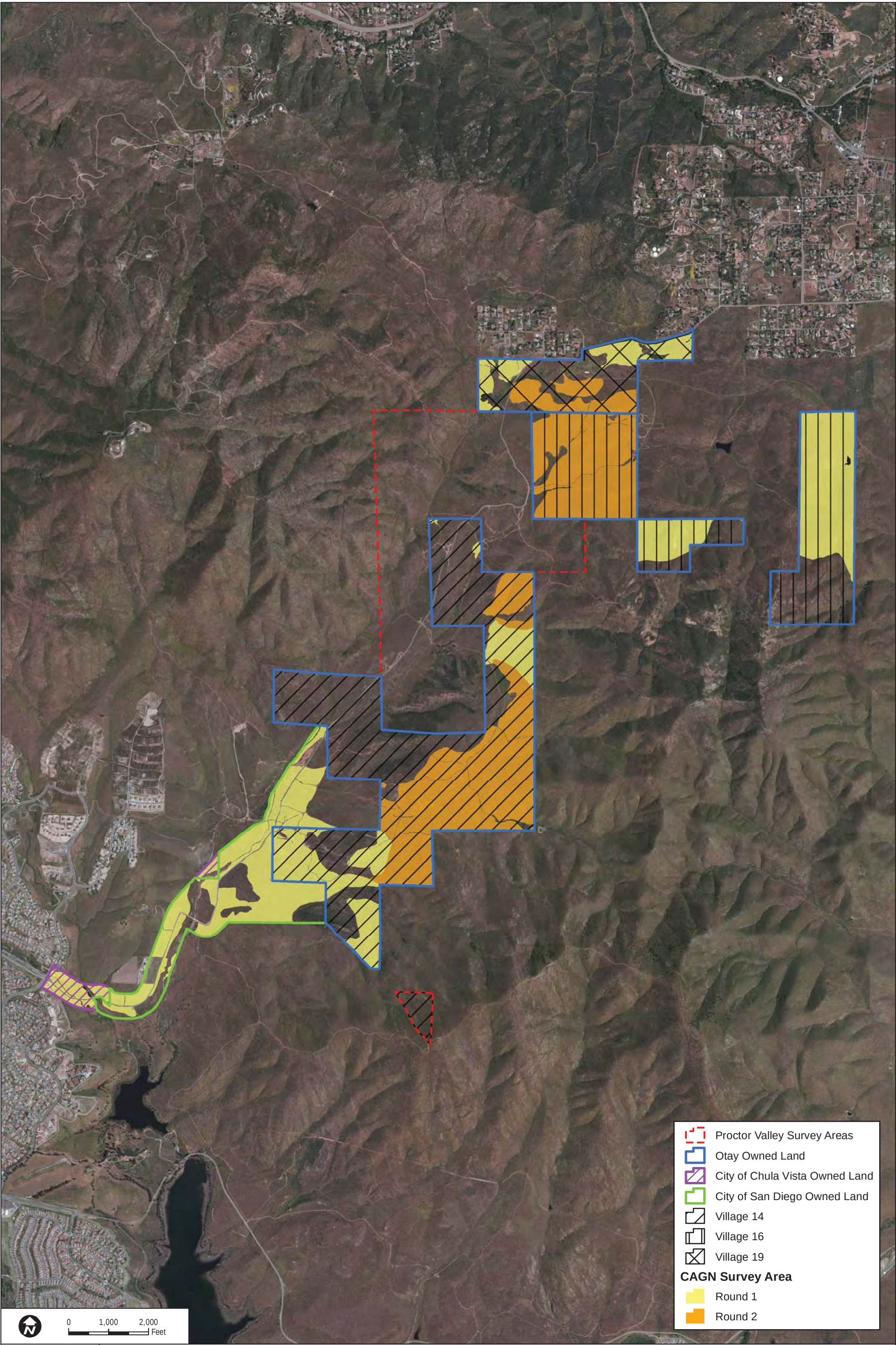


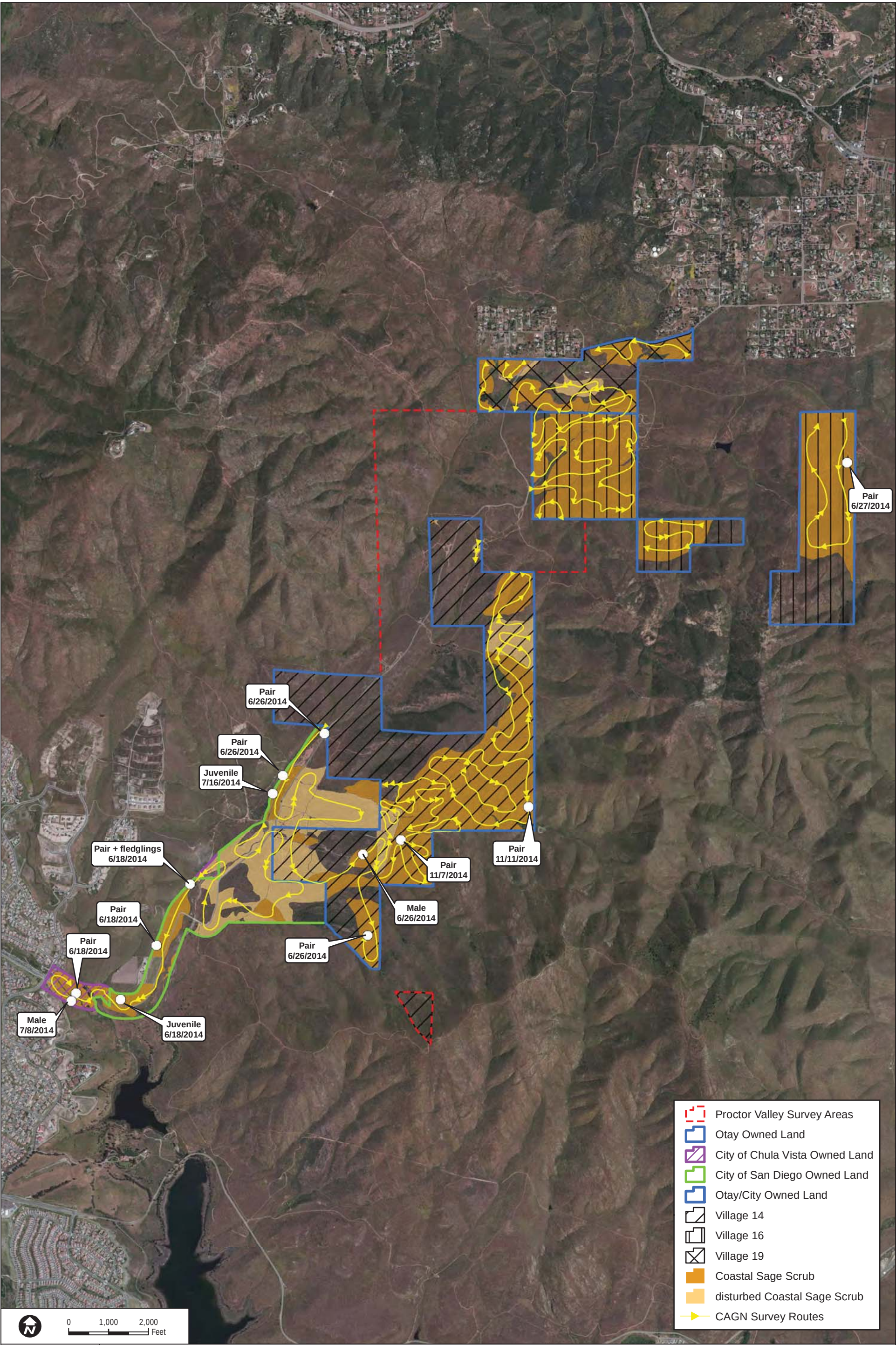
DUDEK

SOURCE: USGS 7.5-Minute Series Jamul Mountains Quadrangle

FIGURE 2
Vicinity Map

2014 FOCUSED CALIFORNIA GNATCATCHER SURVEY REPORT FOR PROCTOR VALLEY PROJECT
(OTAY RANCH VILLAGE 14, PLANNING AREAS 16 AND 19) - PRIVATE AND CITY OWNED LANDS





APPENDIX A
*Compendium of Wildlife Species
Observed or Detected*

APPENDIX A

Compendium of Wildlife Species Observed or Detected

BIRDS

ACCIPITRIDAE – HAWKS

Accipiter cooperii – Cooper’s hawk
Buteo jamaicensis – red-tailed hawk
Buteo lineatus – red-shouldered hawk
Circus cyaneus – northern harrier

AEGITHALIDAE – BUSHTITS

Psaltiriparus minimus – bushtit

ALAUDIDAE – LARKS

Eremophila alpestris – horned lark

APODIDAE – SWIFTS

Aeronautes saxatalis – white-throated swift

CAPRIMULGIDAE – GOATSUCKERS

Chordeiles acutipennis – lesser nighthawk

CARDINALIDAE – CARDINALS AND ALLIES

Passerina caerulea – blue grosbeak

CATHARTIDAE – NEW WORLD VULTURES

Cathartes aura – turkey vulture

COLUMBIDAE – PIGEONS AND DOVES

Columbina passerina—common ground-dove
* *Streptopelia decaocto* – Eurasian collared-dove
Zenaida macroura – mourning dove

CORVIDAE – JAYS AND CROWS

Apelocoma californica – western scrub-jay
Corvus brachyrhynchos – American crow
Corvus corax – common raven

CUCULIDAE – CUCKOOS, ROADRUNNERS, AND ANIS

Geococcyx californianus – greater roadrunner

APPENDIX A (Continued)

EMBERIZIDAE – BUNTINGS AND SPARROWS

Aimophila ruficeps canescens – Southern California rufous-crowned sparrow
Ammodramus savannarum – grasshopper sparrow
Chondestes grammacus – lark sparrow
Melospiza melodia – song sparrow
Passerculus sandwichensis—savannah sparrow
Pipilo crissalis – California towhee
Pipilo maculatus – spotted towhee
Zonotrichia leucophrys—white-crowned sparrow

FALCONIDAE – CARACARAS AND FALCONS

Falco sparverius – American kestrel

FRINGILLIDAE – FINCHES

Carpodacus mexicanus – house finch
Carduelis psaltria – lesser goldfinch

HIRUNDINIDAE – SWALLOWS

Petrochelidon pyrrhonota – cliff swallow
Tachycineta thalassina – violet-green swallow

ICTERIDAE – BLACKBIRDS

Agelaius phoeniceus – red-winged blackbird
Icterus cucullatus – hooded oriole
Sturnella neglecta – western meadowlark

MIMIDAE – THRASHERS

Mimus polyglottos – northern mockingbird
Toxostoma redivivum – California thrasher

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

PARULIDAE – WOOD-WARBLERS

Cardellina pusilla – Wilson’s warbler
Geothlypis trichas – common yellowthroat
Setophaga coronata—yellow-rumped warbler

PASSERIDAE – OLD WORLD SPARROWS

* *Passer domesticus* – house sparrow

APPENDIX A (Continued)

PHASIANIDAE – PHEASANTS AND QUAILS

Callipepla californica – California quail

PICIDAE – WOODPECKERS AND ALLIES

Colaptes auratus – northern flicker

Picoides nuttallii – Nuttall's woodpecker

PTILOGONATIDAE – SILKY FLYCATCHERS

Phainopepla nitens – phainopepla

STURNIDAE – STARLINGS AND ALLIES

* *Sturnus vulgaris* – European starling

SYLVIIDAE – GNATCATCHERS

Poliophtila californica californica – coastal California gnatcatcher

TIMALIIDAE – LAUGHINGTHRUSH AND WRENTIT

Chamaea fasciata – wrentit

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

Calypte costae – Costa's hummingbird

TROGLODYTIDAE – WRENS

Salpinctes obsoletus—rock wren

Thryomanes bewickii – Bewick's wren

TURDIDAE – THRUSHES

Sialia mexicana – western bluebird

TYRANNIDAE – TYRANT FLYCATCHERS

Myiarchus cinerascens – ash-throated flycatcher

Sayornis nigricans – black phoebe

Sayornis saya – Say's phoebe

Tyrannus verticalis – western kingbird

Tyrannus vociferans – Cassin's kingbird

INVERTEBRATE

BUTTERFLIES

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Vanessa cardui—painted lady

APPENDIX A (Continued)

MAMMAL

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit

RATS AND MICE

MURIDAE—RATS & MICE

Neotoma sp—woodrat species

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus(*Otospermophilus*) *beecheyi*—California ground squirrel

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

REPTILE

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

ANGUIDAE—ALLIGATOR LIZARDS

Elgaria multicarinata—southern alligator lizard

SNAKES

BOIDAE—BOAS

Lichanura trivirgata—rosy boa

* signifies introduced (non-native) species

January 26, 2015

8207

U.S. Fish and Wildlife Service
Attention: Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: California Gnatcatcher Survey Report for the Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19) State Owned Lands – CDFW, County of San Diego, Jamul, California

Dear Recovery Permit Coordinator:

This report documents the results of protocol-level presence/absence surveys for the coastal California gnatcatcher (*Polioptila californica californica*; CAGN). Focused surveys were conducted throughout all areas of suitable habitat (i.e., coastal sage scrub and sub-associations) for the proposed Proctor Valley Project (project) (Figure 1). The proposed project consists of three Village/Planning Areas (i.e., Village 14 and Planning Areas 16 and 19) within Otay Ranch and a portion of Proctor Valley Road located in the City of San Diego, California (Figure 1). The Village/Planning areas are either privately owned or owned by the California Department of Fish and Wildlife (CDFW). This report focuses on the state-owned, California Department of Fish and Wildlife (CDFW) portions of the project study area. Results of the surveys within the Private/City owned lands are provided as a separate survey report. Dudek biologists, Erin Bergman and Jeff Priest conducted a first round of surveys in June and July 2014. A second round was conducted in October and November 2014 by Dudek biologists Paul Lemons, Jeff Priest, Anita Hayworth, Kam Muri, Brock Ortega, and Tricia Wotipka-Priest.

The CAGN is a federally-listed threatened species and a California Department of Fish and Game Species of Special Concern. It is closely associated with coastal sage scrub habitat and typically occurs below 950 feet elevation and on slopes less than 40% (Atwood 1990), but CAGN have been observed at elevations greater than 2,000 feet. The species is threatened primarily by loss, degradation, and fragmentation of coastal sage scrub habitat, and is also impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The proposed Proctor Valley project is located in the community of Jamul within southern San Diego County, California. Specifically, the project site is located on the U.S. Geological

Survey 7.5 minute series Jamul Mountains Quadrangle map, Township 17 South, Range 1 East, section 17 (Figure 2). The project site is centered around Proctor Valley Road, which runs north south through the entire site.

The project site supports native vegetation communities and is topographically diverse from steep-rolling hillsides along the east portions of the project to flat areas along Proctor Valley Road. Elevations across the site decrease from north to south; approximately 950 feet above mean sea level (AMSL) along the northern boundary, approximately 630 feet AMSL centrally, and approximately 540 feet ASML along the southern boundary. The highest elevation is slightly above 1,500 feet and found within the most eastern portion of the project site within Village 16 (privately-owned lands).

The entire site, other than Proctor Valley Road, is undeveloped with a number of dirt roads traversing the project site. A transmission line crosses the project site from west to east. Vacant lands surround much of the project site; however, existing residential development is present to the north and south. Upper Otay Lake is also located to the south.

Vegetation Communities

Vegetation types that potentially support gnatcatchers within the state-owned lands focused survey area included coastal sage scrub and disturbed coastal sage scrub, totaling approximately 156 acres. The acreages of suitable habitat surveyed is provided in Table 1 and descriptions of these communities are provided below.

Table 1
Survey Area Acreages

Vegetation Community	State Owned Lands - CDFW
<i>Round 1</i>	
Coastal Sage Scrub	66
Disturbed Coastal Sage Scrub	30
<i>Subtotal</i>	96
<i>Round 2</i>	
Coastal Sage Scrub	60
Disturbed Coastal Sage Scrub	0
<i>Subtotal</i>	60
<i>Total</i>	156

Coastal Sage Scrub

Coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.); with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and toyon (*Heteromeles arbutifolia*). It typically develops on south-facing slopes and other xeric situations (Holland 1986).

Coastal sage scrub and disturbed coastal sage scrub habitats occur throughout the entire project site. Areas of disturbed coastal sage scrub generally support a higher percent cover of non-native annual grass species such as wild oat (*Avena barbata*) and ripgut species (*Bromus* spp.). Within the State owned lands, the coastal sage scrub is a continuous swath that covers both slopes on either side of the major drainage that runs southwest through the parcel.

METHODS

Surveys were conducted under the authorization of permit holders Erin Bergman (TE813545-5), Paul Lemons (TE051248-4), Jeff Priest (TE840619), Anita Hayworth (TE781084-8), Kam Muri (TE051250-3), Brock Ortega (TE813545-5), and Tricia Wotipka-Priest (independent investigator under permit TE840619). The project site was surveyed over two rounds of field surveys to cover the entire project site. During each round of surveys suitable habitat within the project site was surveyed three times for CAGN within coastal sage scrub (including disturbed coastal sage scrub) according to the schedule provided below in Table 2. The specific areas surveyed during the two rounds of surveys are provided in Figure 3.

Table 2
Survey Conditions

Site	Date	Time	Personnel	Survey Conditions
Round One				
State Owned Lands – CDFW	6/26/14	0700–1200	JDP	100-70% cc; wind 1–5mph; 64-78°F
	7/11/14	0600–1200	EJB	100-0%cc; wind 1–2mph; 62-81°F
	7/18/14	0600–1200	EJB	100-95%; wind 1–2mph; 62-86°F
Round Two				
State Owned Lands – CDFW	10/24/14	1030-1145	JDP	0% cc; wind 0-4 mph; 60-72°F
	11/4/14	1045-1200	TWP	50% cc; wind 0-4 mph; 57-68°F
	11/11/14	1145-1315	KJM	0% cc; wind 2-3 mph; 51-71°F
	10/30/14	1030-1120	PML	40-70% cc; wind 0-2 mph; 60-74°F

Table 2
Survey Conditions

Site	Date	Time	Personnel	Survey Conditions
	11/6/14	0955-1115	BAO	0% cc; wind 0-1 mph; 50-83°F
	11/13/14	1030-1150	AMH	0% cc; wind 1-3 mph; 55-69°F

Personnel: EJB=Erin Bergman (TE813545-5), JDP= Jeff Priest (TE840619), PML=Paul Lemons (TE051248-4), AMH=Anita Hayworth (TE781084-8), KJM=Kam Muri (TE051250-3), BAO=Brock Ortega (TE813545-5), and TWP=Tricia Wotipka-Priest (independent investigator under permit TE840619) Survey Conditions: Cc = cloud cover, °F = degrees Fahrenheit, mph = miles per hour

In accordance with the protocol, no more than 100-acres of suitable habitat was surveyed by a single biologist during each visit. The entire project area was covered on-foot during each survey visit for 100% visual and audible coverage of the site; routes of the surveys are illustrated on Figure 4. During each round of surveys the visits were conducted at minimum one-week intervals (i.e., 7-day) and were performed in conformance with the currently accepted protocol of the USFWS *Coastal California Gnatcatcher (Poliophtila californica californica) Presence/Absence Survey Protocol* (USFWS 1997).

A topographic map of the site (scale 1 inch = 100 feet) overlain with vegetation polygons was used for the survey. Additionally, digital mobile maps were utilized during the surveys to assist in navigating each survey area and mapping any gnatcatcher present. Weather conditions during surveys are provided in Table 2. Binoculars (8.5x42 to 10x50 magnification) were used to aid in detecting and identifying bird species. Taped gnatcatcher vocalizations were played frequently in order to elicit a response from the species, if present. The tape was played approximately every 100–150 feet within suitable habitat to induce responses from potentially present gnatcatchers. Tape-playback was terminated immediately upon detection of any gnatcatchers to minimize the potential for harassment. Weather conditions, time of day, and season were appropriate for the detection of gnatcatchers.

RESULTS

State Owned Lands - CDFW

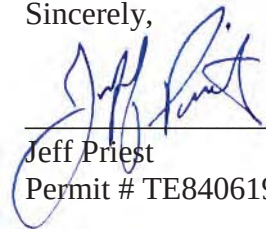
One individual male California gnatcatcher was observed within the State Owned Lands - CDFW of the proposed Proctor Valley project site during one of the first round surveys only (Figure 4). No other California gnatcatchers were detected within State Owned Lands-CDFW during any of other the survey visits

U.S. Fish and Wildlife Service

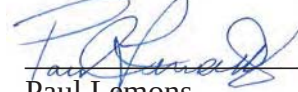
Subject: California Gnatcatcher Survey Report for the Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19) State Owned Lands – CDFW, County of San Diego, Jamul, California

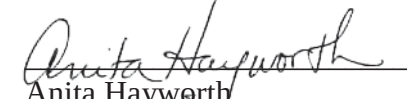
I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

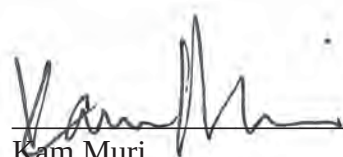
Sincerely,


Jeff Priest
Permit # TE840619

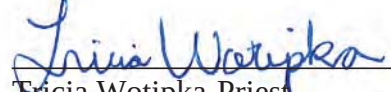

Erin Bergman
Permit # TE813545-5


Paul Lemons
Permit # TE051248-4


Anita Hayworth
Permit # TE781084-8


Ram Muri
Permit # TE051250-3


Brock Ortega
Permit # TE813545-5


Tricia Wotipka-Priest
Independent investigator under
permit # TE840619)

Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, CAGN Survey Comparison
Figure 4, Biological Resources and CAGN Survey Routes
Appendix A, Compendium of Wildlife Species Observed or Detected

REFERENCES

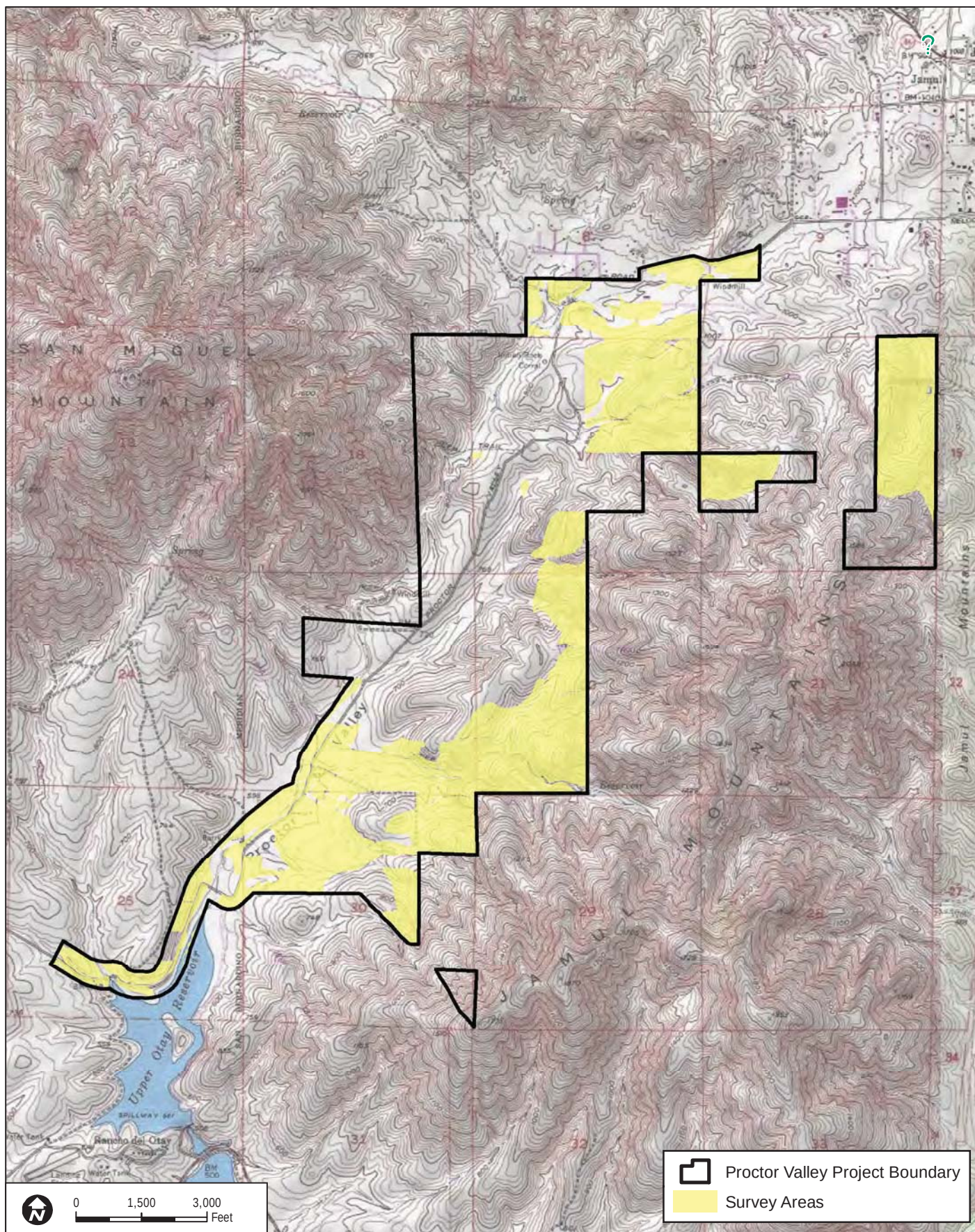
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FIGURE 1
Regional Map

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(OTAY RANCH VILLAGE 14, PLANNING AREAS 16 AND 19) - STATE OWNED LANDS

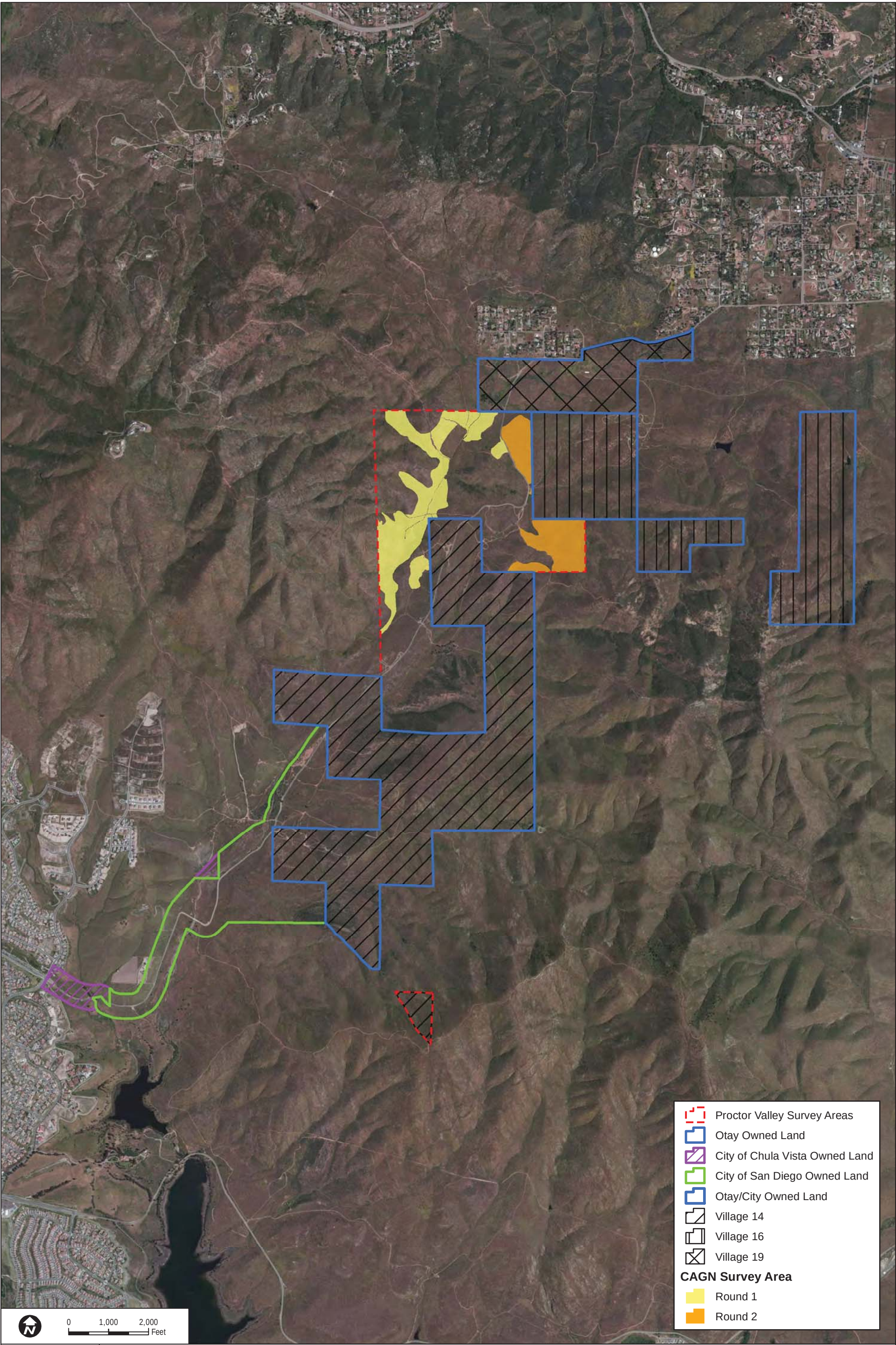


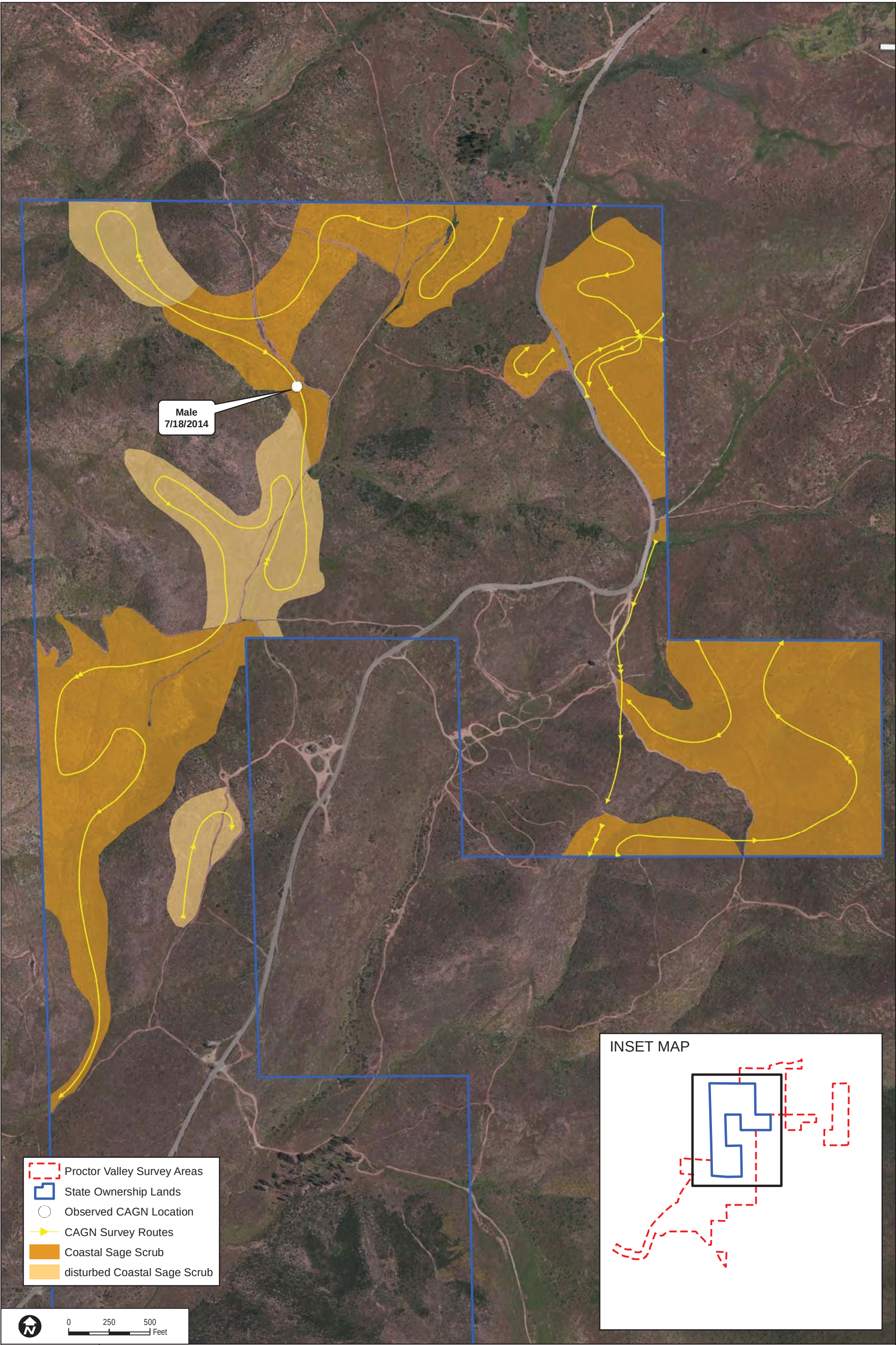
DUDEK

SOURCE: USGS 7.5-Minute Series Jamul Mountains Quadrangle

FIGURE 2
Vicinity Map

2014 FOCUSED CALIFORNIA GNATCATCHER SURVEY REPORT FOR PROCTOR VALLEY PROJECT
(OTAY RANCH VILLAGE 14, PLANNING AREAS 16 AND 19) - STATE OWNED LANDS





APPENDIX A
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Observed or Detected*

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Compendium of Wildlife Species Observed or Detected

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ALAUDIDAE – LARKS

Eremophila alpestris – horned lark

APODIDAE – SWIFTS

Aeronautes saxatalis – white-throated swift

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Cathartes aura – turkey vulture

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Zenaida macroura – mourning dove

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Corvus corax – common raven

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Passerculus sandwichensis- Savannah sparrow
Pipilo crissalis – California towhee
Pipilo maculatus – spotted towhee
Zonotrichia leucophrys- White-crowned sparrow

APPENDIX A (Continued)

FALCONIDAE – CARACARAS AND FALCONS

Falco sparverius – American kestrel

FRINGILLIDAE – FINCHES

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Carduelis psaltria – lesser goldfinch

HIRUNDINIDAE – SWALLOWS

Petrochelidon pyrrhonota – cliff swallow

Tachycineta bicolor – tree swallow

ICTERIDAE – BLACKBIRDS

Icterus cucullatus – hooded oriole

Sturnella neglecta – western meadowlark

MIMIDAE – THRASHERS

Mimus polyglottos – northern mockingbird

Toxostoma redivivum – California thrasher

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

PARULIDAE—WOOD-WARBLERS

Setophaga coronata—yellow-rumped warbler

PASSERIDAE – OLD WORLD SPARROWS

* *Passer domesticus* – house sparrow

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PICIDAE—WOODPECKERS AND ALLIES

Picoides nuttallii—Nuttall's woodpecker

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Phainopepla nitens – phainopepla

SYLVIIDAE – GNATCATCHERS

Polioptila californica californica – coastal California gnatcatcher

TIMALIIDAE – LAUGHINGTHRUSH AND WRENTIT

Chamaea fasciata – wrentit

APPENDIX A (Continued)

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna’s hummingbird

Calypte costae – Costa’s hummingbird

TROGLODYTIDAE—WRENS

Salpinctes obsoletus—rock wren

Thryomanes bewickii—Bewick’s wren

TYRANNIDAE – TYRANT FLYCATCHERS

Myiarchus cinerascens – ash-throated flycatcher

Sayornis nigricans- black phoebe

Sayornis saya- say’s phoebe

Tyrannus vociferans – Cassin’s kingbird

INVERTEBRATES

BUTTERFLIES

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Vanessa cardui—painted lady

MAMMALS

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit

Sylvilagus bachmani—Brush rabbit

RATS AND MICE

MURIDAE—RATS AND MICE

Neotoma sp.—Woodrat species

APPENDIX A (Continued)

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—Mule deer

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

ANGUIDAE—ALLIGATOR LIZARDS

Elgaria multicarinata—southern alligator lizard

* signifies introduced (non-native) species

APPENDIX F
Fairy Shrimp Survey Reports

August 18, 2015

8207

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: 2014/15 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19), San Diego County, California

Dear Recovery Permit Coordinator:

This report fulfills the reporting requirements in accordance with the Section 10(a)(1)(A) Recovery Permit and documents the results of a wet season presence/absence survey for vernal pool branchiopods conducted for the Proctor Valley project (project), located in the southwestern portion of San Diego County, California. This report documents a wet season survey conducted for the project in 2014/15.

The 2014/15 wet season survey was performed by Dudek biologists Danielle Mullen (Permit No. TE-31221B-0), Thomas Liddicoat (TE-139634) and Paul Lemons (TE-051248) between December 19, 2014, and June 1, 2015. The survey focused on the determination of the presence or absence of two federally listed endangered vernal pool branchiopod species, Riverside fairy shrimp (*Streptocephalus woottoni*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*), and was conducted according to the Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (Interim Survey Guidelines; USFWS 1996).

A total of 81 features were recorded within the project study area that could potentially support vernal pool branchiopods. Of these 81 features sampled, 7 features (A12, A22, A23, A27, B2, C14, C21) were found to support San Diego fairy shrimp, 4 features (B7, C5, C8, C12) were found occupied with versatile fairy shrimp (*Branchinecta lindahli*), and 7 features (B23, C13, C15, C16, C17, C18, C19) were observed with immature branchiopod individuals that were unidentifiable to species (*Branchinecta* sp.). The survey is discussed in further detail in the following sections.

PROJECT LOCATION AND EXISTING CONDITIONS

The project site is located within Otay Ranch, southwest of Jamul and northeast of Bonita (Figure 1, Regional Map). The Upper and Lower Otay Lakes are located to the south of the

project and open space borders the project site to the northwest and southeast. More specifically, the project site is located primarily southeast of Proctor Valley Road, within the Jamul Mountains U.S. Geological Survey 7.5-minute quadrangle, Township 17 South, Ranges 1 East and 1 West, Sections 8, 9, 16, 17, 18, 19, 20, 25 and 30 (Figure 2, Vicinity Map). The approximate center of the project site is located at a latitude and longitude of 32°40'57" north and 116°54'24" west.

The majority of the study area is undeveloped, with on-site elevations ranging between 590 feet and 1,200 feet above mean sea level. The study area is diverse in topography and contains a flat valley along Proctor Valley Road and rolling hills in the remainder of the site. The study area is bordered by the San Miguel and Jamul Mountains immediately to the northwest and southeast, with the foothills of these mountains encroaching into the study area. The eastern portion of the project site is located in the Jamul Mountains and contains the highest elevations. The project site is dominated by native upland vegetation (chaparral and sage scrub communities), with substantial areas of native and non-native grasslands. Various wetland plant communities also occur in the site.

Twelve soil series occur in the study area, including Diablo, Escondido, Friant, Linne, Olivenhain, Placentia, Riverwash, San Miguel–Exchequer, Visalia, Vista, Water, and Wyman. Specifically, 20 soil types occur in the study area, including 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; Linne clay 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 (Bowman 1973). Of those soil types, the Diablo, Olivenhain and San Miguel are known to support special-status plant species. Note that although Water is mapped on site by Bowman as a soil type, this area is located around and extends over 3,000 feet upstream from Upper Otay Lake. This area around the lake is not actually covered by water.

VEGETATION COMMUNITIES, LAND COVERS, AND VERNAL POOL FEATURES

The project site supports 11 vegetation communities and 3 land cover types and was mapped by Dudek biologists in April and May of 2014. Vegetation community classifications used in this report

follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008). Vegetation communities within the study area include granitic chamise chaparral (including disturbed form), southern mixed chaparral, Diegan coastal sage scrub (including disturbed form), Diegan coastal sage scrub: baccharis-dominated (including disturbed form), non-native grassland, cismontane alkali marsh (including disturbed), mulefat scrub, freshwater marsh, southern coast live oak riparian forest, southern willow scrub, and eucalyptus woodland. Land cover types in the study area include unvegetated channel, disturbed habitat, and urban/developed land.

Potentially suitable habitat (i.e., ephemeral wet/ponded features) for vernal pool branchiopods was identified on site and consists of depressions (natural and man-made) located in the lower-elevation areas of the project site, both east and west of Proctor Valley Road. Clusters/complexes of these features occur in multiple areas in the study area. The majority of the features are road-rut-type depressions, lack vegetation, and are located adjacent to or within frequently traveled access roads. All of the features recorded are considered potentially suitable habitat for vernal pool branchiopods. Within the survey area, the features were found in areas mapped as granitic chamise chaparral, coastal sage scrub: baccharis-dominated, non-native grassland, and disturbed habitat. Descriptions of these vegetation and land cover types are provided in the following paragraphs.

Granitic Chamise Chaparral

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). On site, granitic chamise chaparral is typically characterized by a relatively monotypic stand of chamise with some diversity of other shrubs and herbaceous cover. Areas where native species were co-dominant with non-native grasses were mapped as disturbed granitic chamise chaparral. Chamise chaparral occurs throughout much of the project site and is the most dominant vegetation community.

Diegan Coastal Sage Scrub: Baccharis-Dominated

Diegan coastal sage scrub: Baccharis-dominated is similar to Diegan coastal sage scrub but dominated by *Baccharis* species (desert broom (*B. sarothroides*) and/or coyote brush (*B. pilularis*)) (Oberbauer et al. 2008). This community typically occurs on disturbed sites or those with nutrient-poor soils and is often found within other forms of Diegan coastal sage scrub and on upper terraces of river valleys. This community is distributed along coastal and foothill areas in San Diego County. On site, areas mapped as Diegan coastal sage scrub: baccharis-dominated are dominated

by either coyote brush or desert baccharis but have other coastal sage species, such as Menzies' goldenbush (*Isocoma menziesii*), Eastern Mojave buckwheat (*Eriogonum fasciculatum*), or sage (*Salvia* spp.), present. Areas where native species were co-dominant with non-native grasses were mapped as Diegan coastal sage scrub: baccharis-dominated (disturbed). This community is mapped along Proctor Valley Road in the southern portion of the project site.

Non-Native Grassland

Non-native grassland consists of dense to sparse cover of annual grasses with flowering culms between 0.5 and 3 feet in height (Oberbauer et al. 2008). On site, oats (*Avena* spp.), bromes (*Bromus* spp.), stork's bills (*Erodium* spp.), and mustards (*Brassica* spp.) are the more dominant species in this community. Non-native grassland is mapped in the flatter portions of the Proctor Valley (Valley) throughout the project site.

Disturbed Habitat

Disturbed habitats are areas that have been physically disturbed and are no longer recognizable as native or naturalized vegetation associations (Oberbauer et al. 2008). These areas may continue to retain 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-highway vehicle (OHV) trails, areas repeatedly cleared for fuel management, or repeatedly used areas that prevent revegetation (e.g., parking lots, trails that have persisted for years). On site, the dirt roads, dirt trails, and OHV areas are mapped as disturbed habitat.

PREVIOUS BRANCHIOPOD STUDIES

Surveys to identify vernal pools in the Valley (including the project study area) have occurred over the last several decades and were first recorded in 1978 (AECOM and Hogan 2012). Prior to the USFWS 1996 Interim Survey Guidelines, various surveys were conducted, including Dudek surveys in 1992, when multiple vernal pool complexes were identified. During 2010/11 the City of San Diego, the Chaparral Lands Conservancy, and AECOM completed surveys to map any potential vernal pool features in the Valley during preparation of the Proctor Valley Vernal Pool Restoration Plan (Restoration Plan) (AECOM and Hogan 2012). Additionally, Rocks Biological Consulting and the Branchiopod Research Group at San Diego State University completed vernal pool surveys in the Valley to document vernal pool species for the Restoration Plan. For further details on previous branchiopod surveys in the Valley, refer to the Restoration Plan.

It is our understanding that no protocol-level surveys for listed branchiopods had been completed for the proposed project prior to this 2014/15 wet season survey. Therefore, this 2014/15 wet season survey will serve as the first-year protocol-level survey for the project.

SURVEY METHODS

This 2014/15 survey methodology included an initial field assessment of the entire project study area during the summer of 2014 to evaluate and map the location of potential vernal pool branchiopod habitat. This summer field survey was conducted by Dudek biologist Thomas Liddicoat (TE 139634) and was performed on foot and by vehicle to provide 100% visual coverage of the site. An aerial orthographic map overlaid with the site topography and the project study area boundary was carried to identify areas with potential to support vernal pool branchiopods. The maps of the Recovery Plan were also carried during the survey to identify known features in the project study area.

Onset significant rain events (i.e., greater than 0.20 inch cumulative) for the 2014/15 wet season at the project site began during the storm between December 2 and December 4, 2014. With continued heavy rainfall accumulation (approximately 2.8 inches recorded), protocol-level sampling commenced on site on December 19, 2014, in accordance with the survey protocol to initiate sampling within 2 weeks of initial inundation. All habitats (features) on site that met the USFWS inundation criteria (i.e., depth of 3 centimeters (1.2 inches) or greater 48 hours post rainfall) to initiate protocol-level surveys were sampled and USFWS survey forms were completed.

After initial inundation (i.e., wet at least 3 centimeters (1.2 inches) deep), all wet features were surveyed at approximately 2-week intervals, according to the survey protocol, until dried up or until 120 days of continuous inundation had elapsed. Features that dried up and then refilled were surveyed within 8 days of refilling and surveys were reinitiated at the 2-week interval. During the 2014/15 wet season survey, the project site was surveyed 11 times. A schedule of the 2014/15 survey season is presented in Table 1.

The surveys were conducted by Dudek biologists holding 10(a)(1)(A) recovery permits for vernal pool branchiopods: Danielle Mullen (Permit No. TE-31221B-0), Paul Lemons (TE-051248) and Thomas Liddicoat (TE-139634). Non-permitted Dudek biologists directly assisted a permit holder when necessary. During each site visit, surveyors evaluated all features to document inundation levels and performed sampling when appropriate. Throughout the 2014/15 season, daily precipitation was monitored from weather station KCACHULA20 in Chula Vista, California (Weather Underground Inc. 2014–2015).

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Table 1
2014/15 Schedule of Surveys

Survey Number	Biologist	Date
1	DAM, PML, TSL	December 19, 2014
2	DAM, TSL	January 2, 2015
3	DAM	January 13, 2015
4	DAM, TSL	January 16, 2015
5	DAM	January 30, 2015
6	DAM	February 13, 2015
7	DAM, TSL	March 3, 2015
8	DAM	March 16, 2015
9	DAM	March 30, 2015
10	TSL	May 18, 2015
11	TSL	June 1, 2015

DAM = Danielle Mullen; PML = Paul Lemons; TSL = Thomas Liddicoat.

Protocol-level sampling was performed within all features that were deemed suitable for use by vernal pool branchiopods and any depressions meeting the USFWS 3-centimeter (1.2-inch) inundation requirement. The location of each feature sampled was recorded using a Global Positioning System (GPS) unit with sub-meter accuracy. GPS data were downloaded into an ArcGIS file by Dudek geographic information systems (GIS) manager Mark McGinnis.

During each survey, surveyors inspected the individual features for depth, surface area of water, air and water temperature, level of disturbance, and presence of aquatic wildlife. An aquarium net was passed through every feature that met the USFWS inundation requirement. All portions of ponded water were surveyed from the bottom to the surface. Samples were collected, when needed, using the aquarium net and a 40-milliliter (1.4-ounce) glass vial. Specimens were stored in the vial with water collected where the specimen was found. Specimens were taken to the laboratory within 24 hours of collection and placed in a 200 proof ethyl alcohol solution for preservation. Each specimen was inspected thoroughly using a dissecting microscope and soft-tip forceps. Eriksen and Belk (1999) was used to verify the species of each specimen collected. The specimens are currently being prepared for submittal and accessioning according to the specifications in the survey protocol.

All information was recorded in the field on an electronic data sheet as provided in the survey protocol, with the most pertinent information (e.g., inundation, fairy shrimp presence/absence, and species identification) recorded on a spreadsheet survey log (Appendix A). The recorded daily weather monitored for the project area is provided in Appendix B. Survey data sheets

were completed for every feature that met the minimum USFWS inundation requirement at the time of sampling (Appendix C). Photographs of the features are included at the end of each data form in Appendix C.

SURVEY RESULTS

Feature Descriptions

A total of 81 features were identified as suitable habitat for vernal pool branchiopods and were sampled during the 2014/2015 wet survey season. The features were distributed randomly throughout the site; however, a few clusters/complexes were observed (see Figure 3 through Figure 11). Most of the features were located alongside or within existing dirt roads on site and are moderately disturbed in character. Many of the features detected show evidence of historical OHV disturbance (i.e., shaped like tire tracks). The features detected on site were either: (1) 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; (2) ephemeral basins: surface depressions that retain sufficient water level, support aquatic vegetation, and generally lack vehicle disturbance; or (3) vernal pools: depressions that retain sufficient water level, support vernal pool indicator plant species, and likely support vernal pool branchiopods.

Multiple vernal pool indicator species occur on site during the surveys. San Diego button-celery (*Eryngium aristulatum* var. *parishii*) is a federally and state-listed endangered, California Rare Plant Rank 1B.1, Multiple Species Conservation Program covered, and Los Angeles County List A species. It is an annual or perennial herb that is associated with vernal pools in coastal scrub and valley and foothill grassland. San Diego button-celery was found adjacent to Feature B2, which supported San Diego fairy shrimp. Other vernal pool indicator plant species observed on site include common brassbuttons (*Cotula coronopifolia*), slender woollyheads (*Psilocarphus tenellus*), San Diego goldenaster (*Bloomeria clevelandii*), and short woollyheads (*Psilocarphus brevissimus* var. *brevissimus*).

Fairy Shrimp Presence/Absence

During 11 survey sampling visits, seven features (A12, A22, A23, A27, B2, C14, and C21) were found occupied by San Diego fairy shrimp, four features (B7, C5, C8, and C12) were occupied by versatile fairy shrimp, and seven features (B23, C13, and C15–C19) were occupied by immature branchiopods that were unidentifiable to species (*Branchinecta* sp.). A summary of the survey results is provided in Table 2 and the full survey log is included in this report as

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Appendix A. The distribution of features sampled in the study area is presented in Figures 3 through 11 attached to this report.

Table 2
2014/15 Vernal Pool Branchiopods Survey Results

Feature ID	Branchiopod Species Observed
A1	None
A2	None
A3	None
A4	None
A5	None
A6	None
A7	None
A8	None
A9	None
A10	None
A11	None
A12	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
A13	None
A14	None
A15	None
A16	None
A17	None
A18	None
A19	None
A20	None
A21	None
A22	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
A23	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
A24	None
A25	None
A26	None
A27	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
AA1	None
AA2	None
AA3	None

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Table 2
2014/15 Vernal Pool Branchiopods Survey Results

Feature ID	Branchiopod Species Observed
AA4	None
B1	None
B2	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
B3	None
B4	None
B5	None
B6	None
B7	Fairy Shrimp Present; Versatile Fairy Shrimp (<i>Branchinecta lindahli</i>)
B8	None
B9	None
B10	None
B11	None
B12	None
B13	None
B14	None
B15	None
B16	None
B17	None
B18	None
B19	None
B20	None
B21	None
B22	None
B23	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
B24	None
B25	None
C1	None
C2	None
C3	None
C4	None
C5	Fairy Shrimp Present; Versatile Fairy Shrimp (<i>Branchinecta lindahli</i>)
C6	None

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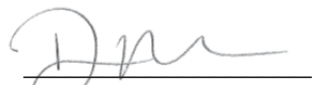
Table 2
2014/15 Vernal Pool Branchiopods Survey Results

Feature ID	Branchiopod Species Observed
C7	None
C8	Fairy Shrimp Present; Versatile Fairy Shrimp (<i>Branchinecta lindahli</i>)
C9	None
C10	None
C11	None
C12	Fairy Shrimp Present; Versatile Fairy Shrimp (<i>Branchinecta lindahli</i>)
C13	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
C14	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
C15	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
C16	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
C17	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
C18	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
C19	Fairy Shrimp Present; unknown species (immature <i>Branchinecta</i> sp.)
C20	None
C21	Fairy Shrimp Present; San Diego Fairy Shrimp (<i>Branchinecta sandiegonensis</i>)
C22	None
C23	None
C24	None
C25	None

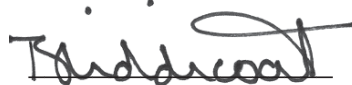
All required data collection information per the survey guidelines (USFWS 1996) was recorded and is included as Appendices A through C of this report.

I certify that the information presented in this survey report and attached exhibits fully and accurately represents my work. Please feel free to contact Brock Ortega at bortega@dudek.com, Danielle Mullen at dmullen@dudek.com, Thomas Liddicoat at tliddicoat@dudek.com, or Paul Lemons at plemons@dudek.com if you have any questions regarding the contents of this report.

Sincerely,


Danielle Mullen
TE-31221B-0


Paul Lemons
TE051248


Thomas Liddicoat
TE139634

Recovery Permit Coordinator

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Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figures 3–11, Feature Locations and Species Observed
Appendix A, Survey Log
Appendix B, Weather Data
Appendix C, Survey Data Forms and Photographs

cc: Brock Ortega, Dudek

REFERENCES CITED

AECOM and D. Hogan. 2012. *Proctor Valley Vernal Pool Restoration Plan*. September 2012.

Bowman, R.H. 1973. Soil Survey, San Diego Area, California, Part 1. United States Department of the Agriculture.

Eriksen, C., and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Eureka, California: Mad River Press Inc.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program. California Department of Fish and Game. October 1986.

Oberbauer, T., M. Kelley, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R.F. Holland, October 1986. March 2008.

USFWS (U.S. Fish and Wildlife Service). 1996. *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*. Sacramento, California: USFWS Sacramento Field Office. April 19, 1996.

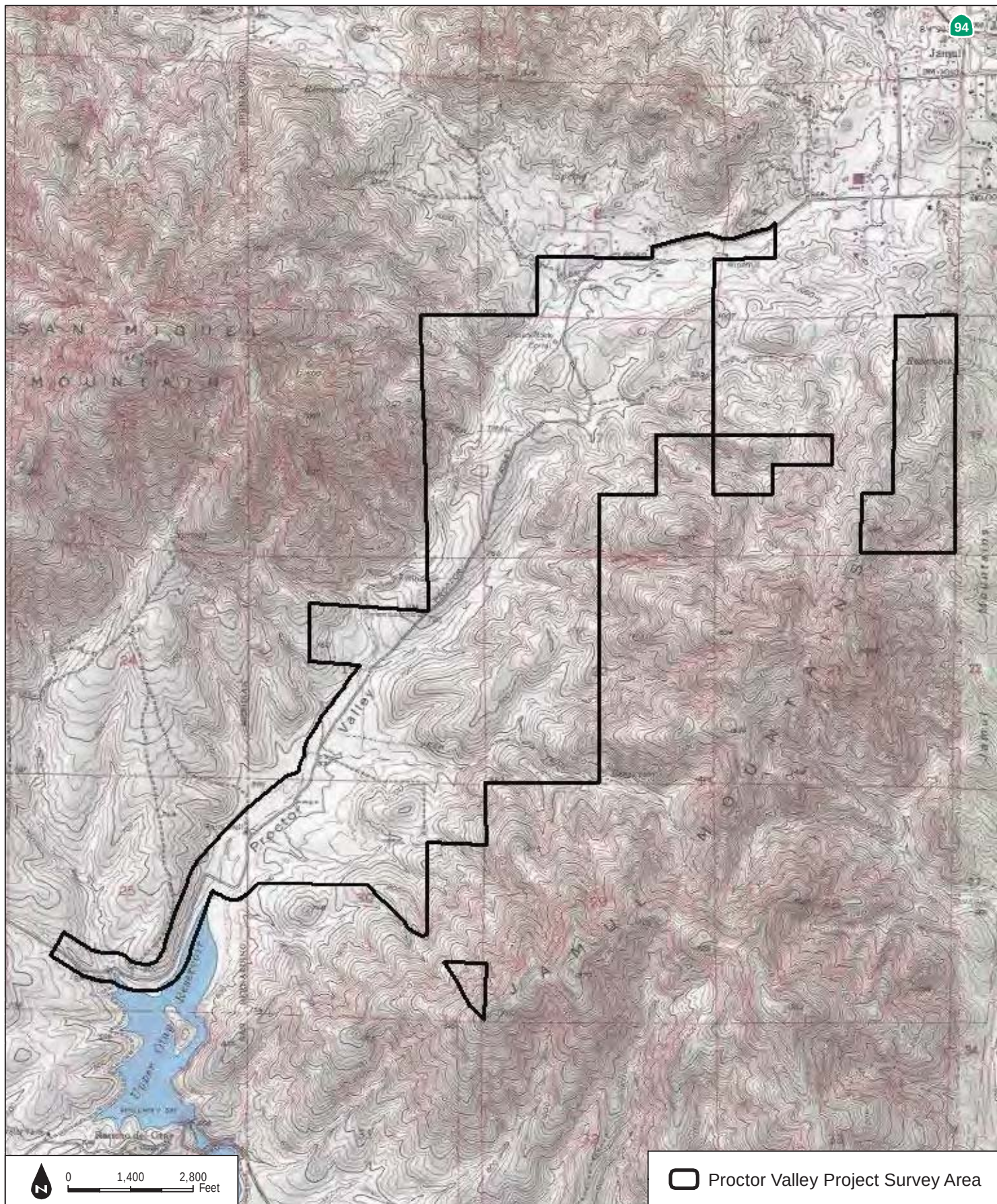
USFWS. 2015. *Survey Guidelines for the Listed Large Branchiopods*. Sacramento, California: USFWS Pacific Southwest Region. May 31, 2015.

Weather Underground, Inc. 2014–2015. Weather Station KCACHULA20. Data accessed periodically from November 2014 through June 2015. <http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=KCACHULA20&graphspan=month&month=11&day=12&year=2014>.



FIGURE 1
Regional Map

2014/15 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19), San Diego County, California



SOURCE: USGS 7.5-Minute Series Jamul Mountains Quadrangle; Hunsaker 2015

FIGURE 2
Vicinity Map

2014/15 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19), San Diego County, California

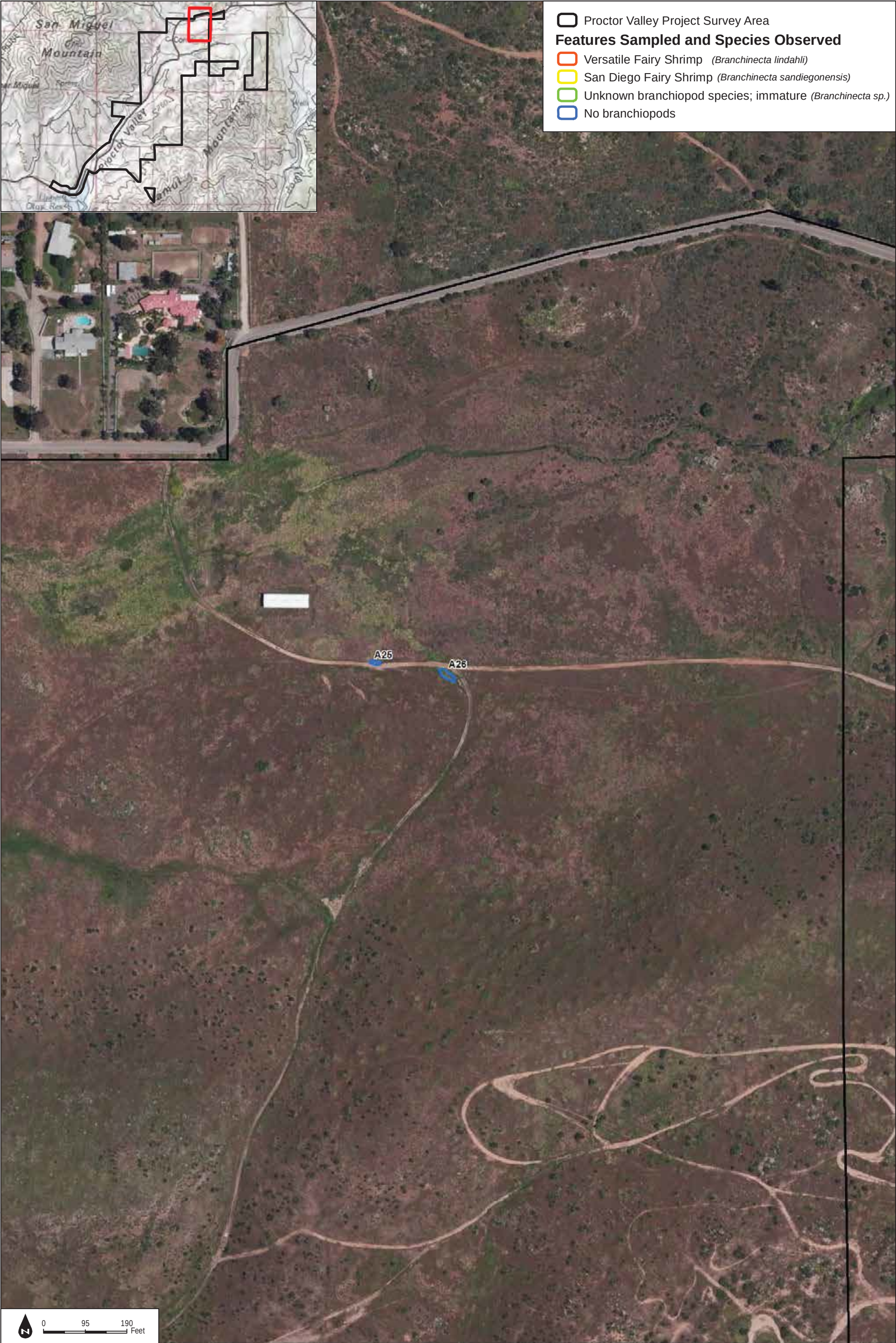


Figure 3
Feature Locations and Species Observed

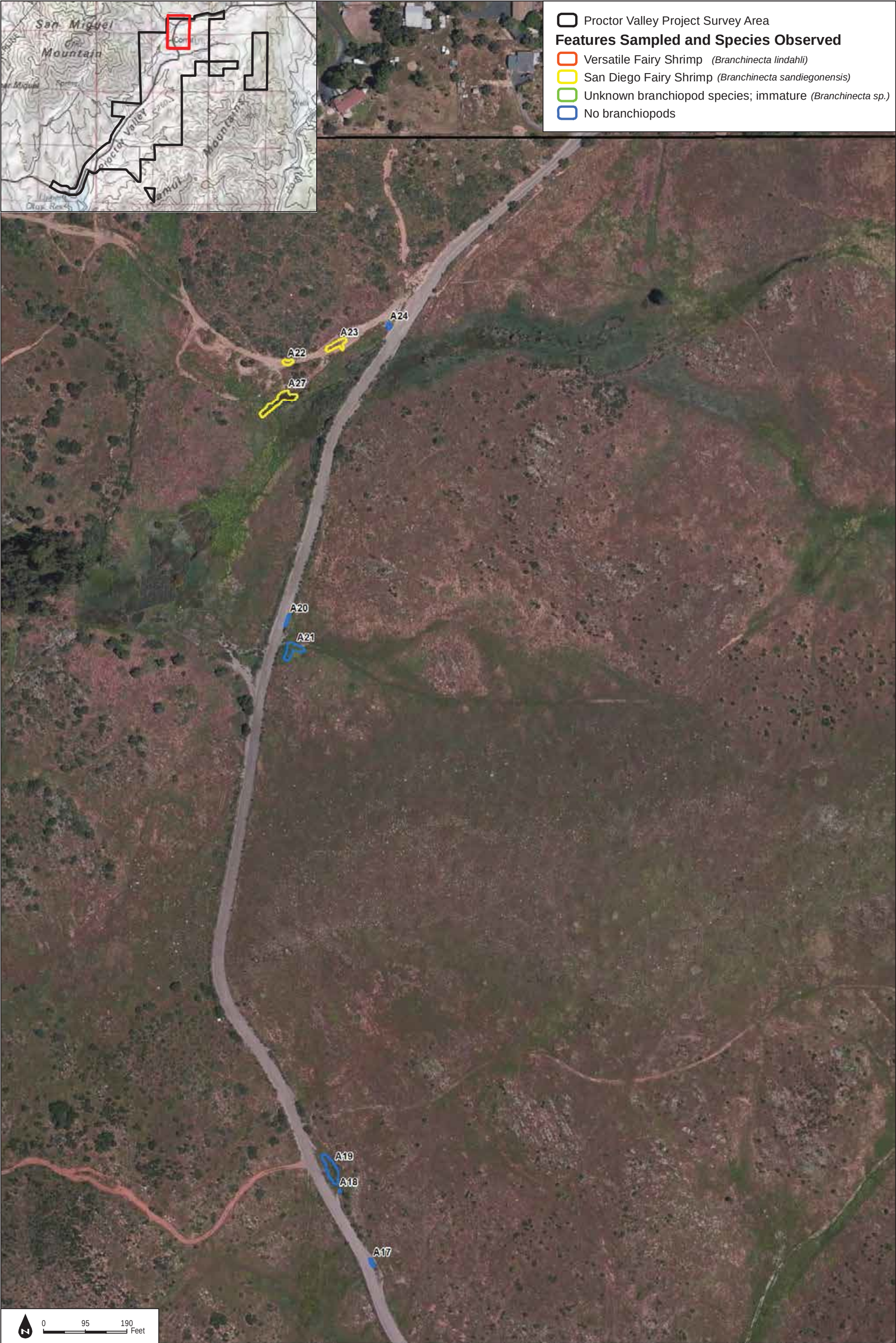
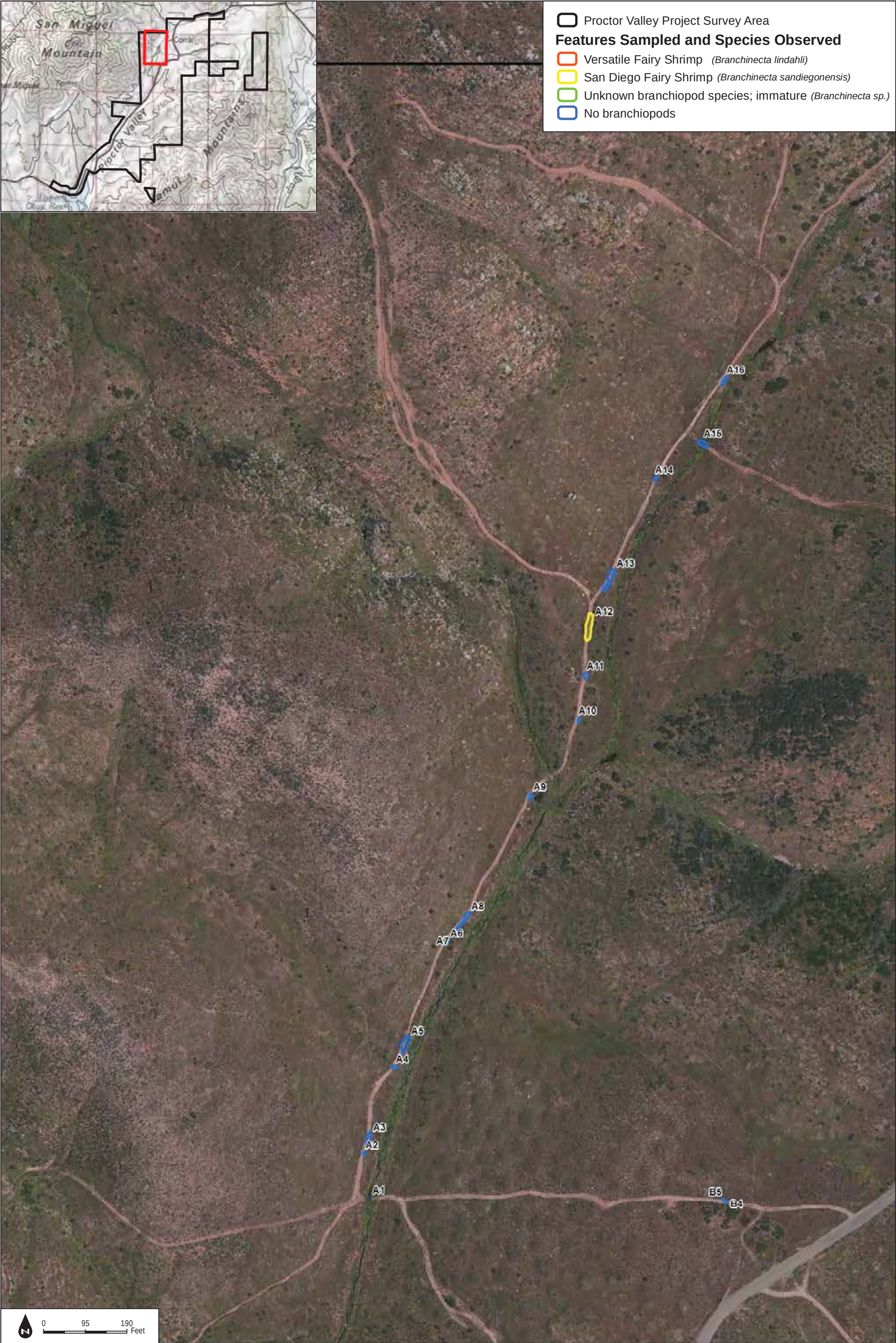


Figure 4
Feature Locations and Species Observed

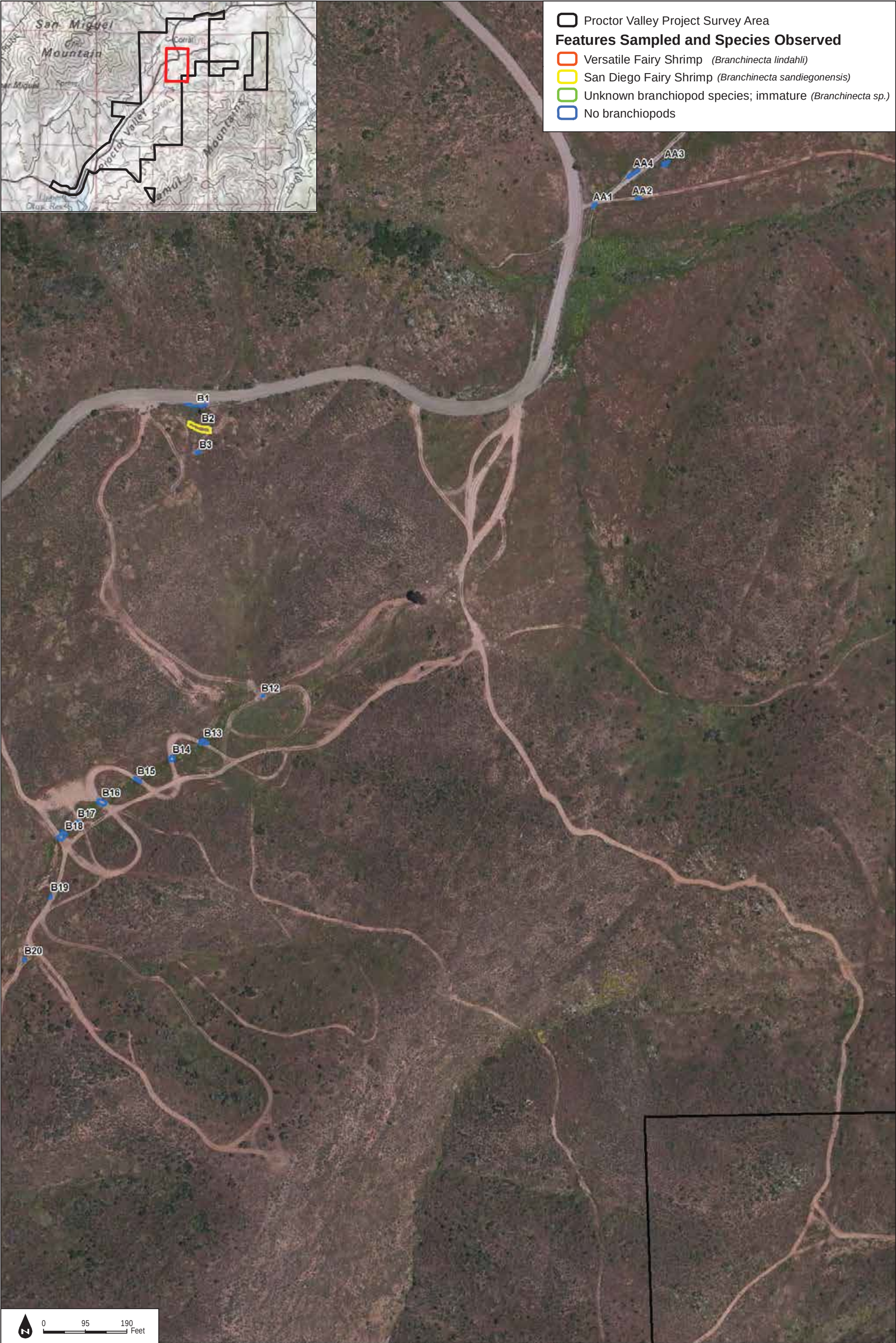


SOURCE: Bing Maps 2015; Hunsaker 2015



2014/15 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19), San Diego County, California

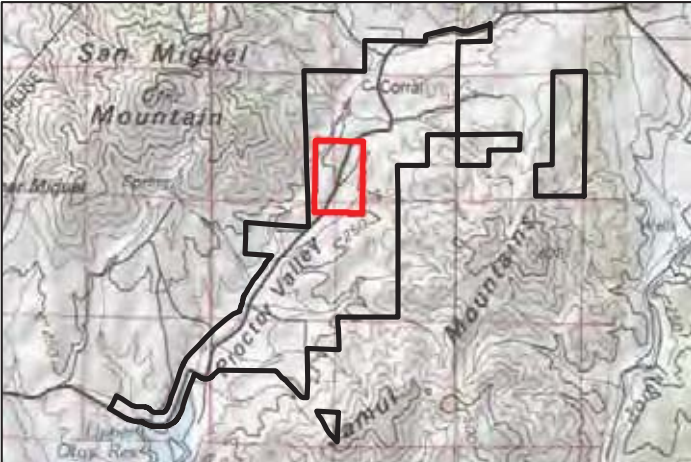
Figure 5
Feature Locations and Species Observed



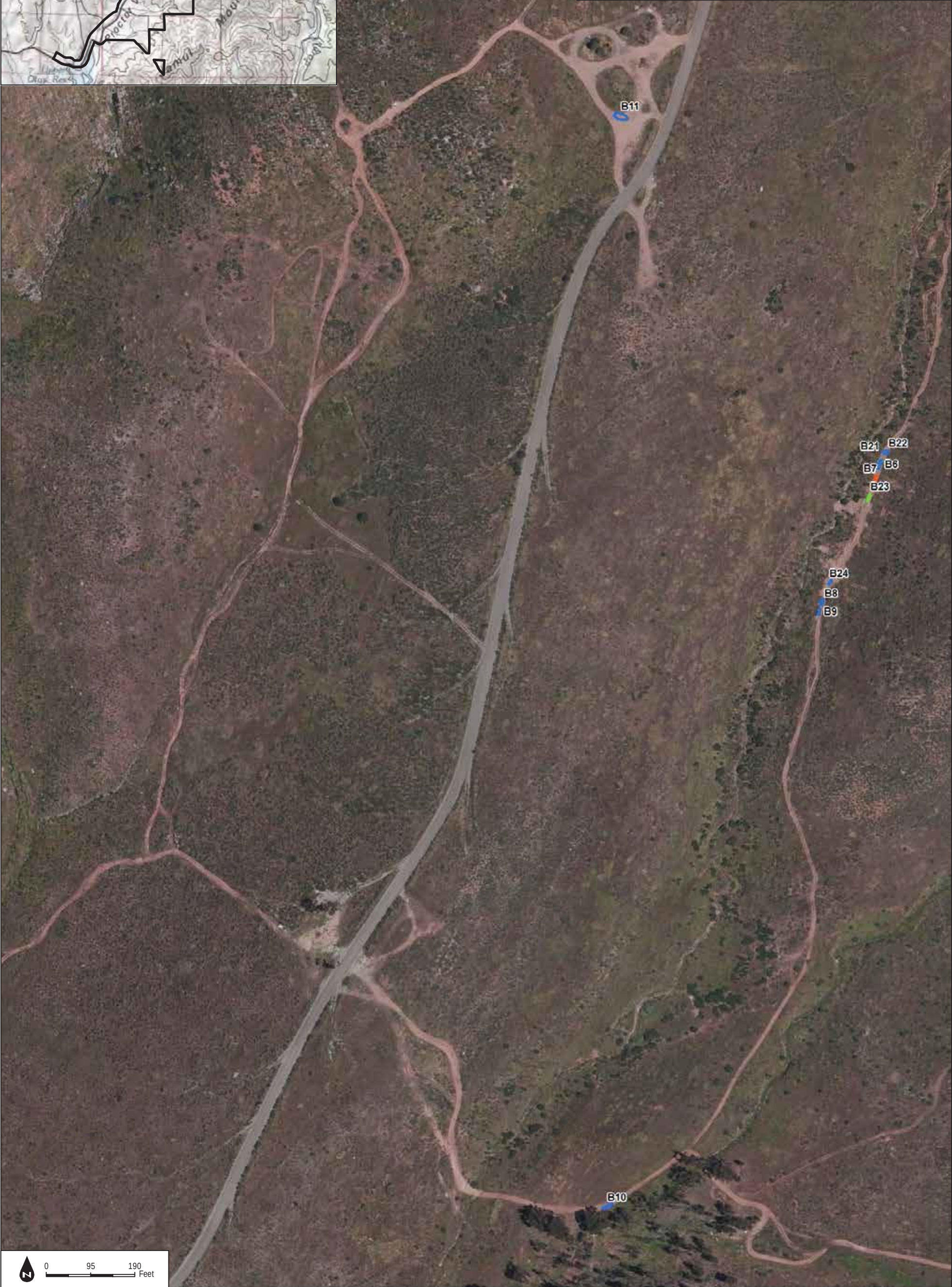
SOURCE: Bing Maps 2015; Hunsaker 2015

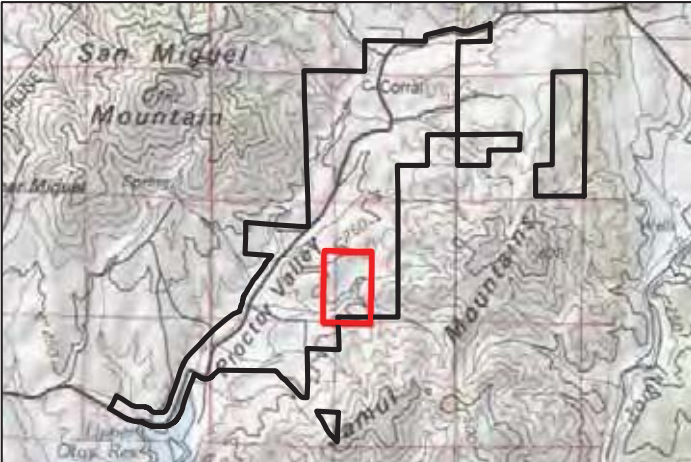
2014/15 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19), San Diego County, California

Figure 6
Feature Locations and Species Observed

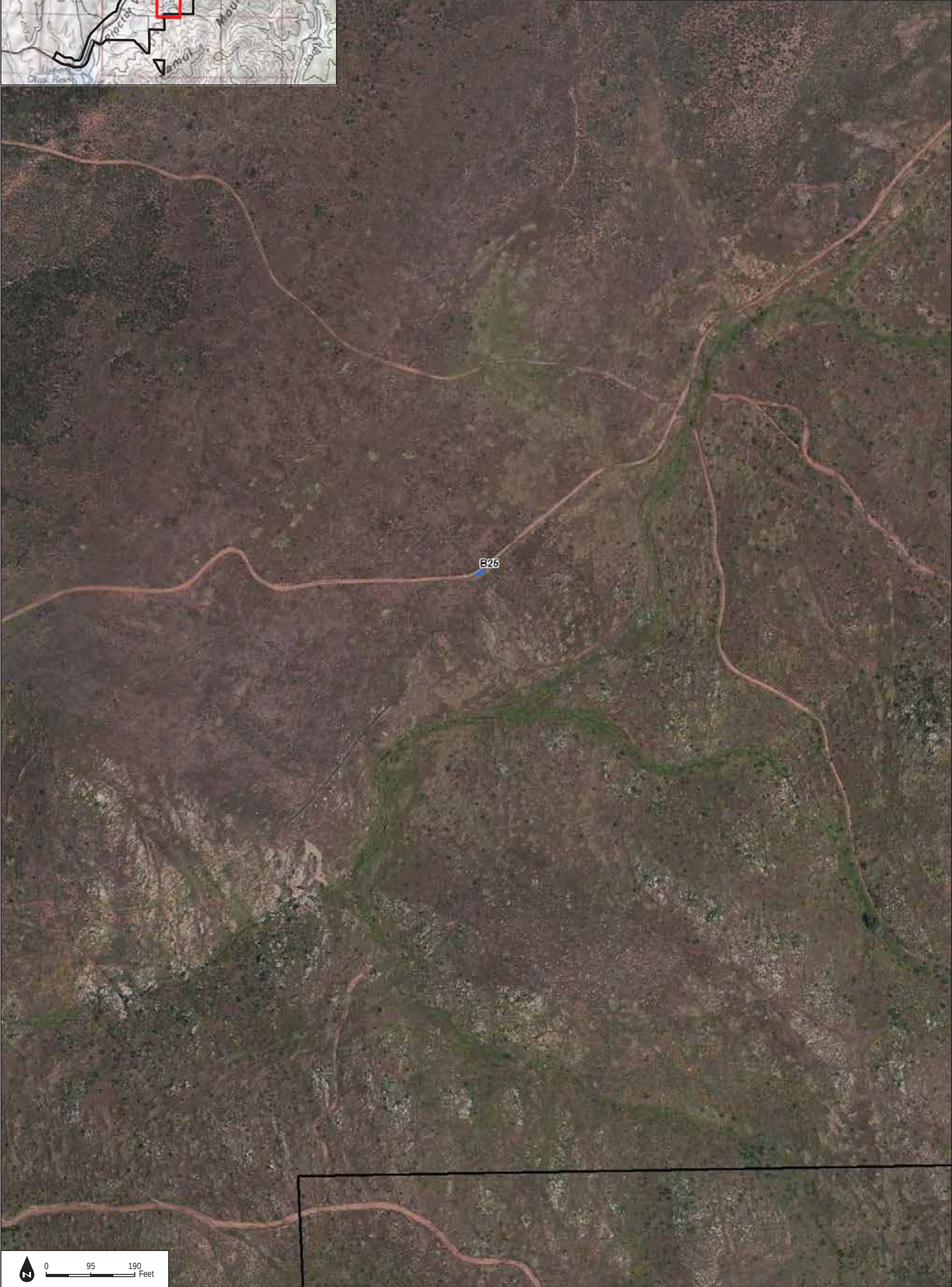


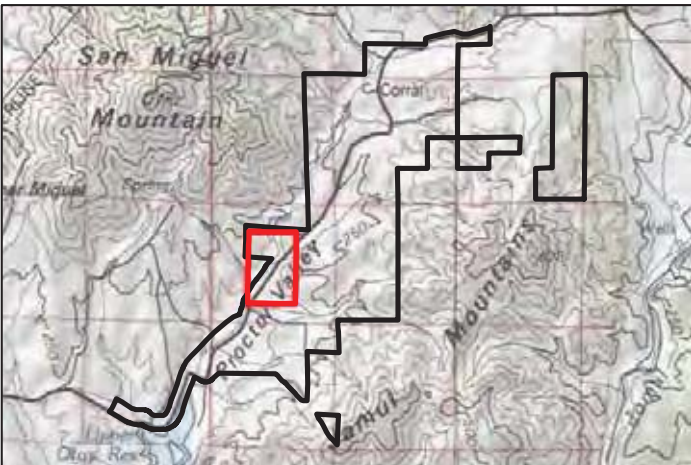
- Proctor Valley Project Survey Area
- Features Sampled and Species Observed**
- Versatile Fairy Shrimp (*Branchinecta lindahl*)
- San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)
- Unknown branchiopod species; immature (*Branchinecta* sp.)
- No branchiopods





- Proctor Valley Project Survey Area
- Features Sampled and Species Observed**
- Versatile Fairy Shrimp (*Branchinecta lindahli*)
- San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)
- Unknown branchiopod species; immature (*Branchinecta* sp.)
- No branchiopods





Proctor Valley Project Survey Area

Features Sampled and Species Observed

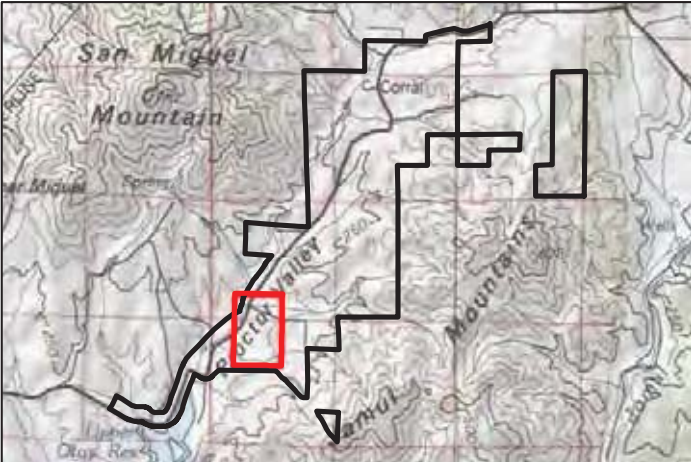
Versatile Fairy Shrimp (*Branchinecta lindahli*)

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)

Unknown branchiopod species; immature (*Branchinecta* sp.)

No branchiopods





Proctor Valley Project Survey Area

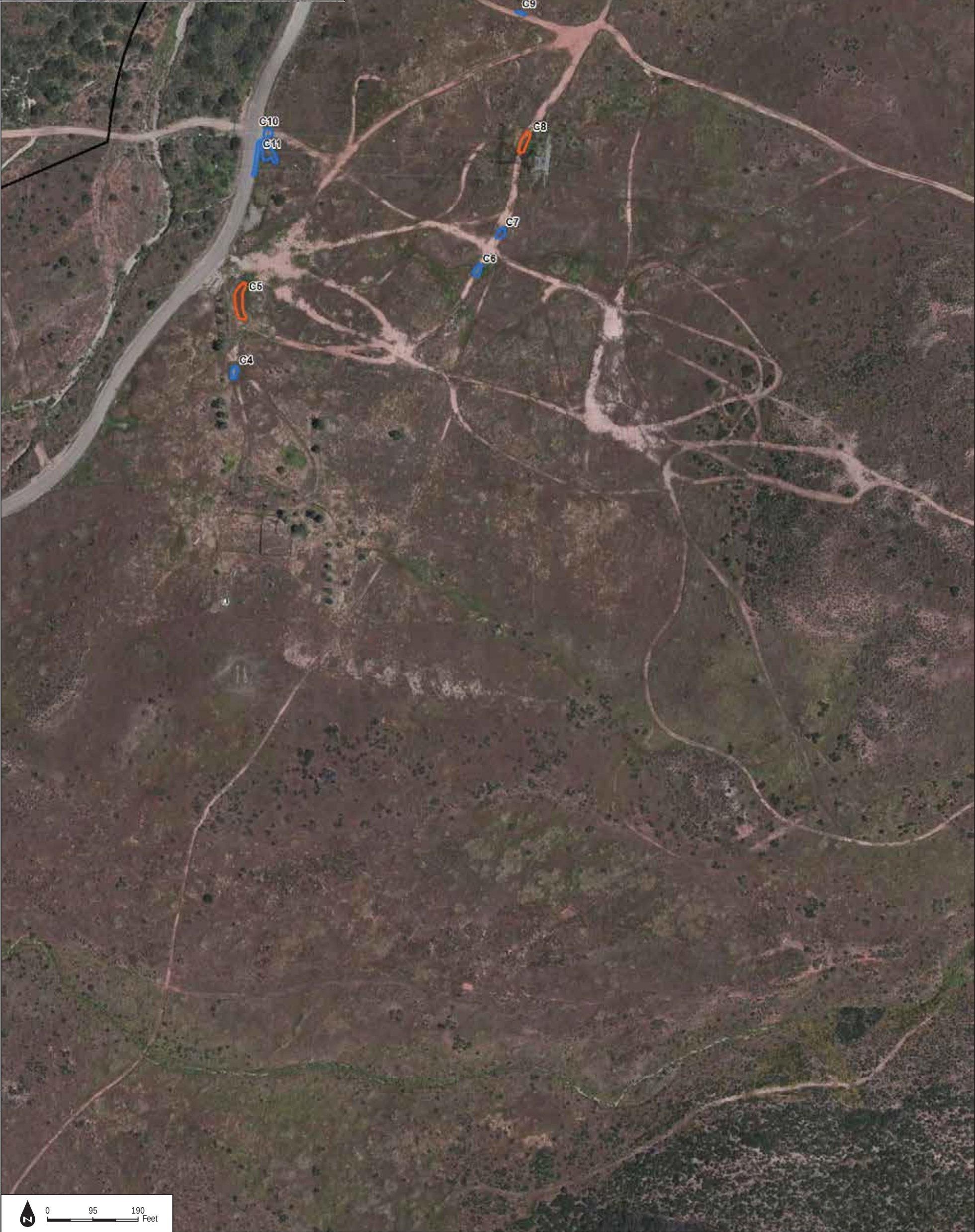
Features Sampled and Species Observed

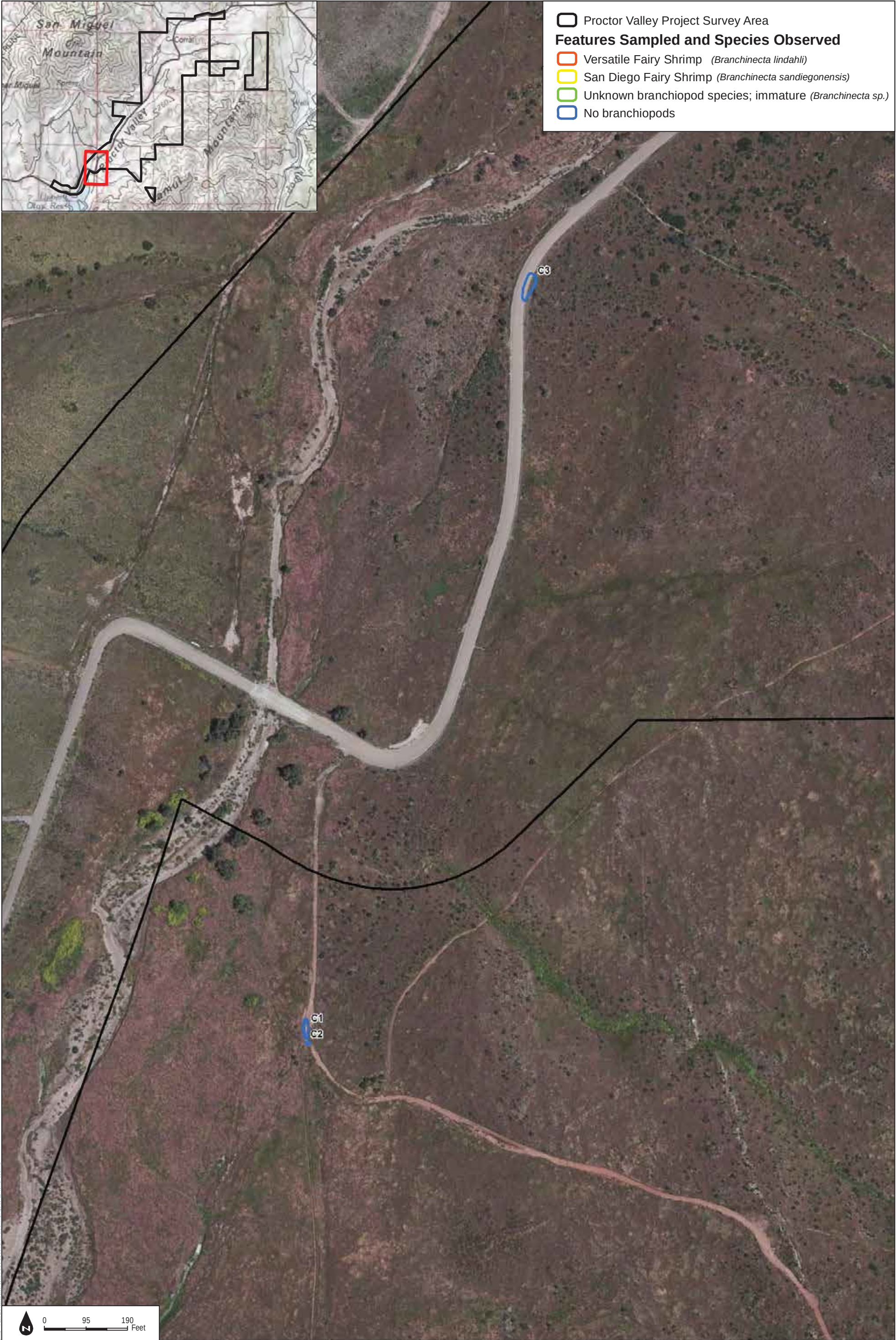
Versatile Fairy Shrimp (*Branchinecta lindahli*)

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)

Unknown branchiopod species; immature (*Branchinecta* sp.)

No branchiopods





SOURCE: Bing Maps 2015; Hunsaker 2015

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2014/15 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Proctor Valley Project (Otay Ranch Village 14, Planning Areas 16 and 19), San Diego County, California

Figure 11
Feature Locations and Species Observed

APPENDIX A

Survey Log

Pass #	1		2		3		4		5		6		7		8		9		10		11		
Survey Date	12/19/2014		1/2/2015		1/13/2015		1/16/2015		1/30/2015		2/13/2015		3/3/2015		3/16/2015		3/30/2015		5/18/2015		6/1/2015		
Feature ID	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Notes
A1	Wet	None	Wet	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A2	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A3	Wet	None	Wet	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A4	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A5	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A6	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A7	Wet	None	Wet	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A8	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A9	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A10	Wet	None	Wet	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A11	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A12	Wet	FS: B. Sandiegonensis	Wet		No survey		Dry	None	Dry	None	Dry	None	Wet		Dry		Dry		Dry		Dry		
A13	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A14	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A15	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A16	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	
A17	Wet	None	Wet	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A18	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A19	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Wet	None	Dry	None	Dry	None	Dry	None	
A20	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A21	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A22	Wet	FS: B. Sandiegonensis	Wet		No survey		Wet		Dry	None	Dry	None	Wet		Dry	None	Dry	None	Dry	None	Dry	None	2M; 1F
A23	Wet	FS: B. Sandiegonensis	Wet		No survey		Wet		Dry	None	Dry	None	Wet		Dry	None	Dry	None	Dry	None	Dry	None	3M; 2F
A24	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
A25	Wet	None	Wet	None	No survey	No survey	Wet	None	Wet	None	Dry	None	Wet	None	Wet	None	Dry	None	Wet	None	Dry	None	
A26	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	
A27	Wet	None	Wet	FS: B. Sandiegonensis			Dry	None	Dry	None	Dry	None	Wet		Dry	None	Dry	None	Dry	None	Dry	None	2M
AA1	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
AA2	Wet	None	Dry	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
AA3	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	
AA4	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B1	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B2	Wet	FS: B. Sandiegonensis	Wet		No survey		Wet		Dry	None	Dry	None	Wet		Dry	None	Dry	None	Dry	None	Dry	None	4M; 1F
B3	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	
B4	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B5	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B6	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B7	Wet	None	Wet	None	No survey	No survey	Wet	FS: B. Lindahli	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	1M
B8	Wet	None	Dry	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B9	Wet	None	Wet	None	No survey	No survey	Wet	None	No survey	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B10	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B11	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B12	No survey	No survey	No survey	No survey	Wet	None	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B13	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B14	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B15	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B16	No survey	No survey	No survey	No survey	Wet	None	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B17	No survey	No survey	No survey	No survey	Wet	None	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B18	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B19	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B20	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B21	No survey	No survey	No survey	No survey	Wet	None	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B22	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B23	No survey	No survey	No survey	No survey	Wet	None	Wet	FS: immature, did not collect	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B24	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
B25	No survey	No survey	No survey	No survey	Wet	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C1	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C2	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C3	Wet	None	Dry	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C4	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C5	Wet	FS: immature, did not collect	Wet	FS: B. Lindahli	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C6	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	Dry	None	
C7	Wet	None	Wet	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C8	Wet	FS: B. Lindahli	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	6M; 1F
C9	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C10	Wet	None	Wet	None	No survey	No survey	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Wet	None	Dry	None	
C11	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C12	Wet	FS: B. Lindahli	Wet	FS: B. Lindahli	No survey	No survey	Wet	None	Wet	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	7M
C13	Wet	FS: immature, did not collect	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C14	Wet	FS: B. Sandiegonensis			No survey		Dry	None	Dry	None	Dry	None	Wet		Dry	None	Dry	None	Dry	None	Dry	None	6M
C15	Wet	FS: immature, did not collect	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C16	Wet	FS: immature, did not collect	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C17	Wet	FS: immature, did not collect	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C18	Wet	FS: immature, did not collect	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	

Pass #	1		2		3		4		5		6		7		8		9		10		11		
Survey Date	12/19/2014		1/2/2015		1/13/2015		1/16/2015		1/30/2015		2/13/2015		3/3/2015		3/16/2015		3/30/2015		5/18/2015		6/1/2015		
Feature ID	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Wet/Dry	Fairy Shrimp (FS) Detected	Notes
C19	Wet	FS: immature, did not collect	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C20	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C21	Wet	FS: immature, did not collect	Wet	FS: <i>B. sandiegonensis</i>			Wet		Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C22	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C23	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C24	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	
C25	Wet	None	Dry	None	No survey	No survey	Dry	None	Dry	None	Dry	None	Wet	None	Dry	None	Dry	None	Dry	None	Dry	None	

APPENDIX B

Weather Data

Weather Summary October 2014 - July 2015 at weather station KCACHULA20

2014	Temperature			Wind Speed			Precipitation Rate
Oct	High	Avg	Low	High	Avg	Gust	Sum
23	90 °F	70.1 °F	57.4 °F	6 mph	1 mph	6 mph	0 in
24	93.4 °F	73.4 °F	59.7 °F	6 mph	0 mph	6 mph	0 in
25	87.1 °F	69.8 °F	61.3 °F	6 mph	0 mph	6 mph	0 in
26	75.4 °F	65.6 °F	59.7 °F	8 mph	1 mph	8 mph	0 in
27	81 °F	64.1 °F	53.8 °F	7 mph	1 mph	7 mph	0 in
28	83.7 °F	66.1 °F	55.4 °F	8 mph	1 mph	8 mph	0 in
2014	Temperature			Speed			Precip. Rate.
Nov	High	Avg	Low	High	Avg	Gust	Sum
1	55.9 °F	44.6 °F	55.6 °F	1 mph	0 mph	1 mph	0 in
2	72.5 °F	59.2 °F	53.1 °F	7 mph	0 mph	7 mph	0.04 in
3	80.1 °F	60.8 °F	49.8 °F	7 mph	0 mph	7 mph	0 in
4	81.3 °F	61.9 °F	47.8 °F	9 mph	1 mph	9 mph	0 in
5	92.7 °F	67.1 °F	50.5 °F	7 mph	1 mph	7 mph	0 in
6	95.9 °F	71.6 °F	55.6 °F	5 mph	1 mph	6 mph	0 in
7	95.9 °F	72.4 °F	60.4 °F	4 mph	0 mph	4 mph	0 in
8	94.1 °F	70.4 °F	58.5 °F	6 mph	0 mph	6 mph	0 in
9	83.7 °F	65.4 °F	54.7 °F	4 mph	0 mph	4 mph	0 in
10	76.1 °F	63.7 °F	57.6 °F	4 mph	0 mph	4 mph	0 in
11	67.3 °F	63.2 °F	61.3 °F	6 mph	1 mph	6 mph	0 in
12	74.5 °F	63.8 °F	57.6 °F	3 mph	0 mph	3 mph	0 in
13	76.1 °F	64.1 °F	57.6 °F	4 mph	0 mph	4 mph	0 in
14	75.2 °F	62.8 °F	55.8 °F	6 mph	0 mph	6 mph	0 in
15	74.1 °F	61.6 °F	53.6 °F	8 mph	1 mph	8 mph	0 in
16	78.4 °F	62.6 °F	52.7 °F	6 mph	0 mph	6 mph	0 in
17	82.8 °F	60.8 °F	48.4 °F	6 mph	1 mph	6 mph	0 in
18	83.7 °F	60.1 °F	47.8 °F	6 mph	0 mph	6 mph	0 in
19	80.4 °F	59.1 °F	47.1 °F	6 mph	0 mph	6 mph	0 in
20	78.3 °F	59.8 °F	47.1 °F	7 mph	1 mph	7 mph	0 in
21	72.1 °F	61 °F	53.4 °F	8 mph	1 mph	8 mph	0.17 in
22	78.4 °F	60.1 °F	49.8 °F	7 mph	1 mph	7 mph	0 in
23	79 °F	60.4 °F	49.6 °F	8 mph	1 mph	8 mph	0 in
24	86.4 °F	63.1 °F	50.7 °F	7 mph	1 mph	7 mph	0 in
25	88.7 °F	64.6 °F	49.8 °F	6 mph	1 mph	6 mph	0 in
26	92.1 °F	68 °F	52.2 °F	4 mph	0 mph	4 mph	0 in
27	60.8 °F	58.9 °F	57.4 °F	0 mph	0 mph	0 mph	0 in
28	88.7 °F	65.1 °F	52.9 °F	5 mph	0 mph	5 mph	0 in
29	83.3 °F	61.1 °F	49.8 °F	9 mph	1 mph	9 mph	0 in
30	76.5 °F	61.8 °F	51.4 °F	10 mph	1 mph	11 mph	0 in
2014	Temperature			Speed			Precip. Rate.
Dec	High	Avg	Low	High	Avg	Gust	Sum
1	75.7 °F	61.6 °F	52.2 °F	3 mph	0 mph	4 mph	0 in

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2	67.6 °F	62 °F	57.7 °F	10 mph	1 mph	10 mph	0.5 in
3	65.7 °F	63.2 °F	60.1 °F	5 mph	0 mph	5 mph	0.83 in
4	76.3 °F	63.5 °F	55.2 °F	4 mph	1 mph	5 mph	0.62 in
5	70 °F	60.2 °F	54 °F	6 mph	0 mph	6 mph	0 in
6	77.4 °F	62.9 °F	56.1 °F	6 mph	1 mph	6 mph	0 in
7	82.6 °F	63.1 °F	52.7 °F	6 mph	0 mph	6 mph	0 in
8	77.2 °F	62.8 °F	54.9 °F	3 mph	0 mph	3 mph	0 in
9	82.8 °F	62 °F	52.7 °F	6 mph	0 mph	6 mph	0 in
10	75.6 °F	59.5 °F	50.4 °F	5 mph	0 mph	5 mph	0 in
11	74.3 °F	62.3 °F	57.2 °F	7 mph	1 mph	7 mph	0 in
12	62.1 °F	57.2 °F	53.4 °F	10 mph	1 mph	12 mph	0.05 in
13	68.9 °F	55.6 °F	48.9 °F	6 mph	1 mph	8 mph	0.05 in
14	72.7 °F	54.4 °F	45.1 °F	5 mph	1 mph	6 mph	0 in
15	70.9 °F	55.2 °F	46.9 °F	6 mph	0 mph	6 mph	0 in
16	59.4 °F	53.8 °F	50.2 °F	3 mph	0 mph	3 mph	0.12 in
17	66 °F	56.1 °F	50.2 °F	10 mph	1 mph	10 mph	0.71 in
18	66.4 °F	55.3 °F	49.3 °F	6 mph	0 mph	6 mph	0 in
19	75.2 °F	55.9 °F	47.1 °F	6 mph	0 mph	6 mph	0 in
20	71.1 °F	56.4 °F	47.5 °F	6 mph	0 mph	6 mph	0 in
21	73 °F	59.1 °F	50.7 °F	5 mph	0 mph	5 mph	0 in
22	83.5 °F	60.6 °F	48.6 °F	6 mph	0 mph	6 mph	0 in
23	88 °F	64.6 °F	50.9 °F	6 mph	1 mph	6 mph	0 in
24	80.6 °F	61.5 °F	53.1 °F	6 mph	1 mph	6 mph	0 in
25	69.1 °F	57.2 °F	47.5 °F	8 mph	1 mph	8 mph	0 in
26	73.4 °F	53.4 °F	43.7 °F	4 mph	1 mph	6 mph	0 in
27	70.5 °F	51.9 °F	43.5 °F	6 mph	1 mph	6 mph	0 in
28	70.2 °F	49.6 °F	38.1 °F	8 mph	0 mph	8 mph	0 in
29	71.2 °F	51.4 °F	40.3 °F	7 mph	0 mph	7 mph	0 in
30	58.1 °F	50.9 °F	46.9 °F	8 mph	1 mph	8 mph	0.08 in
31	56.7 °F	45.4 °F	37.6 °F	7 mph	1 mph	7 mph	0.24 in
2015	Temperature			Speed			Precip. Rate.
Feb	High	Avg	Low	High	Avg	Gust	Sum
1	65.7 °F	46.2 °F	35.2 °F	6 mph	1 mph	6 mph	0 in
2	67.8 °F	47.6 °F	36.3 °F	7 mph	1 mph	7 mph	0 in
3	69.1 °F	50 °F	39.4 °F	5 mph	0 mph	5 mph	0 in
4	76.3 °F	53.7 °F	40.3 °F	5 mph	0 mph	5 mph	0 in
5	86.2 °F	63.6 °F	47.3 °F	5 mph	1 mph	5 mph	0 in
6	90.7 °F	66.1 °F	51.6 °F	5 mph	1 mph	5 mph	0 in
7	83.8 °F	61.1 °F	49.3 °F	5 mph	0 mph	5 mph	0 in
8	75.6 °F	60.4 °F	53.2 °F	6 mph	0 mph	6 mph	0 in
9	71.4 °F	58.7 °F	52.7 °F	6 mph	0 mph	6 mph	0 in
10	77.5 °F	59.2 °F	48 °F	6 mph	1 mph	6 mph	0 in

Weather Summary October 2014 - July 2015 at weather station KCACHULA20

11	59.4 °F	57.6 °F	54.7 °F	4 mph	0 mph	4 mph	0.08 in
12	73.8 °F	60.4 °F	56.7 °F	7 mph	1 mph	7 mph	0.08 in
13	74.5 °F	61.1 °F	53.2 °F	6 mph	1 mph	6 mph	0 in
14	77.9 °F	58.7 °F	46.2 °F	4 mph	1 mph	6 mph	0 in
15	81 °F	60.4 °F	48.7 °F	6 mph	1 mph	6 mph	0 in
16	82.2 °F	59.6 °F	48.2 °F	6 mph	1 mph	6 mph	0 in
17	81.9 °F	60.7 °F	48.9 °F	6 mph	1 mph	6 mph	0 in
22	54.9 °F	49.4 °F	53.6 °F	8 mph	3 mph	8 mph	0.08 in
23	69.3 °F	57.8 °F	51.1 °F	9 mph	2 mph	9 mph	0.17 in
24	74.3 °F	57 °F	45.5 °F	8 mph	1 mph	10 mph	0 in
25	76.5 °F	57.9 °F	45.3 °F	6 mph	1 mph	6 mph	0 in
26	72.7 °F	56.8 °F	46.6 °F	8 mph	1 mph	8 mph	0 in
27	68.7 °F	57.9 °F	48.7 °F	11 mph	3 mph	11 mph	0 in
28	66 °F	56.9 °F	52.3 °F	12 mph	2 mph	12 mph	0.33 in
2015	Temperature			Speed			Precip. Rate.
Mar	High	Avg	Low	High	Avg	Gust	Sum
1	55.6 °F	52.6 °F	50.2 °F	4 mph	1 mph	6 mph	0.75 in
2	61.3 °F	51.8 °F	47.1 °F	10 mph	1 mph	11 mph	0.45 in
3	67.3 °F	54.7 °F	46.4 °F	6 mph	1 mph	7 mph	0 in
4	72.5 °F	56.6 °F	44.4 °F	6 mph	1 mph	6 mph	0 in
5	79.9 °F	59.3 °F	42.8 °F	5 mph	1 mph	6 mph	0 in
6	82.9 °F	61.9 °F	44.1 °F	7 mph	1 mph	8 mph	0 in
7	86.7 °F	64.7 °F	49.8 °F	6 mph	1 mph	7 mph	0 in
8	78.1 °F	67.5 °F	54.9 °F	6 mph	1 mph	7 mph	0 in
9	74.1 °F	59.8 °F	47.3 °F	6 mph	1 mph	7 mph	0 in
10	82.4 °F	63.1 °F	48.4 °F	5 mph	1 mph	6 mph	0 in
11	78.4 °F	62.4 °F	56.7 °F	6 mph	1 mph	6 mph	0 in
12	76.1 °F	75.2 °F	74.3 °F	3 mph	3 mph	3 mph	0 in
13	84.2 °F	69.9 °F	57.6 °F	9 mph	1 mph	9 mph	0 in
14	91.6 °F	75.2 °F	58.1 °F	8 mph	2 mph	8 mph	0 in
15	90.5 °F	75.4 °F	61.7 °F	9 mph	1 mph	9 mph	0 in
16	66.7 °F	63.7 °F	62.6 °F	4 mph	1 mph	4 mph	0 in
17	76.3 °F	65.4 °F	62.6 °F	4 mph	1 mph	6 mph	0 in
18	73.2 °F	63.8 °F	57.9 °F	10 mph	2 mph	10 mph	0 in
19	76.3 °F	64.7 °F	58.6 °F	8 mph	1 mph	8 mph	0 in
20	79.2 °F	64.6 °F	54.5 °F	10 mph	1 mph	10 mph	0 in
21	78.3 °F	63.9 °F	55.2 °F	6 mph	1 mph	6 mph	0 in
22	75 °F	62.2 °F	53.2 °F	10 mph	1 mph	10 mph	0 in

Weather Summary October 2014 - July 2015 at weather station KCACHULA20

23	73.9 °F	61.7 °F	51.6 °F	10 mph	1 mph	10 mph	0 in
24	75.9 °F	61.5 °F	49.5 °F	9 mph	1 mph	9 mph	0 in
25	84.2 °F	65.1 °F	51.8 °F	8 mph	1 mph	8 mph	0 in
26	95.2 °F	72.3 °F	54.9 °F	7 mph	1 mph	7 mph	0 in
27	90 °F	70.8 °F	57.9 °F	8 mph	1 mph	8 mph	0 in
28	83.7 °F	67.5 °F	54.1 °F	8 mph	1 mph	8 mph	0 in
29	80.6 °F	66.5 °F	57.9 °F	8 mph	1 mph	8 mph	0 in
30	79.9 °F	64.8 °F	54.5 °F	8 mph	1 mph	8 mph	0 in
31	75.7 °F	63.7 °F	54.9 °F	8 mph	1 mph	8 mph	0 in
2015	Temperature			Speed			Precip. Rate.
Apr	High	Avg	Low	High	Avg	Gust	Sum
1	76.1 °F	64.2 °F	58.1 °F	8 mph	2 mph	8 mph	0 in
2	74.7 °F	62.7 °F	54.3 °F	8 mph	1 mph	8 mph	0 in
3	89.4 °F	68.1 °F	51.4 °F	8 mph	1 mph	8 mph	0 in
4	82.4 °F	66.2 °F	55.6 °F	8 mph	1 mph	9 mph	0 in
5	72 °F	61.2 °F	53.1 °F	11 mph	2 mph	11 mph	0 in
6	70.2 °F	59.6 °F	52.5 °F	10 mph	2 mph	10 mph	0 in
7	70.3 °F	59.8 °F	52.7 °F	12 mph	1 mph	12 mph	0 in
8	70.9 °F	59.4 °F	51.6 °F	10 mph	1 mph	10 mph	0.04 in
9	72.9 °F	59.5 °F	47.8 °F	10 mph	1 mph	10 mph	0 in
10	71.4 °F	34.9 °F	52 °F	11 mph	1 mph	11 mph	0 in
11	73.8 °F	60.3 °F	49.6 °F	8 mph	1 mph	8 mph	0 in
12	76.5 °F	62.1 °F	50.4 °F	9 mph	1 mph	9 mph	0 in
13	76.1 °F	63.8 °F	55 °F	7 mph	1 mph	7 mph	0 in
14	77.4 °F	65.2 °F	56.8 °F	6 mph	0 mph	6 mph	0 in
15	78.1 °F	63.4 °F	51.1 °F	1 mph	0 mph	1 mph	0 in
16	82.6 °F	67.8 °F	54.7 °F	5 mph	0 mph	5 mph	0 in
17	85.1 °F	66.7 °F	50.7 °F	5 mph	0 mph	5 mph	0 in
18	83.5 °F	66.1 °F	50.5 °F	8 mph	1 mph	8 mph	0 in
19	77.4 °F	63.4 °F	51.6 °F	8 mph	1 mph	8 mph	0 in
20	72.7 °F	62.7 °F	57 °F	10 mph	2 mph	10 mph	0 in
21	71.4 °F	62.2 °F	57.9 °F	10 mph	2 mph	10 mph	0 in
22	69.1 °F	60.2 °F	55.6 °F	7 mph	1 mph	7 mph	0 in
23	66.2 °F	59.8 °F	54.7 °F	6 mph	0 mph	6 mph	0 in
24	65.7 °F	58.5 °F	55.9 °F	8 mph	2 mph	10 mph	0.04 in

Weather Summary October 2014 - July 2015 at weather station KCACHULA20

25	66.6 °F	59.4 °F	55.2 °F	12 mph	3 mph	12 mph	0 in
26	73.8 °F	62.3 °F	53.8 °F	9 mph	1 mph	9 mph	0 in
27	88.7 °F	68.2 °F	51.8 °F	5 mph	0 mph	5 mph	0 in
28	91.6 °F	71.2 °F	55 °F	8 mph	1 mph	8 mph	0 in
29	92.5 °F	72.7 °F	57.4 °F	0 mph	0 mph	0 mph	0 in
30	94.3 °F	73.3 °F	59.4 °F	0 mph	0 mph	0 mph	0 in
2015	Temperature			Speed			Precip. Rate.
May	High	Avg	Low	High	Avg	Gust	Sum
1	96.6 °F	74.2 °F	59.2 °F	0 mph	0 mph	0 mph	0 in
2	76.5 °F	65.7 °F	57.4 °F	0 mph	0 mph	0 mph	0 in
3	74.1 °F	64.4 °F	58.8 °F	0 mph	0 mph	0 mph	0 in
4	71.8 °F	63 °F	58.1 °F	0 mph	0 mph	0 mph	0 in
5	71.1 °F	60.3 °F	57.9 °F	0 mph	0 mph	0 mph	0 in
6	66 °F	60.3 °F	57.4 °F	0 mph	0 mph	0 mph	0 in
7	66 °F	58.3 °F	55.2 °F	0 mph	0 mph	0 mph	0 in
8	61.2 °F	54.5 °F	50.2 °F	0 mph	0 mph	0 mph	0.25 in
9	66.4 °F	59.1 °F	54 °F	0 mph	0 mph	0 mph	0 in
10	78.4 °F	62.5 °F	52.5 °F	0 mph	0 mph	0 mph	0 in
11	81.3 °F	64.5 °F	54.7 °F	0 mph	0 mph	0 mph	0 in
12	73.6 °F	62.4 °F	55.4 °F	4 mph	0 mph	4 mph	0 in
13	70.7 °F	60.7 °F	55.6 °F	5 mph	1 mph	5 mph	0 in
14	67.5 °F	58.6 °F	53.2 °F	5 mph	0 mph	5 mph	0 in
15	69.8 °F	57.8 °F	54.1 °F	7 mph	1 mph	7 mph	0.67 in
16	71.6 °F	59.8 °F	53.6 °F	6 mph	0 mph	6 mph	0 in
17	70.7 °F	61.2 °F	54.5 °F	10 mph	2 mph	10 mph	0 in
18	71.1 °F	61.6 °F	56.7 °F	10 mph	2 mph	10 mph	0 in
19	72.9 °F	61.8 °F	57.2 °F	3 mph	0 mph	3 mph	0 in
20	71.6 °F	62 °F	56.1 °F	10 mph	2 mph	10 mph	0 in
21	68.7 °F	58.7 °F	56.8 °F	12 mph	2 mph	12 mph	0 in
22	71.1 °F	61.2 °F	56.1 °F	9 mph	1 mph	9 mph	0 in
23	71.2 °F	56.3 °F	56.3 °F	9 mph	2 mph	9 mph	0 in
24	71.6 °F	44.4 °F	57.9 °F	6 mph	1 mph	6 mph	0 in
25	67.1 °F	58 °F	59.4 °F	4 mph	0 mph	4 mph	0 in
26	69.3 °F	61.9 °F	58.6 °F	5 mph	0 mph	5 mph	0 in
27	75.2 °F	60.8 °F	57.2 °F	10 mph	1 mph	10 mph	0 in
28	78.3 °F	63.1 °F	58.3 °F	6 mph	0 mph	6 mph	0 in
29	78.6 °F	47.9 °F	57.6 °F	8 mph	1 mph	8 mph	0 in
30	82.4 °F	35.9 °F	58.5 °F	7 mph	0 mph	7 mph	0 in
31	79.3 °F	60.9 °F	59.7 °F	9 mph	1 mph	9 mph	0 in

Weather Summary October 2014 - July 2015 at weather station KCACHULA20

2015	Temperature			Speed			Precip. Rate.
Jun	High	Avg	Low	High	Avg	Gust	Sum
1	78.8 °F	66.7 °F	59.4 °F	0 mph	0 mph	0 mph	0 in
2	78.4 °F	62.4 °F	55.2 °F	3 mph	0 mph	3 mph	0 in
3	75.2 °F	64.7 °F	58.8 °F	3 mph	0 mph	3 mph	0 in
4	69.8 °F	28.9 °F	58.5 °F	6 mph	0 mph	6 mph	0 in
5	73.8 °F	6.4 °F	57.9 °F	4 mph	0 mph	4 mph	0 in
6	78.6 °F	25.6 °F	59.7 °F	9 mph	0 mph	9 mph	0 in
7	81 °F	51 °F	59.4 °F	8 mph	0 mph	8 mph	0 in
8	87.1 °F	3 °F	60.1 °F	7 mph	1 mph	7 mph	0 in
9	72 °F	13.2 °F	65.7 °F	4 mph	0 mph	4 mph	0 in
10	74.8 °F	39.6 °F	63.3 °F	8 mph	2 mph	8 mph	0 in
11	77.9 °F	66.5 °F	62.6 °F	7 mph	1 mph	7 mph	0 in
12	72.7 °F	63.1 °F	61.2 °F	6 mph	1 mph	6 mph	0 in
13	72.5 °F	55.2 °F	59.4 °F	4 mph	0 mph	4 mph	0 in
14	79.7 °F	41.4 °F	62.8 °F	4 mph	0 mph	4 mph	0 in
15	82.2 °F	63.7 °F	63.1 °F	4 mph	0 mph	4 mph	0 in
16	80.8 °F	68.5 °F	61 °F	3 mph	0 mph	3 mph	0 in
17	82.9 °F	40.8 °F	60.4 °F	3 mph	0 mph	3 mph	0 in
18	85.1 °F	56.8 °F	58.6 °F	4 mph	0 mph	4 mph	0 in
19	83.1 °F	24.3 °F	58.5 °F	2 mph	0 mph	2 mph	0 in
20	84.4 °F	24.1 °F	64.9 °F	3 mph	0 mph	3 mph	0 in
21	83.3 °F	59 °F	61.3 °F	7 mph	1 mph	7 mph	0 in
22	88.7 °F	71.8 °F	60.8 °F	6 mph	1 mph	6 mph	0 in
23	89.1 °F	72.4 °F	62.2 °F	6 mph	1 mph	6 mph	0 in
24	86.7 °F	71 °F	61.9 °F	10 mph	1 mph	10 mph	0 in
25	85.3 °F	71.2 °F	63.7 °F	8 mph	1 mph	8 mph	0 in
26	86.4 °F	71.6 °F	62.6 °F	10 mph	1 mph	10 mph	0 in
27	81.1 °F	69.6 °F	62.6 °F	6 mph	1 mph	6 mph	0 in
28	85.8 °F	72.4 °F	66.7 °F	6 mph	1 mph	6 mph	0 in
29	82.8 °F	70.9 °F	65.7 °F	6 mph	1 mph	6 mph	0 in
30	86.9 °F	67.5 °F	63.1 °F	6 mph	1 mph	6 mph	0.08 in
2015	Temperature			Speed			Precip. Rate.
Jul	High	Avg	Low	High	Avg	Gust	Sum
1	85.8 °F	69.7 °F	67.1 °F	6 mph	1 mph	6 mph	0.04 in
2	147.9 °F	27.8 °F	32 °F	11 mph	1 mph	11 mph	0 in
3	-200 °F	0 °F	200 °F	10 mph	1 mph	10 mph	0 in
4	-200 °F	0 °F	200 °F	8 mph	1 mph	8 mph	0 in

APPENDIX C

Survey Data Forms and Photographs

Vernal Pool Wet Season
Record: 51

This form is being submitted to serve as part of the 90-day report:	Yes
Required color slides and/or photographs for the project site are included:	Yes
Survey Date	2014-12-19
Survey Time	08:39:00
County	San Diego
Quad	Jamul
Collector(s)	Danielle Mullen, Other
Other Collector(s)	Kyle Matthews
Permit Number	TE31221B0 DAM, other
Other Permit Number(s)	RKM
Site/Project Name	8207 PV

Pool Data

Pool ID	A1
Water Temperature (°C)	10
Air Temperature (°C)	16
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	10
Estimated maximum	15

Surface Area (m)

length	3
width	3
length	5
width	4
Sampling	3 x 3
Estimated maximum	5 x 4

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Description	
Photo	

Pool Data

Pool ID	A2
Water Temperature (°C)	11
Air Temperature (°C)	16
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	6
Estimated maximum	10

Surface Area (m)	
length	2.6
width	1.5
length	4
width	2
Sampling	2.6 x 1.5
Estimated maximum	4 x 2

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos	
Photo	

Pool Data	
Pool ID	A3
Water Temperature (°C)	10
Air Temperature (°C)	16
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	10.5
Estimated maximum	14

Surface Area (m)	
length	11
width	2
length	13
width	3
Sampling	11 x 2
Estimated maximum	13 x 3

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos	
Photo	

Pool Data

Pool ID	A4
Water Temperature (°C)	11
Air Temperature (°C)	16
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	10
Estimated maximum	14

Surface Area (m)

length	3.3
width	2.5
length	4
width	4
Sampling	3.3 x 2.5
Estimated maximum	4 x 4

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A5
Water Temperature (°C)	11
Air Temperature (°C)	16
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	15
Estimated maximum	18

Surface Area (m)

length	13
width	2.5
length	15
width	3
Sampling	13 x 2.5
Estimated maximum	15 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Vernal Pool Wet Season
Record: 63

This form is being submitted to serve as part of the 90-day report:	Yes
Required color slides and/or photographs for the project site are included:	Yes
Survey Date	2014-12-19
Survey Time	09:27:00
County	San Diego
Quad	Jamul Mountains
Collector(s)	Danielle Mullen, Other
Other Collector(s)	RKM
Permit Number	TE31221B0 DAM, other
Other Permit Number(s)	RKM
Site/Project Name	8207 PV

Pool Data

Pool ID	A6
Water Temperature (°C)	9.5
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	8.5
Estimated maximum	12

Surface Area (m)

length	5
width	2
length	6
width	2.5
Sampling	5 x 2
Estimated maximum	6 x 2.5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A7
Water Temperature (°C)	12
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	8
Estimated maximum	12

Surface Area (m)	
length	3
width	1
length	4
width	1.5
Sampling	3 x 1
Estimated maximum	4 x 1.5

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos	
Photo	

Pool Data	
Pool ID	A8
Water Temperature (°C)	12
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	7
Estimated maximum	10

Surface Area (m)

length	16.6
width	2.5
length	18
width	3
Sampling	16.6 x 2.5
Estimated maximum	18 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A9
Water Temperature (°C)	12.5
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	6

Surface Area (m)

length	5
width	1
length	6
width	1.5
Sampling	5 x 1
Estimated maximum	6 x 1.5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A10
Water Temperature (°C)	14
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	6

Surface Area (m)

length	3.3
width	0.6
length	4
width	1
Sampling	3.3 x 0.6
Estimated maximum	4 x 1

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A11
Water Temperature (°C)	15.5
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	6

Surface Area (m)

length	4.3
width	3
length	5
width	3.2
Sampling	4.3 x 3
Estimated maximum	5 x 3.2

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo	
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Pool Data

Pool ID	A12
Water Temperature (°C)	12
Air Temperature (°C)	17
Anostracans	Present
No. of Individuals	100s
Anostracans Summary	Branchinecta sandiegoensis
Reproductive Status	Male, Female
Notostracans	None
No. of Individuals	0

Pool Depth (cm)

At time of sampling	30
Estimated maximum	34

Surface Area (m)

length	20
width	3
length	21
width	3
Sampling	20 x 3
Estimated maximum	21 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A13
Water Temperature (°C)	15
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	8.5
Estimated maximum	11

Surface Area (m)

length	17.3
width	3
length	19
width	3
Sampling	17.3 x 3
Estimated maximum	19 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A14
Water Temperature (°C)	15
Air Temperature (°C)	17
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	5
Estimated maximum	7

Surface Area (m)

length	3.6
width	1
length	4.5
width	1.3
Sampling	3.6 x 1
Estimated maximum	4.5 x 1.3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A15
Water Temperature (°C)	13
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	11
Estimated maximum	12

Surface Area (m)

length	7.5
width	2.6
length	9
width	3
Sampling	7.5 x 2.6
Estimated maximum	9 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo	
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Pool Data

Pool ID	A16
Water Temperature (°C)	14
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	8

Surface Area (m)

length	6
width	0.5
length	8
width	0.75
Sampling	6 x 0.5
Estimated maximum	8 x 0.75

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo


Pool Data

Pool ID	A17
Water Temperature (°C)	19.5
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	5
Estimated maximum	7

Surface Area (m)

length	6
width	0.75
length	7
width	1
Sampling	6 x 0.75
Estimated maximum	7 x 1

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	moderate
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A18
Water Temperature (°C)	19.5
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	3
Estimated maximum	5

Surface Area (m)

length	2
width	1
length	2.5
width	1.25
Sampling	2 x 1
Estimated maximum	2.5 x 1.25

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A19
Water Temperature (°C)	19
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	34
Estimated maximum	45

Surface Area (m)

length	25
width	6
length	27
width	8
Sampling	25 x 6
Estimated maximum	27 x 8

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo	
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Pool Data

Pool ID	A20
Water Temperature (°C)	20
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	5

Surface Area (m)

length	8.5
width	1
length	10
width	1.5
Sampling	8.5 x 1
Estimated maximum	10 x 1.5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A21
Water Temperature (°C)	18
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	8
Estimated maximum	9

Surface Area (m)

length	21
width	4.5
length	23
width	5
Sampling	21 x 4.5
Estimated maximum	23 x 5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A22
Water Temperature (°C)	18
Air Temperature (°C)	22
Anostracans	Present
No. of Individuals	100s
Anostracans Summary	<i>Branchinecta sandiegoensis</i>
Reproductive Status	Male, Female
Notostracans	0
No. of Individuals	0

Pool Depth (cm)

At time of sampling	12.5
Estimated maximum	13

Surface Area (m)

length	8.5
width	3
length	9
width	3
Sampling	8.5 x 3
Estimated maximum	9 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Description	
Photo	
	

Pool Data

Pool ID	A23
Water Temperature (°C)	18
Air Temperature (°C)	22
Anostracans	Present
No. of Individuals	100s
Reproductive Status	Male, Female
Anostracans Summary	Branchinecta sandiegoensis
Notostracans	0
No. of Individuals	0

Pool Depth (cm)

At time of sampling	13
Estimated maximum	15

Surface Area (m)

length	17
width	3
length	18
width	3.5
Sampling	17 x 3
Estimated maximum	18 x 3.5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A24
Water Temperature (°C)	19
Air Temperature (°C)	23
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	6
Estimated maximum	8

Surface Area (m)

length	3.3
width	2.5
length	3.75
width	3
Sampling	3.3 x 2.5
Estimated maximum	3.75 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	moderate
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A25
Water Temperature (°C)	20
Air Temperature (°C)	20
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	14
Estimated maximum	15

Surface Area (m)

length	7.5
width	2.5
length	8
width	3
Sampling	7.5 x 2.5
Estimated maximum	8 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks, garbage
Disturbance level	light
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	A26
Water Temperature (°C)	17.5
Air Temperature (°C)	20
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	6.5
Estimated maximum	8

Surface Area (m)	
length	15
width	3
length	16
width	4
Sampling	15 x 3
Estimated maximum	16 x 4

Habitat Condition	
Disturbed	0
Land use of habitat	<i>ephemeral basin</i>

Pool Photos	
Photo	

Vernal Pool Wet Season
Record: 183

This form is being submitted to serve as part of the 90-day report:	Yes
Required color slides and/or photographs for the project site are included:	Yes
Survey Date	2014-12-19
Survey Time	08:44:00
County	San Diego
Quad	Jamul
Collector(s)	Paul Lemons
Permit Number	TE051248 PML
Site/Project Name	8207 PV

Pool Data

Pool ID	B1
Water Temperature (°C)	9
Air Temperature (°C)	13
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	10
Estimated maximum	15

Surface Area (m)

length	1
width	15
length	1.5
width	25
Sampling	1 x 15
Estimated maximum	1.5 x 25

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo



Pool Data

Pool ID	B2
Water Temperature (°C)	11
Air Temperature (°C)	13
Anostracans	Present
No. of Individuals	100s; Males, Females
Anostracans Summary	<i>Branchinecta sandiegoensis</i>
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	20
Estimated maximum	24

Surface Area (m)

length	3
width	21
length	3.5
width	27
Sampling	3 x 21
Estimated maximum	3.5 x 27

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo



Pool Data

Pool ID	B3
Water Temperature (°C)	9
Air Temperature (°C)	14
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	7

Surface Area (m)	
length	2
width	0.5
length	2
width	2
Sampling	2 x 0.5
Estimated maximum	2 x 2

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos	
Photo	

Pool Data	
Pool ID	B4
Water Temperature (°C)	10
Air Temperature (°C)	15
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	4
Estimated maximum	5

Surface Area (m)	
length	1.5
width	0.5
length	2
width	1
Sampling	1.5 x 0.5
Estimated maximum	2 x 1

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos	
Photo	

Pool Data

Pool ID	B5
Water Temperature (°C)	12
Air Temperature (°C)	16
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	10
Estimated maximum	12

Surface Area (m)

length	1
width	1.5
length	1.5
width	2
Sampling	1 x 1.5
Estimated maximum	1.5 x 2

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo



Pool Data

Pool ID	B6
Water Temperature (°C)	12
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	9
Estimated maximum	12

Surface Area (m)

length	1
width	7
length	1.5
width	12
Sampling	1 x 7
Estimated maximum	1.5 x 12

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo



Pool Data

Pool ID	B7
Water Temperature (°C)	11
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	15
Estimated maximum	18

Surface Area (m)

length	7
width	1.5
length	12
width	3
Sampling	7 x 1.5
Estimated maximum	12 x 3

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo	
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Pool Data

Pool ID	B8
Water Temperature (°C)	15
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	4
Estimated maximum	5

Surface Area (m)	
length	5
width	1
length	7
width	1.5
Sampling	5 x 1
Estimated maximum	7 x 1.5

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos	
Photo	

Pool Data

Pool ID	B9
Water Temperature (°C)	14
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	7
Estimated maximum	9

Surface Area (m)

length	5
width	0.5
length	12
width	1
Sampling	5 x 0.5
Estimated maximum	12 x 1

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Grazed	0
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo



Pool Data

Pool ID	B10
Water Temperature (°C)	12
Air Temperature (°C)	18
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	5
Estimated maximum	7

Surface Area (m)

length	8
width	1
length	15
width	4
Sampling	8 x 1
Estimated maximum	15 x 4

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos

Photo	
	

Pool Data

Pool ID	AA1
Water Temperature (°C)	17
Air Temperature (°C)	20
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	7
Estimated maximum	14

Surface Area (m)	
length	1
width	4
length	2
width	10
Sampling	1 x 4
Estimated maximum	2 x 10

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Photos	
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Pool Data	
Pool ID	AA2
Water Temperature (°C)	16
Air Temperature (°C)	20
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	10
Estimated maximum	15

Surface Area (m)	
length	3
width	0.5
length	6
width	1.5
Sampling	3 x 0.5
Estimated maximum	6 x 1.5

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Data	
Pool ID	AA3
Water Temperature (°C)	15
Air Temperature (°C)	20
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	8
Estimated maximum	22

Surface Area (m)	
length	6.5
width	10
length	1.5
width	4
Sampling	6.5 x 10
Estimated maximum	1.5 x 4

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Pool Data	
Pool ID	AA4
Water Temperature (°C)	16
Air Temperature (°C)	20
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	15
Estimated maximum	16

Surface Area (m)	
length	11.5
width	1
length	15
width	2
Sampling	11.5 x 1
Estimated maximum	15 x 2

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	other
Other land use	Undeveloped open space with dirt roads

Vernal Pool Wet Season
Record: 168

This form is being submitted to serve as part of the 90-day report:	Yes
Required color slides and/or photographs for the project site are included:	Yes
Survey Date	2014-12-19
Survey Time	08:30:00
County	San Diego
Quad	Jamul
Collector(s)	Thomas Liddicoat
Other Collector(s)	
Permit Number	TE139634 TSL
Site/Project Name	8207

Pool Data

Pool ID	C1
Water Temperature (°C)	13
Air Temperature (°C)	14
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	5
Estimated maximum	9

Surface Area (m)

length	5
width	2
length	9.5
width	2.5
Sampling	5 x 2
Estimated maximum	9.5 x 2.5

Habitat Condition

Disturbed	1
Disturbance level	moderate
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	C2
Water Temperature (°C)	13
Air Temperature (°C)	14
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	4
Estimated maximum	7

Surface Area (m)

length	1.25
width	1
length	5
width	2
Sampling	1.25 x 1
Estimated maximum	5 x 2

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	heavy
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	C3
Water Temperature (°C)	10
Air Temperature (°C)	14
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	9
Estimated maximum	12

Surface Area (m)

length	18.5
width	3.25
length	23
width	4.25
Sampling	18.5 x 3.25
Estimated maximum	23 x 4.25

Habitat Condition

Disturbed	1
Disturbance level	heavy
Land use of habitat	road rut

Pool Photos

Photo


Pool Data

Pool ID	C4
Water Temperature (°C)	16
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	10
Estimated maximum	14

Surface Area (m)

length	4
width	2
length	5
width	2.2
Sampling	4 x 2
Estimated maximum	5 x 2.2

Habitat Condition

Land use of habitat	<i>ephemeral basin</i>
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Pool Photos

Photo	
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Pool Data

Pool ID	C5
Water Temperature (°C)	14
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s
Anostracans Summary	10s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	14
Estimated maximum	20

Surface Area (m)

length	26
width	6
length	30
width	9
Sampling	26 x 6
Estimated maximum	30 x 9

Habitat Condition

Disturbed	1
Disturbance type	tire tracks, other
Other disturbance	Wood, metal fencing
Disturbance level	heavy
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	C6
Water Temperature (°C)	14
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	14
Estimated maximum	16

Surface Area (m)

length	5.25
width	1.25
length	6
width	2
Sampling	5.25 x 1.25
Estimated maximum	6 x 2

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	road rut

Pool Photos

Photo	
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Pool Data

Pool ID	C7
Water Temperature (°C)	14
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	16
Estimated maximum	20

Surface Area (m)	
length	5.25
width	3
length	6
width	6
Sampling	5.25 x 3
Estimated maximum	6 x 6

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	road rut

Pool Photos	
Photo	

Pool Data	
Pool ID	C8
Water Temperature (°C)	11
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	100s; Males, Females
Anostracans Summary	100s; <i>Branchinecta lindahli</i>
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	12
Estimated maximum	15

Surface Area (m)	
length	11.5
width	2.5
length	13
width	3
Sampling	11.5 x 2.5
Estimated maximum	13 x 3

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	road rut

Pool Photos	
Photo	

Pool Data

Pool ID	C9
Water Temperature (°C)	17
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	5
Estimated maximum	7

Surface Area (m)

length	5
width	0.5
length	6
width	0.75
Sampling	5 x 0.5
Estimated maximum	6 x 0.75

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	road rut

Pool Photos

Photo	
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Pool Data	
Pool ID	C10
Water Temperature (°C)	15.5
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	15
Estimated maximum	18

Surface Area (m)	
length	20
width	8
length	22
width	10
Sampling	20 x 8
Estimated maximum	22 x 10

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Disturbance level	moderate
Land use of habitat	ephemeral basin

Pool Photos	
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Photo



Pool Data

Pool ID	C11
Water Temperature (°C)	21
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	6
Estimated maximum	8

Surface Area (m)

length	18
width	1.25
length	21
width	2
Sampling	18 x 1.25
Estimated maximum	21 x 2

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	heavy
Land use of habitat	road rut

Pool Photos

Photo



Pool Data

Pool ID	C12
Water Temperature (°C)	16
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s; Males
Anostracans Summary	10s; <i>Branchinecta lindahli</i>
Notostracans	0
No. of Individuals	0
Notostracans Summary	None
Species Observations	Ostracods

Pool Depth (cm)

At time of sampling	24
Estimated maximum	35

Surface Area (m)

length	15
width	4
length	16.5
width	11
Sampling	15 x 4
Estimated maximum	16.5 x 11

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	moderate
Land use of habitat	ephemeral basin

Pool Photos

Photo	
	

Pool Data

Pool ID	C13
Water Temperature (°C)	19
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s
Anostracans Summary	10s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	10
Estimated maximum	16

Surface Area (m)

length	7
width	2.25
length	9
width	3.5
Sampling	7 x 2.25
Estimated maximum	9 x 3.5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Disturbance level	moderate
Land use of habitat	ephemeral basin

Pool Photos

Photo



Pool Data

Pool ID	C14
Water Temperature (°C)	19
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s; Males
Anostracans Summary	10s; <i>Branchinecta sandiegoensis</i>
Notostracans	0
No. of Individuals	0
Notostracans Summary	None
Species Observations	Frogs

Pool Depth (cm)

At time of sampling	15
Estimated maximum	17

Surface Area (m)

length	4
width	1.25
length	4.5
width	4.5
Sampling	4 x 1.25
Estimated maximum	4.5 x 4.5

Habitat Condition

Land use of habitat	ephemeral basin
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Pool Photos

Photo	
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Pool Data	
Pool ID	C15
Water Temperature (°C)	21
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s
Anostracans Summary	10s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	10
Estimated maximum	13

Surface Area (m)	
length	3
width	2
length	6
width	2.25
Sampling	3 x 2
Estimated maximum	6 x 2.25

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Land use of habitat	ephemeral basin

Pool Photos

Photo



Pool Data

Pool ID	C16
Water Temperature (°C)	21
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s
Anostracans Summary	10s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	6
Estimated maximum	9

Surface Area (m)

length	1.5
width	1
length	2
width	2
Sampling	1.5 x 1
Estimated maximum	2 x 2

Habitat Condition	
Disturbed	1
Disturbance level	moderate
Land use of habitat	ephemeral basin

Pool Photos	
Photo	

Pool Data	
Pool ID	C17
Water Temperature (°C)	21.0
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	100s
Anostracans Summary	100s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	8
Estimated maximum	10

Surface Area (m)	
length	3
width	2.25
length	3.5
width	4
Sampling	3 x 2.25
Estimated maximum	3.5 x 4

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks
Disturbance level	moderate
Land use of habitat	ephemeral basin

Pool Photos	
Photo	

Pool Data	
Pool ID	C18
Water Temperature (°C)	21
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	100s
Anostracans Summary	100s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	7
Estimated maximum	9

Surface Area (m)

length	11
width	2
length	15
width	2.5
Sampling	11 x 2
Estimated maximum	15 x 2.5

Habitat Condition

Disturbed	1
Disturbance type	tire tracks
Land use of habitat	ephemeral basin

Pool Photos

Photo



Pool Data

Pool ID	C19
Water Temperature (°C)	20
Air Temperature (°C)	16
Anostracans	Present
No. of Individuals	10s
Anostracans Summary	10s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	15
Estimated maximum	19

Surface Area (m)

length	3
width	2.25
length	4
width	3
Sampling	3 x 2.25
Estimated maximum	4 x 3

Habitat Condition

Disturbed	1
Disturbance level	moderate
Land use of habitat	ephemeral basin

Pool Photos

Photo	
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Pool Data	
Pool ID	C20
Water Temperature (°C)	21
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	7
Estimated maximum	10

Surface Area (m)	
length	3
width	2.5
length	4
width	3
Sampling	3 x 2.5
Estimated maximum	4 x 3

Habitat Condition	
Disturbed	1
Land use of habitat	ephemeral basin

Pool Photos	
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Photo



Pool Data

Pool ID	C21
Water Temperature (°C)	19
Air Temperature (°C)	21
Anostracans	Present
No. of Individuals	10s
Anostracans Summary	10s; immature did not collect
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)

At time of sampling	19
Estimated maximum	30

Surface Area (m)

length	12
width	3.5
length	25
width	4.25
Sampling	12 x 3.5
Estimated maximum	25 x 4.25

Habitat Condition	
Disturbed	1
Disturbance type	tire tracks, garbage
Land use of habitat	ephemeral basin

Pool Photos	
Photo	

Pool Data	
Pool ID	C22
Water Temperature (°C)	22
Air Temperature (°C)	21
Anostracans	0
No. of Individuals	0
Anostracans Summary	None
Notostracans	0
No. of Individuals	0
Notostracans Summary	None

Pool Depth (cm)	
At time of sampling	3
Estimated maximum	6