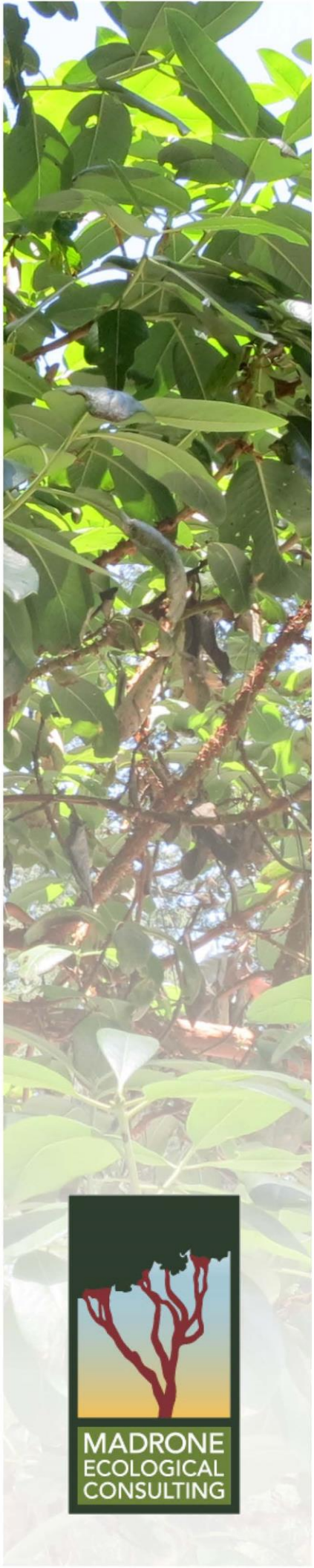
APPENDIX D

Biological Reports



Aquatic Resources Delineation

Roberts' Ranch

Solano County

June 2016

MADRONE ECOLOGICAL CONSULTING

Prepared for:
Sares Regis
1990 Third Street, Suite 400
Sacramento, California 95811

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1.0 EXECUTIVE SUMMARY

This report presents the results of a delineation of Waters of the United States (Waters), including wetlands, conducted by Madrone Ecological Consulting, LLC (Madrone) within the Roberts' Ranch Property (Study Area).

A total of 1.726 acres of potential jurisdictional irrigation ditches was mapped within the approximately 253.4-acre Study Area. The general conditions of these aquatic resources are described in greater detail below in the discussion of mapped water features. Data sheets are included in **Attachment A**, an aquatic resources delineation map is included in **Attachment B**, a list of the plant species observed in the Study Area with their wetland indicator status is included in **Attachment C**, and representative site photographs are included in **Attachment D**.

2.0 STUDY AREA LOCATION

The approximately 253.4-acre Study Area is located in Section 25, Township 6 North, Range 1 West, MDB&M, Solano County, California (UTM: 593,759 meters Easting/ 4,244,162 meters Northing; Zone 10 North). The parcel is portrayed on the "Elmira, California" 7.5-Minute Series Topographic Quadrangle. (USGS 1950) (**Figure 1**).

3.0 DIRECTIONS TO THE STUDY AREA

To access the Study Area from Sacramento by drive west on Interstate 80 and exit at Leisure Town Road (Exit 57). Drive south on Leisure Town Road from I-80 to the intersection with Fry Road. The Study Area is located on the northwest corner of the Leisure Town Road-Fry Road intersection.

4.0 METHODOLOGY

Madrone senior biologist Matt Hirkala conducted a delineation of potential Waters throughout the Study Area on February 12th, 2016; April 12th, 2016; and May 11th, 2016. Waters features and data points were mapped in the field with a GPS unit equipped with sub-meter accuracy (Trimble GeoXT 2005 Series), and three-parameter data (vegetation, soils, and hydrology) were collected at each data point, documenting water features or upland status, as appropriate.

The delineation was performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008), and the Sacramento District's *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (Corps 2016). U.S. Army Corps of Engineers (Corps) regulations (33 CFR 328) were used to determine the presence of Waters other than wetlands. The most recent *National Wetland Plant List* (Lichvar, et al. 2014) was used to determine the wetland indicator status of plants observed in the Study Area. The *Jepson Manual, Second Edition* (Baldwin, et al., eds. 2012) was used for plant nomenclature, except where it conflicted with the nomenclature in the *National Wetland Plant List*, which was given priority. The delineation map was prepared in accordance with the *Final Map and Drawing Standards for the South Pacific Division Regulatory Program* (Corps 2012). The delineation map was prepared by digitizing features surveyed in the field and layering the data over a georeferenced aerial photograph prepared for the National Agriculture Imagery Program flown on May 22, 2012 (NAIP 2012).

5.0 EXISTING SITE CONDITIONS

The approximately 253.4-acre Study Area is situated directly north of Fry Road and east of Leisure Town Road at a median elevation of approximately 80 feet. Parcels to the north, south, and east are occupied by agricultural lands while residential housing developments are located to the west of Leisure Town Road. The site, which has been historically levelled to facilitate flood irrigation, has supported agricultural activities at least since 1973. Tomatoes are currently being grown commercially on-site. Several irrigation ditches traverse the property, and two vehicle staging areas composed of gravel and compacted dirt are positioned in the northeast corner off of Leisure Town Road and near the center of the parcel.

Very little to no vegetation was present during any of the site visits within the majority of the Study Area due to disking/ plowing associated with on-going agricultural activities. Numerous farm roads crisscross the parcel, which lacks any habitable structures.

5.1 Plant Communities

5.1.1 Agricultural Lands

Agricultural lands occupy the majority of the Study Area. The site is currently utilized for the commercial production of tomatoes (*Solanum lycopersicum*), though ruderal areas occupy the periphery of the site. Common species in these areas included black mustard (*Brassica nigra*), medusa-head (*Elymus caput-medusae*), soft chess (*Bromus hordeaceus*), wild radish (*Raphanus sativus*), English plantain (*Plantago lanceolata*), milk thistle (*Silybum marianum*), and prickly lettuce (*Lactuca serriola*) as well as other non-native species. The lone tree was a small Persian tassel tree (*Albizia julibrissin*) located on the south edge off of Fry Road.

5.2 Hydrology

The Study Area, which has been levelled/ graded to facilitate flood irrigation, gently drains to the east. The site's largest water feature is the Frost Canal, which enters the west side of the parcel under Leisure Town Road and exits to the northeast. The Frost Canal is a tributary to the navigable Sacramento River by way of Ulatis Creek and Cache Slough, respectively.

Though the majority of the Study Area is located in the *Ulatis Creek Watershed* (HUC 1802016305), the southwest corner is located in the *Cache Slough Watershed* (HUC 1802016306). The entire Study Area is located in the Lower Sacramento Sub-Basin (HUC 18020163) (NRCS 2013) (**Figure 2**).

5.3 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2012), six soil mapping units, which are listed and described below, occur within the Study Area (**Figure 3**).

Brentwood clay loam, 0-2% slopes (BrA) – This soil is well-drained, associated with alluvial fans, and derived from sedimentary rock. The erosion hazard is slight and runoff is very slow. Included in this unit are small areas of Yolo silty clay loam and Rincon clay loam.

Capay silty clay loam (Ca) - This soil is moderately well drained and created from sedimentary rocks. It is located on basin rims and classified as a typic chromoxerert. Included in this map unit are small areas of Yolo silty clay loam, Rincon clay loam, and Brentwood clay loam.

Capay clay (Cc) – This unit is moderately well drained, associated with basin rims, and is formed in alluvium derived from sedimentary rocks. The erosion hazard is slight and surface runoff is very slow. Inclusions found within this unit include Clear Lake clay, Omni silty clay, and Pescadero clay loam.

Rincon clay loam, 0-2% slopes (RoA) - This soil is well-drained, associated with alluvial fans, and derived from sedimentary rock that is formed in alluvium. The erosion hazard is slight and runoff is slow. Included in this unit are small areas of Brentwood clay loam and Capay silty clay loam.

San Ysidro sandy loam, 0-2% slopes (SeA) – This soil is a moderately well drained typic natrixeralf that was derived from sedimentary alluvium. It is usually associated with terraces, and common inclusions include San Ysidro sandy loam, thick surface and Antioch loam.

San Ysidro sandy loam, thick surface, 0-2%slope (SfA) - This unit is moderately well drained and also derived in alluvium from sedimentary rock. It is a typic palexeralf with slow runoff. Inclusions include Antioch loam and San Ysidro sandy loam.

6.0 Aquatic Resources

A total of 1.726 acres of potential jurisdictional irrigation ditches was mapped within the Study Area. Data sheets are included in **Attachment A**. An aquatic resources delineation map with an inset table of aquatic resource acreages is included in **Attachment B**. A list of plant species observed within the Study Area with their wetland indicator status is included in **Attachment C**, and representative site photographs are included in **Attachment D**. **Attachment E** is the Aquatic Resources Excel Sheet.

6.1 Potential Waters

6.1.1 Irrigation Ditches

Approximately 1.726 acres of irrigation ditches were surveyed within the Study Area. These features displayed a distinct bed and bank as well as an ordinary high water mark within various reaches. None contained water during any of the field surveys. These are maintained irrigation features that mostly lacked significant vegetation. Herbaceous vegetation, when present, included tall flat-sedge (*Cyperus eragrostis*), smartweed (*Persicaria* sp.) and barnyard grass (*Echinochloa crus-galli*). No data points were taken within these features due to their sharp contrast with the surrounding uplands.

7.0 CONCLUSION

We have elected to use a preliminary jurisdictional determination (JD) rather than an approved JD in accordance with the U.S. Army Corps of Engineers Regulatory Guidance Letter No. 08-02 dated June 26, 2008. As a result, no discussion of a significant nexus to waters of the U.S. is provided in this report.

These conclusions represent the professional opinion of Madrone Ecological Consulting. Ultimately, the Corps of Engineers is responsible for determining the jurisdictional status of features within the Study Area.

9.0 REFERENCES

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Figures

Attachments

Attachment A. Arid West Wetland Determination Data Forms

Attachment B. Aquatic Resources Delineation Map

Attachment C. Plant Species Observed within the Study Area

Attachment D. Representative Photographs

Attachment E. Aquatic Resources Excel Sheet

Attachment A

Arid West Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Roberts' Ranch City/County: Solano County Sampling Date: 02/12/16
Applicant/Owner: Sares Regis State: CA Sampling Point: 1
Investigator(s): M. Hirkala Section, Township, Range: Section 25, Township 6 North, Range 1 West, MDB&M
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.337636 Long: -121.929383 Datum: NAD83
Soil Map Unit Name: RoA - Rincon clay loam, 0-2% slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ____	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Remarks:

This area was disked in the spring as part of an ongoing commercial tomato growing operation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	=Total Cover	

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks: No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Roberts' Ranch City/County: Solano County Sampling Date: 02/12/16
Applicant/Owner: Sares Regis State: CA Sampling Point: 2
Investigator(s): M. Hirkala Section, Township, Range: Section 25, Township 6 North, Range 1 West, MDB&M
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.343524 Long: -121.930854 Datum: NAD83
Soil Map Unit Name: RoA - Rincon clay loam, 0-2% slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No **X**	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** **X**
Hydric Soil Present?	Yes ____ No **X**		
Wetland Hydrology Present?	Yes ____ No **X**		

Remarks:

This area was disked in the spring as part of an ongoing commercial tomato growing operation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
Herb Stratum (Plot size: 4'x4')			
1. *Medicago sativa*	2	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum 98	% Cover of Biotic Crust 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**2**	x5 =	**10**
Column Totals:	**2** (A)		**10** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks: No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Roberts' Ranch City/County: Solano County Sampling Date: 02/12/16
Applicant/Owner: Sares Regis State: CA Sampling Point: 3
Investigator(s): M. Hirkala Section, Township, Range: Section 25, Township 6 North, Range 1 West, MDB&M
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.343364 Long: -121.92673 Datum: NAD83
Soil Map Unit Name: RoA - Rincon clay loam, 0-2% slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No **X**	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** **X**
Hydric Soil Present?	Yes ____ No **X**		
Wetland Hydrology Present?	Yes ____ No **X**		

Remarks:

This area was disked in the spring as part of an ongoing commercial tomato growing operation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
Herb Stratum (Plot size: 4'x4')			
1. *Medicago sativa*	2	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum 98	% Cover of Biotic Crust 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**2**	x5 =	**10**
Column Totals:	**2** (A)		**10** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks: No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Roberts' Ranch City/County: Solano County Sampling Date: 02/12/16
Applicant/Owner: Sares Regis State: CA Sampling Point: 4
Investigator(s): M. Hirkala Section, Township, Range: Section 25, Township 6 North, Range 1 West, MDB&M
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.343999 Long: -121.920495 Datum: NAD83
Soil Map Unit Name: SeA - San Ysidro sandy loam, 0-2 % slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No X**
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:

This area was disked in the spring as part of an ongoing commercial tomato growing operation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
Herb Stratum (Plot size: 4'x4')			
1. *Medicago sativa*	2	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum 98	% Cover of Biotic Crust 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**2**	x5 =	**10**
Column Totals:	**2** (A)		**10** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No X**

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks: No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Roberts' Ranch City/County: Solano County Sampling Date: 02/12/16
Applicant/Owner: Sares Regis State: CA Sampling Point: 5
Investigator(s): M. Hirkala Section, Township, Range: Section 25, Township 6 North, Range 1 West, MDB&M
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.34115 Long: -121.920855 Datum: NAD83
Soil Map Unit Name: RoA - Rincon clay loam, 0-2% slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	
Hydric Soil Present?	Yes	No	X
Wetland Hydrology Present?	Yes	No	X

Is the Sampled Area within a Wetland? Yes No X

Remarks:

This area was disked in the spring as part of an ongoing commercial tomato growing operation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR2/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks: No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Roberts' Ranch City/County: Solano County Sampling Date: 02/12/16
Applicant/Owner: Sares Regis State: CA Sampling Point: 6
Investigator(s): M. Hirkala Section, Township, Range: Section 25, Township 6 North, Range 1 West, MDB&M
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.3405 Long: -121.923904 Datum: NAD83
Soil Map Unit Name: RoA - Rincon clay loam, 0-2% slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No **X**	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** **X**
Hydric Soil Present?	Yes ____ No **X**		
Wetland Hydrology Present?	Yes ____ No **X**		

Remarks:

This area was disked in the spring as part of an ongoing commercial tomato growing operation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
Herb Stratum (Plot size: 4'x4')			
1. *Medicago sativa*	2	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	
% Bare Ground in Herb Stratum 98	% Cover of Biotic Crust 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**2**	x5 =	**10**
Column Totals:	**2** (A)		**10** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR2/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks: No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators detected.

Attachment B

Aquatic Resources Delineation Map

Aquatic Resources Delineation
Roberts' Ranch

Solano County, California

Irrigation Ditches		
Ref. No.	Area (ft²)	Area (ac)
ID1	20,324	0.467
ID2	7,264	0.167
ID3	10,092	0.232
ID4	1,909	0.044
ID5	6,511	0.149
ID6	29,061	0.667
	Total	1.726

Scale: 1 inch = 150 feet
Coordinate System: NAD 1983 UTM, Zone 10N
Datum: NAD83
Projection: Transverse Mercator
Vertical Data: NAVD88
Aerial Base: USDA, National Agriculture Imagery Program
Aerial Base Flown: May 22, 2012
Map Prepared by: M. Hirkala
Delineation Performed by: M. Hirkala

N

0 75 150 300
Feet

Prepared For:

Sares Regis
1990 Third Street, Suite 400
Sacramento, California 95811

MADRONE ECOLOGICAL CONSULTING
2617 K Street, Suite 175
Sacramento, California 95816
Office: (916) 822-3230
Fax: (916) 822-3231

Date Map Prepared: June 2016

Revised Date:

Attachment C

Plant Species Observed within the Study Area

Plant Species Observed within the Roberts' Ranch Study Area

Species Name	Common Name	Wetland Indicator Status
Albizia julibrissin	Persian silt tree	UPL
Avena fatua	Wild oat	UPL
Brassica rapa	Rape	UPL
Bromus diandrus	Ripgut brome	UPL
Bromus hordeaceus	Soft brome	FACU
Capsella bursa-pastoris	Shepherd's purse	FACU
Carduus pycnocephalus	Italian thistle	UPL
Centaurea solstitialis	Yellow star-thistle	FACU
Cichorium intybus	Chicory	UPL
Convolvulus arvensis	Bindweed	UPL
Croton setigerus	Turkey mullein	FACU
Cynodon dactylon	Bermuda grass	UPL
Cyperus eragrostis	Tall flat sedge	UPL
Echinochloa crus-galli	Barnyard grass	FACW
Epilobium brachycarpum	Annual fireweed	UPL
Erodium botrys	Filaree	FACU
Erodium moschatum	White stemmed filaree	UPL
Helminthotheca echioides	Akan asante	FAC
Hypochaeris glabra	Smooth cat's ear	UPL
Lactula serriola	Prickly lettuce	FACU
Lolium perenne	Perennial rye	FAC
Malva sp.	Mallow	--
Medicago polymorpha	Toothed medick	FACU
Paspalum dilatatum	Dallis grass	FAC
Persicaria sp.	Smartweed	--
Plantago lanceolata	English plantain	FAC
Plantago major	Broad-leaf plantain	FAC
Polypogon monspeliensis	Rabbit's foot grass	FACW

Species Name	Common Name	Wetland Indicator Status
Ranunculus muricatus	Spiny-fruit buttercup	FACW
Raphanus sativus	Wild radish	UPL
Rumex crispus	Curly dock	FAC
Salsola tragus	Russian thistle	FACU
Senecio vulgaris	Old-man-in-the-Spring	FACU
Sorghum halepense	Johnson grass	FACU
Taraxicum officinale	Dandyl-lion	UPL
Tragopogon sp.	Salsify	--
Tribulus terrestris	Puncture vine	UPL
Vicia villosa	Hairy vetch	UPL
Vulpia myuros	Rattail fescue	FACU
Xanthium strumarium	Prickly cocklebur	FAC

Attachment D

Representative Photographs

Roberts' Ranch

Photo Index

Photo Point 1: Facing South

Photo Point 1: Facing Southeast

Photo Point 1: Facing Southwest

Photo Point 2: Facing North

Photo Point 2: Facing East

Photo Point 3: Facing East

Photo Point 3: Facing North

Photo Point 3: Facing South

Photo Point 4: Facing East

Photo Point 4: Facing South

Photo Point 5: Facing South

Photo Point 5: Facing East

Photo Point 5: Facing West

Photo Point 6: Facing West

Photo Point 6: Facing South

Photo Point 6: Facing North

Photo Point 7: Facing North

Photo Point 7: Facing West

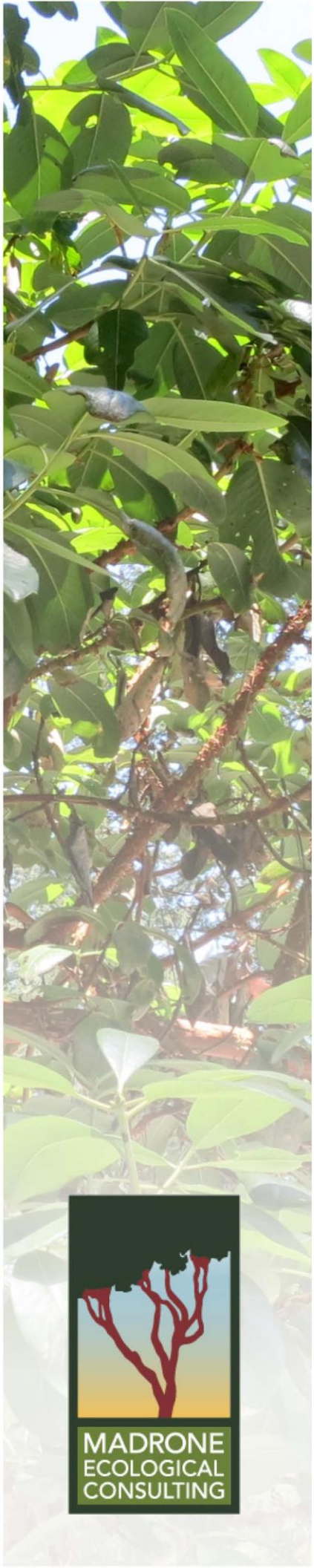
Photo Point 7: Facing East

Attachment E

Aquatic Resources Excel Sheet

Aquatic Resources within the Study Area
Roberts' Ranch

Aquatic Resource Name	Cowardin Code	Area (Acres)	Length (Linear Feet)	Latitude (NAD83)	Longitude (NAD83)
ID1	R	0.467	2,545	38.33711	-121.92692
ID2	R	0.167	1,041	38.34134	-121.92915
ID3	R	0.232	1,503	38.33915	-121.92453
ID4	R	0.044	1,265	38.33723	-121.92306
ID5	R	0.149	728	38.34292	-121.92458
ID6	R	0.667	2,951	38.34107	-121.91821
	Total:	**1.726**	**10,033**		



Biological Resources Assessment

Roberts' Ranch

Solano County

June 2016

MADRONE ECOLOGICAL CONSULTING

Prepared for:
Sares Regis
1990 Third Street, Suite 400
Sacramento, California 95811

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1.0 INTRODUCTION

This report presents the results of a Biological Resources Assessment (BRA) conducted for the Roberts' Ranch Property (Study Area). The approximately 253.4-acre Study Area, which is situated directly east of the City of Vacaville, is located in Section 25, Township 6 North, Range 1 West, MDB&M, Solano County, California (UTM: 593,759 meters Easting/ 4,244,162 meters Northing; Zone 10 North). The parcel is portrayed on the "Elmira, California" 7.5-Minute Series Topographic Quadrangle. (USGS 1950) (**Figure 1**).

2.0 REGULATORY SETTING

This section describes federal, state and local laws and policies that are relevant to this assessment of biological resources.

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 protects species that are federally listed as endangered or threatened with extinction. FESA prohibits the unauthorized "take" of listed species. Take includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such activities. Harm includes significant modifications or degradations of habitats that may cause death or injury to protected species by impairing their behavioral patterns. Harassment includes disruption of normal behavior patterns that may result in injury to or mortality of protected species. Civil or criminal penalties can be levied against persons convicted of unauthorized "take."

2.1.2 Clean Water Act, Section 404

Section 404 of the Federal Clean Water Act requires that a Department of the Army permit be issued prior to the discharge of any dredged or fill material into waters of the United States, including wetlands. The U. S. Army Corps of Engineers (Corps) administers this program, with oversight from the U. S. Environmental Protection Agency. Waters of the United States include all navigable waters; interstate waters and wetlands; all intrastate waters and wetlands that could affect interstate or foreign commerce; impoundments of the above; tributaries of the above; territorial seas; and wetlands adjacent to the above.

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, any native migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11.). Likewise, Section 3513 of the California Fish & Game Code prohibits the "take or possession" of any migratory non-game bird identified under the MBTA. Therefore, activities that may result in the injury or mortality of native migratory birds, including eggs and nestlings, would be prohibited under the MBTA.

2.2 State Regulations

2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires evaluations of project effects on biological resources. Determining the significance of those effects is guided by Appendix G of the CEQA guidelines. These evaluations must consider direct effects on a biological resource within the Study Area itself, indirect effects on adjacent resources, and cumulative effects within a larger area or region. Effects can be locally important but not significant according to CEQA if they would not substantially affect the regional population of the biological resource. Significant adverse impacts on biological resources would include the following:

- Substantial adverse effects on any species identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) (these effects could be either direct or via habitat modification);
- Substantial adverse impacts to species designated by the California Department of Fish and Game (2009) as Species of Special Concern;
- Substantial adverse effects on riparian habitat or other sensitive habitat identified in local or regional plans, policies, or regulations or by CDFW and USFWS;
- Substantial adverse effects on federally protected wetlands defined under Section 404 of the Clean Water Act (these effects include direct removal, filling, or hydrologic interruption of marshes, vernal pools, coastal wetlands, or other wetland types);
- Substantial interference with movements of native resident or migratory fish or wildlife species population, or with use of native wildlife nursery sites;
- Conflicts with local policies or ordinances protecting biological resources (e.g. tree preservation policies); and
- Conflict with provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

2.2.2 State Endangered Species Act

With limited exceptions, the California Endangered Species Act (CESA) of 1984 protects state-designated endangered and threatened species in a way similar to FESA. For projects on private property (i.e. that for which a state agency is not a lead agency), CESA enables CDFW to authorize take of a listed species that is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code Section 2081).

2.2.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

2.2.4 Clean Water Act, Section 401

Section 401 of the Clean Water Act requires any applicant for a 404 permit for activities that result in the discharge of dredged or fill material into waters of the United States to obtain a State Water Quality Certification (401 Certification) that the proposed activity will comply with state water quality standards. In California, this program is administered by the State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCB). Because the water quality certification program is triggered by the need for a Section 404 permit (and both programs are a part of the Clean Water Act), the definition of waters of the United States under Section 401 is the same as that used by the Corps under Section 404.

2.2.5 California Water Code, Porter-Cologne Act

The Porter Cologne Act, from Division 7 of the California Water Code, requires any person discharging waste or proposing to discharge waste that could affect the quality of waters of the state to file a report of waste discharge (RWD) with the RWQCB. The RWQCB can waive the filing of a report, but once a report is filed, the RWQCB must either waive or adopt water discharge requirements (WDRs). "Waters of

the state" are defined as any surface water or groundwater, including saline waters, within the boundaries of the state.

2.2.6 California Fish and Game Code, Section 1600 – Streambed and Lake Alteration

The CDFW is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code, Section 1602, requires notification to CDFW of any proposed activity that may substantially modify a river, stream, or lake. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- substantially divert or obstruct the natural flow of any river, stream or lake;
- substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

For the purposes of Section 1602, rivers, streams and lakes must flow at least intermittently through a bed or channel. If notification is required and CDFW believes the proposed activity is likely to result in adverse harm to the natural environment, it will require that the parties enter into a Lake or Streambed Alteration Agreement (LSAA).

2.2.7 California Fish and Game Code, Section 3503.5 - Raptor Nests

Section 3503.5 of the Fish and Game Code makes it unlawful to take, possess, or destroy hawks or owls, unless permitted to do so, or to destroy the nest or eggs of any hawk or owl.

2.3 Local Regulations

2.3.1 Tree Ordinance – City of Vacaville

The City of Vacaville's Tree Ordinance is found in Chapter 14.09.131 of their General Plan. It states that "For the purposes of this chapter, tree means any live woody plant having one or more well defined perennial stems with an aggregate circumference of 31 inches or more, when measured at 4-1/2 feet above ground level." Per the Tree Ordinance, "Prior to cutting down, removing, or destroying one or more trees on any property in the City, the property owner or the owner's authorized representative shall submit an application for a tree removal permit." The Study Area is to be annexed by the City of Vacaville upon the finalization and approval of the Roberts' Ranch Specific Plan.

3.0 METHODOLOGY

3.1 Literature Review

A list of special-status species with potential to occur within the Study Area was developed by conducting a query of the following databases:

- California Natural Diversity Database (CNDDB) (CNDDB 2016) for all occurrences within five miles of the Study Area;
- Federally-listed species on the USFWS Information for Planning and Conservation (USFWS 2016) query for the Study Area (Attachment B);
- California Natural Diversity Database (CNDDB) (CNDDB 2016) for all occurrences of special-status plants in the "Elmira, California" USGS topo quadrangle, and the eight surrounding quadrangles.

For the purposes of this Biological Resources Assessment, special-status species is defined as those species that are:

- listed as threatened or endangered, or proposed or candidates for listing by the USFWS or National Marine Fisheries Service;
- listed as threatened or endangered and candidates for listing by CDFW;
- identified as Fully Protected species, species of special concern, or Watch List species by CDFW;
- identified as a Bird of Conservation Concern by the USFWS;
- identified as a Medium or High priority species by the WBWG (WBWG 2015); and
- plant species considered to be rare, threatened, or endangered in California by the CNPS and CDFW [California Rare Plant Rank (CRPR) 1, 2, and 3]:
  - CRPR 1A: Plants presumed extinct.
  - CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere.
  - CRPR 2A: Plants extirpated in California, but common elsewhere.
  - CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
  - CRPR 3: Plants about which the CNPS needs more information – a review list.
- In addition, several species that do not have any regulatory status, but are either tracked by the CNDDB, or were analyzed in the EIR were included on the special-status species list.

3.2 Field Survey

Madrone Ecological Consulting, LLC (Madrone) senior biologist Matt Hirkala conducted field surveys of the Study Area on February 12th, 2016; April 12th, 2016; and May 11th, 2016, to assess the suitability of habitats on-site to support special-status species. Meandering transects were performed on foot throughout the Study Area (**Figure 2**).

4.0 GENERAL SITE CONDITIONS AND HABITAT

The approximately 253.4-acre Study Area is situated directly north of Fry Road and east of Leisure Town Road at a median elevation of approximately 80 feet. Parcels to the north, south, and east are occupied by agricultural lands while residential housing developments are located to the west of Leisure Town Road. The site, which has been historically levelled to facilitate flood irrigation, has supported agricultural activities at least since 1973. Several irrigation ditches traverse the property, and two vehicle staging areas composed of gravel and compacted dirt are positioned in the northeast corner off of Leisure Town Road and near the center of the parcel.

Croplands make up the majority of the Study Area. The site, which is flood irrigated by a series of internal irrigation ditches, is currently utilized for the commercial production of tomatoes (*Solanum lycopersicum*). Ruderal areas occupy the periphery of the site and support a plant community comprised of black mustard (*Brassica nigra*), medusa-head (*Elymus caput-medusae*), soft chess (*Bromus hordeaceus*), wild radish (*Raphanus sativus*), English plantain (*Plantago lanceolata*), milk thistle (*Silybum marianum*), and prickly lettuce (*Lactuca serriola*) as well as other non-native herbaceous species. Only one tree, a small Persian tassel tree (*Albizia julibrissin*), is located on-site on the south edge near Fry Road, which defines the south edge of the Study Area.

4.1 Hydrology

The Study Area has been leveled to facilitate flood irrigation and gently slopes from west to east. Several internal seasonal ditches are located on the downslope sides of the tomato fields and convey irrigation run-off to a system of maintained irrigation ditches. These are described below.

4.2 Waters of the U.S. and State

An aquatic resources delineation (delineation) was prepared by Madrone for the Study Area in June of 2016; however, it has not yet been verified by the U.S. Army Corps of Engineers. According to the

unverified delineation, the site contains approximately 1.726 acres of potentially jurisdictional irrigation ditches.

4.2.1 Irrigation Ditches

Approximately 1.726 acres of irrigation ditches were surveyed by Madrone within the Study Area. These features display a distinct bed and bank as well as an ordinary high water mark within various reaches. All of these are maintained irrigation features that mostly lacked significant vegetation. Herbaceous vegetation, when present, included tall flat-sedge (*Cyperus eragrostis*), smartweed (*Persicaria* sp.) and barnyard grass (*Echinochloa crus-galli*).

4.3 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2012), six soil mapping units, which are listed and described below, occur within the Study Area (**Figure 3**).

Brentwood clay loam, 0-2% slopes (BrA) – This soil is well-drained, associated with alluvial fans, and derived from sedimentary rock. The erosion hazard is slight and runoff is very slow. Included in this unit are small areas of Yolo silty clay loam and Rincon clay loam.

Capay silty clay loam (Ca) - This soil is moderately well drained and created from sedimentary rocks. It is located on basin rims and classified as a typic chromoxerert. Included in this map unit are small areas of Yolo silty clay loam, Rincon clay loam, and Brentwood clay loam.

Capay clay (Cc) – This unit is moderately well drained, associated with basin rims, and is formed in alluvium derived from sedimentary rocks. The erosion hazard is slight and surface runoff is very slow. Inclusions found within this unit include Clear Lake clay, Omni silty clay, and Pescadero clay loam.

Rincon clay loam, 0-2% slopes (RoA) - This soil is well-drained, associated with alluvial fans, and derived from sedimentary rock that is formed in alluvium. The erosion hazard is slight and runoff is slow. Included in this unit are small areas of Brentwood clay loam and Capay silty clay loam.

San Ysidro sandy loam, 0-2% slopes (SeA) – This soil is a moderately well drained typic natrixeralf that was derived from sedimentary alluvium. It is usually associated with terraces, and common inclusions include San Ysidro sandy loam, thick surface and Antioch loam.

San Ysidro sandy loam, thick surface, 0-2%slope (SfA) - This unit is moderately well drained and also derived in alluvium from sedimentary rock. It is a typic palexeralf with slow runoff. Inclusions include Antioch loam and San Ysidro sandy loam.

5.0 RESULTS

5.1 Special-Status Species

A list (**Attachment A**) of special-status species with potential to occur within the Study Area was developed by conducting a query of the following databases:

- California Natural Diversity Database (CNDDB) (CNDDB 2016) for all occurrences within five miles of the Study Area;
- Federally-listed species on the USFWS Information for Planning and Conservation (IPaC) (USFWS 2016) query for the Study Area;
- Birds listed as protected by the Migratory Bird Treaty Act on the USFWS Information for Planning and Conservation (IPaC) (USFWS 2016) query categorized as CDFW species of concern, CDFW

fully protected species, state-listed endangered or threatened species, federally-listed endangered or threatened species, or state/ federally delisted species;
- California Natural Diversity Database (CNDDB) (CNDDB 2016) for all occurrences of special-status plants in the "Elmira, California" USGS topo quadrangle, and the eight surrounding quadrangles.

Due to the geographic location of the Study Area and the relatively broad extent of the database query, the results were quite extensive, and included a number of species endemic to habitats that do not occur on-site, such as vernal pools, coastal salt marshes, and Coast Range serpentine soils. **Attachment A** provides a list of special-status species that have potential to occur on-site, including their listing status, habitat associations, and their relative potential to occur in the Study Area. The following set of criteria was used to determine each species' potential for occurrence within the Study Area:

- High: The site is within the known range of the species and suitable habitat exists.
- Moderate: The site is within the known range of the species and very limited suitable habitat exists.
- Low: The site is within the known range of the species and there is marginally suitable habitat or the species was not observed during protocol-level surveys conducted on-site.
- No Habitat Present: The site does not contain suitable habitat for the species, or the site is outside the known range of the species.
- Present: Species was observed within the Study Area during field surveys.

Figure 4 is an exhibit displaying CNDDB occurrences within five miles of the Study Area (CNDDB, 2016). Below is a discussion for all special-status plant and animal species with regulatory status that have the potential to occur within the Study Area. **Figure 5** displays critical habitats and vernal pool core recovery areas within ten miles of the Study Area (USFWS, 2014).

5.1.1 Plants

5.1.1.1 Round-Leaved Filaree

Round-leaved filaree (*California macrophylla*) is not a federally or state listed species; however, it is categorized by CNPS as a 1.B.2 species meaning it is rare, threatened, or endangered in California and elsewhere. Round-leaved filaree is documented as occurring in open sites such as grassland and scrub habitats with vertic clays, though it occasionally is found on serpentine soils.

The CNDDB records an 1886 occurrence of this species in very close proximity to the Study Area, and the site supports clay soils that potential provide suitable habitat; however, the site is highly disturbed due to continuous farming activities since at least the 1970s. There is a low potential for occurrence for round-leaved filaree within the Study Area.

5.1.1.2 Congdon's Tarplant

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) is not a federally or state listed species; however, it is categorized by CNPS as a 1**.**B.1 species meaning it is rare, threatened, or endangered in California and elsewhere. Congdon's tarplant is associated with terraces, swales, floodplains, grasslands, and disturbed sites.

Though Congdon's tarplant is associated with the type of disturbed areas associated with the Study Area, there is a low potential for occurrence due to the continuous agricultural history of the site. The closest CNDDB occurrence is nine miles to the south.

5.1.1.3 Slender-Leaved Pondweed

Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*) is not a federally or state listed species; however, it is categorized by CNPS as a 2**.**B.2 species meaning it is rare, threatened, or endangered in California, but more common elsewhere. Slender-leaved pondweed is strongly associated with open waters in marshes, swamps, shallow lakes, ponds, and drainage channels.

Some of the irrigation ditches provide suitable habitat for slender-leaved pondweed, but most are highly maintained irrigation features heavily utilized to support farming activities in the area; there is a low potential for this species to occur within the Study Area. The nearest CNDDB occurrence is over 8 miles to the southwest.

5.1.2 Invertebrates

5.1.2.1 Ricksecker's Water Scavenger Beetle

Ricksecker's water scavenger beetle is not a federally or state listed species; however, it holds a State Ranking of S2? meaning it is classified as imperiled in California because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from the state. The ecology of this aquatic beetle is poorly understood, though other members of this family (Hydrophilidae) are scavengers with predaceous larva. The CNDDB describes the species as primarily being found in vernal pools, seasonal wetlands, though it has also been observed in open waters such as lakes and reservoirs.

Though the irrigation ditches provide what may be considered suitable habitat for this poorly understood species, there is a low potential for occurrence due to the highly maintained nature of these aquatic features. The closest CNDDB occurrence is approximately 3.5 miles to the south in a seasonal wetland that parallels a railroad right-of-way (CNDDB 2016).

5.1.3 Birds

5.1.3.1 Common Raptor Species

Common raptors and their nests are protected by Section 3503.5 of the Fish and Game Code of California and by the Federal Migratory Bird Treaty Act. These raptor species include red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*B. lineatus*), American kestrel (*Falco sparverius*), and great horned owl (*Bubo virginianus*), among others. In general, raptor nesting occurs from late February/early March through late July/early August, depending upon the species and various environmental conditions. Potential foraging habitat for these species is present in the agricultural lands throughout the Study Area.

5.1.3.2 Short-Eared Owl

Short-eared owl (*Asio flammeus*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a species of special concern by the CDFW. This ground-nesting raptor is strongly associated with open areas including grasslands, prairies, dunes, meadows, agricultural lands where it forages for small mammals and birds.

The agricultural lands within the Study Area provide suitable foraging habitat for short-eared owl; there is a high potential for this species to occur within the Study Area. The closest CNDDB occurrence is over ten miles south in coastal marsh and grassland habitats of the Grizzly Island Wildlife Area (CNDDB 2016).

5.1.3.3 Burrowing Owl

Burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a species of special concern by the CDFW. They typically inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel, but may also use man-made structures such as culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (CDFG 1995). The breeding season extends from February 1 through August 31 (CBOC 1993, CDFG 1995).

A burrowing owl was observed during field surveys occupying a burrow located in the bank of one of the irrigation ditches. The location of the active burrow is portrayed in **Figure 6**.

5.1.3.4 Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a raptor species that is not federally listed, but is listed as threatened by CDFW. Breeding pairs typically nest in tall trees associated with riparian corridors, and forage in grassland, irrigated pasture, and cropland with a high density of rodents (Shuford and Gardali 2008). The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter (Shuford and Gardali 2008).

Swainson's hawks were observed foraging the site during field surveys; however, no nests or suitably-sized trees are located within the Study Area. No Swainson's hawk nests were observed within the immediate vicinity of the Study Area. The CNDDB records one occurrence within 0.5 mile of the Study Area: This 2011 occurrence is located approximately 0.4 mile to the northeast in Elmira between A Street and Lewis Road.

5.1.3.5 Mountain Plover

The mountain plover (*Charadrius montanus*) is a bird categorized by CDFW as a species of special concern. This ground nester is considered a shorebird, but it prefers to live in drier areas away from water. It breeds in the Great Basin and migrates to California in the winter where its life cycle is poorly understood. It forages in California grasslands, pastures, and farmlands for insects which make up the majority of its diet.

Mountain plovers are known locally to forage the type of agricultural lands present within the Study Area. There is a moderate rather than a high potential for occurrence due to declining populations and its status as a wintering species in California rather than a year-round resident. The closest CNDDB occurrence is approximately 9 miles southeast of the Study Area (CNDDB 2016).

5.1.3.6 Northern Harrier

The northern harrier *(Circus cyaneus)* is not listed pursuant to either the California or federal Endangered Species Acts; however, it is considered to be a species of special concern by the CDFW. This species is

known to nest within the Central Valley, along the Pacific Coast, and in northeastern California (Shuford and Gardali 2008). The northern harrier is a ground nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah habitats. Foraging occurs within a variety of open habitats such as marshes, agricultural fields, and grasslands (Shuford and Gardali 2008).

A pair of northern harriers was observed foraging the site during field surveys; however, no nests are located within the Study Area, which is currently planted in tomatoes. No northern harrier nests were observed within the immediate vicinity of the Study Area.

5.1.3.7 White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not federally or state listed, but is a CDFW fully protected species. This species is a yearlong resident in the Central Valley and is primarily found in or near foraging areas such as open grasslands, meadows, farmlands, savannahs, and emergent wetlands (Shuford and Gardali 2008). White-tailed kites typically nest from March through June in trees within riparian, oak woodland, and savannah habitats of the Central Valley and Coast Range (Shuford and Gardali 2008).

White-tailed kites were observed foraging the site during field surveys; however, no nests or suitably-sized trees are located within the Study Area. No white-tailed kite nests were observed within the immediate vicinity of the Study Area.

5.1.3.8 Loggerhead Shrike

The loggerhead shrike *(Lanius ludovicianus)* is not listed and protected pursuant to either the California or federal Endangered Species Acts; but is a CDFW species of special concern. Loggerhead shrikes nest in small trees and shrubs in woodland and savannah vegetation communities, and forage in open habitats including agricultural lands throughout California (Shuford and Gardali 2008). The nesting season ranges from March through June.

The agricultural lands within the Study Area provide suitable foraging habitat for loggerhead shrike; there is a high potential for this species to occur within the Study Area.

7.0 REFERENCES

California Burrowing Owl Consortium (CBOC). 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. Dated April 1993.

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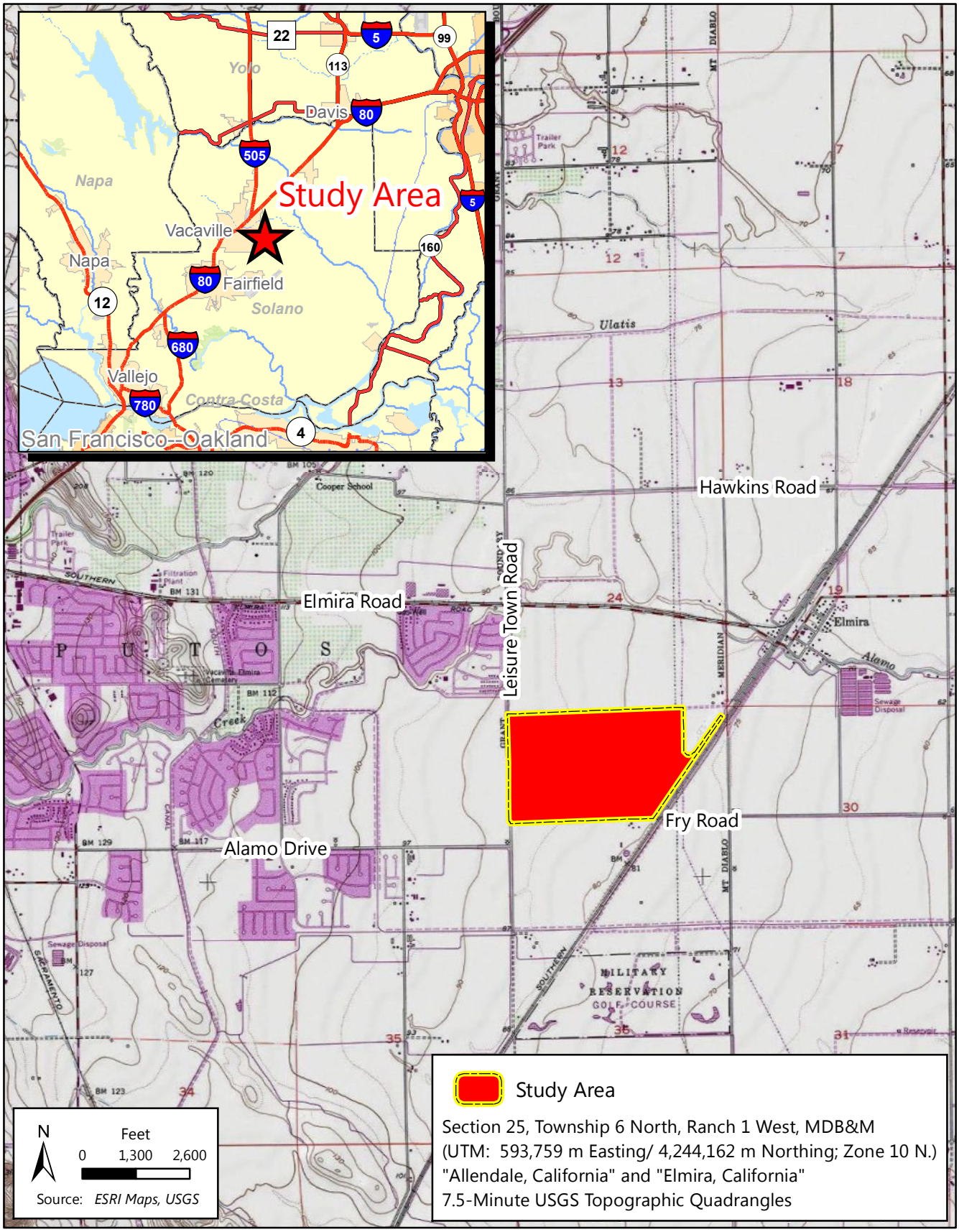
Figures



Roberts' Ranch
Biological Resources Assessment
June 2016

Figure 1
Vicinity Map

Roberts' Ranch
Biological Resources Assessment
June 2016

Figure 2
Study Area

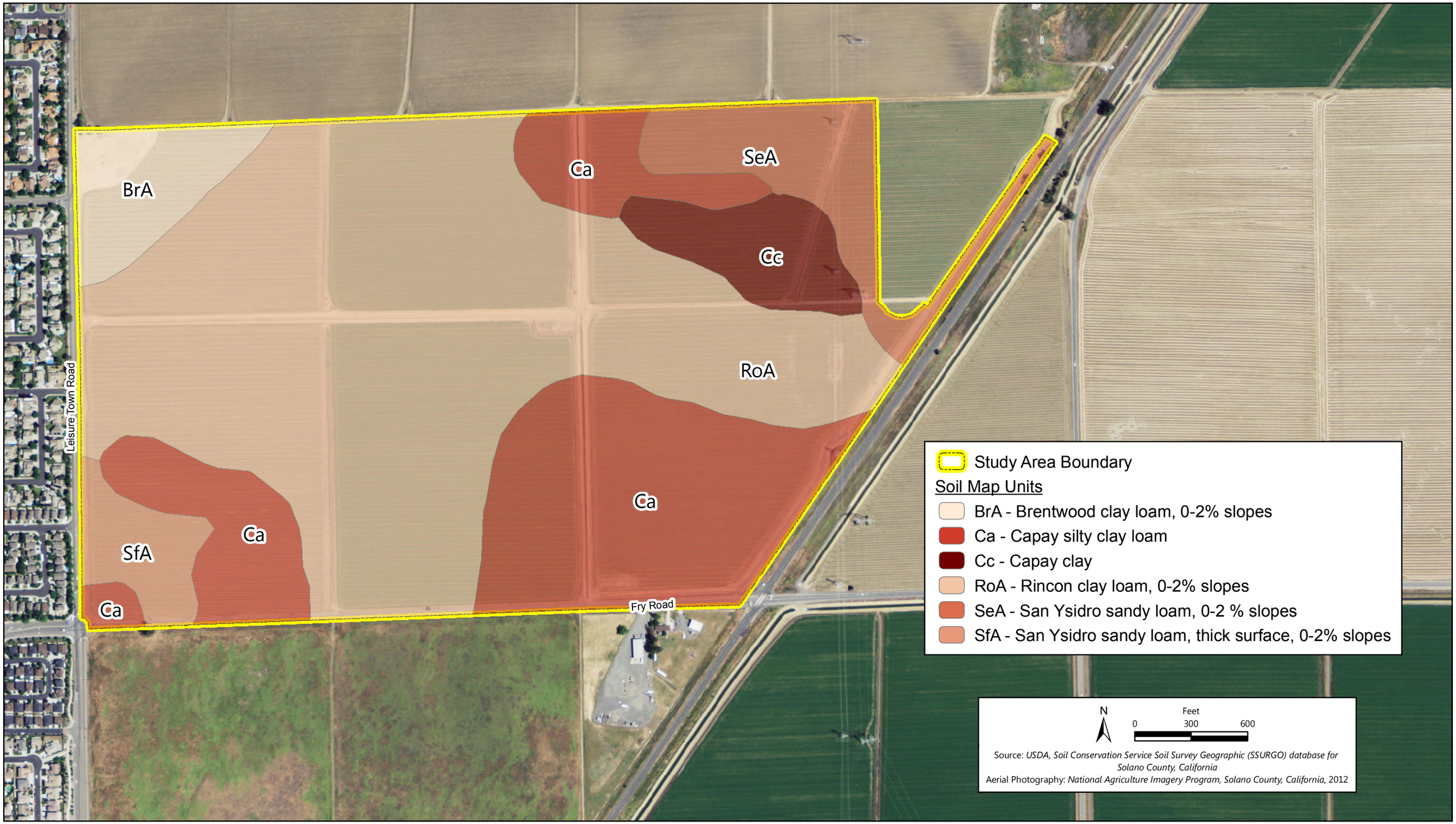


Figure 3
Soils Map

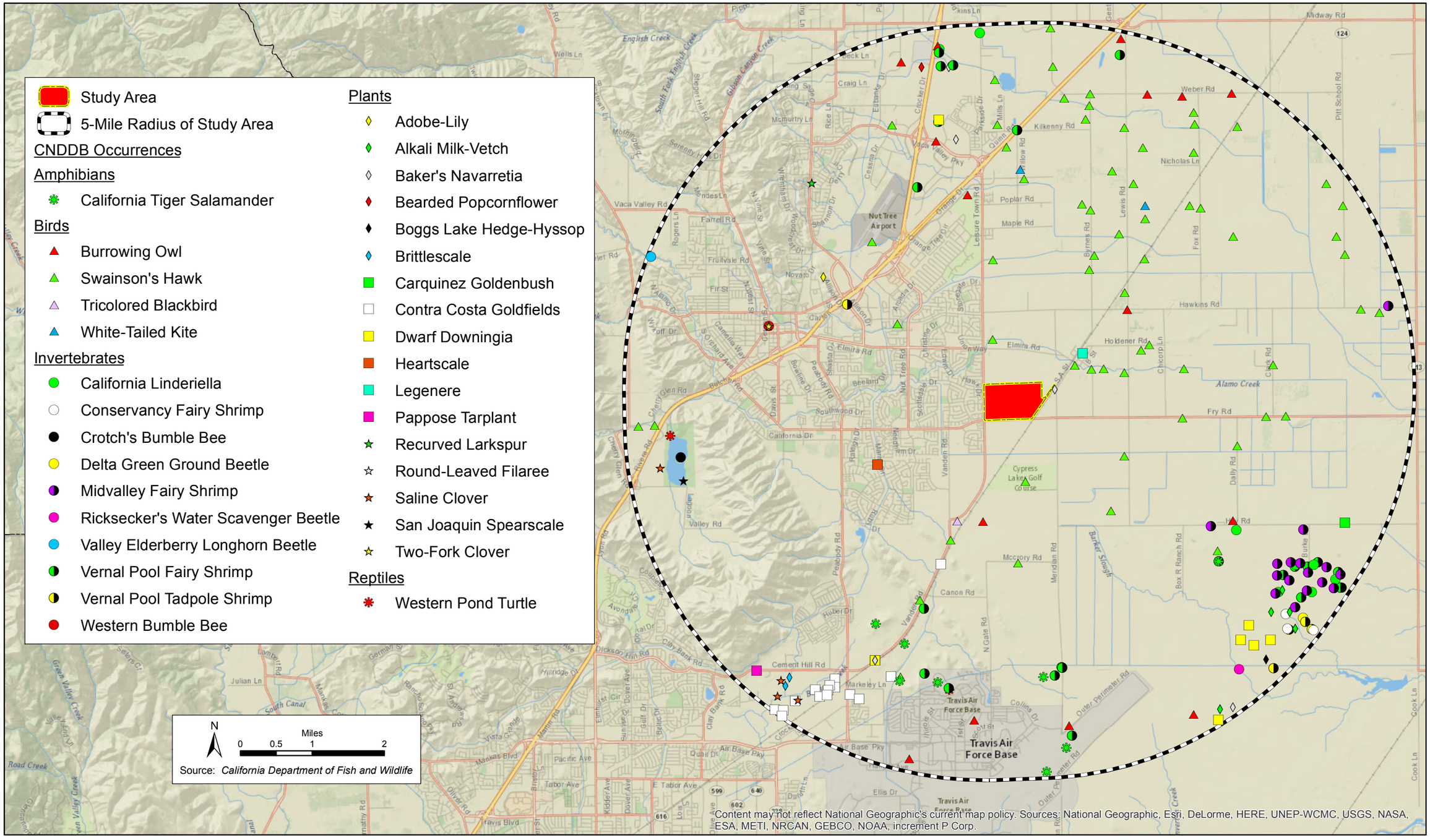
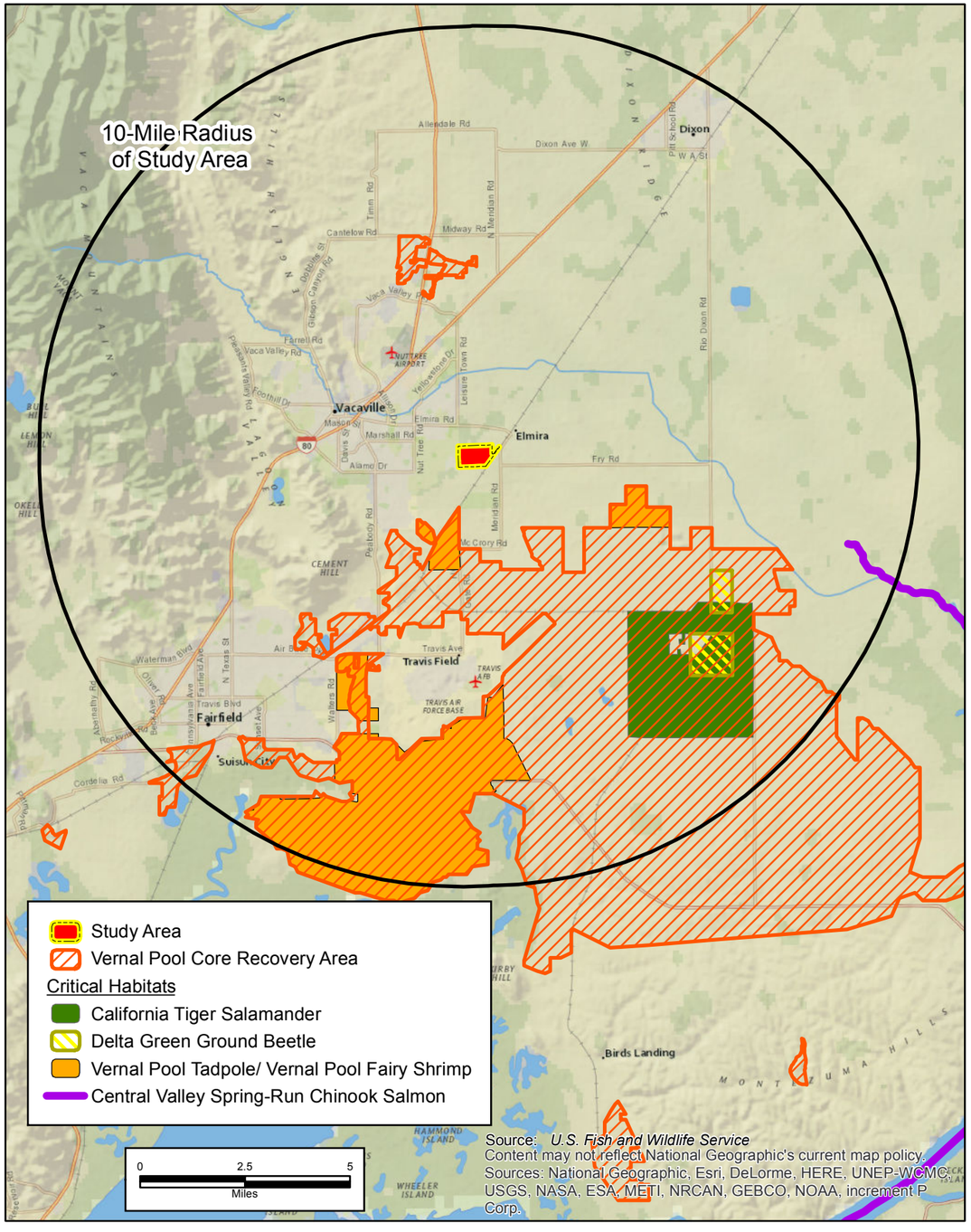


Figure 4
California Natural Diversity Database Occurrences



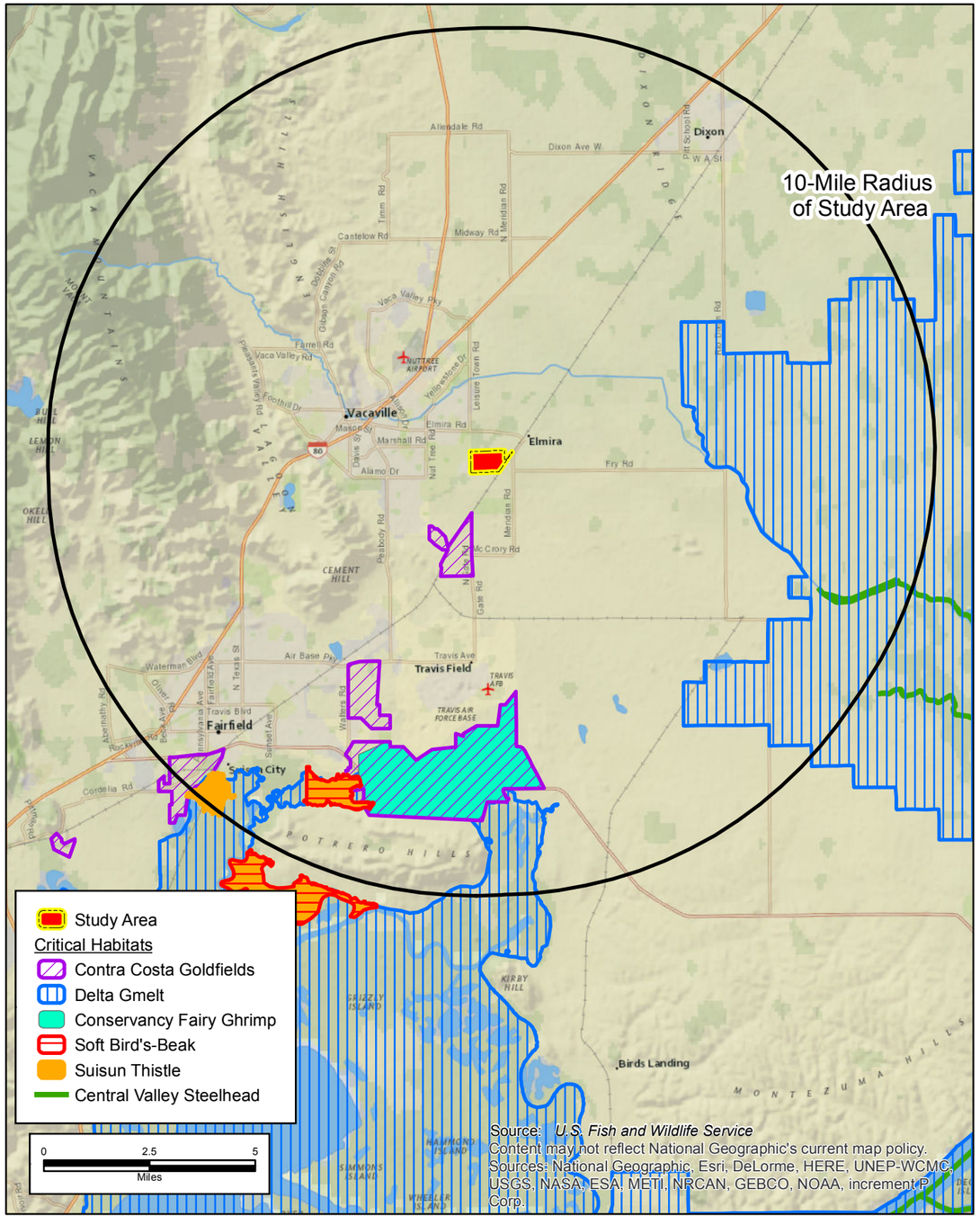
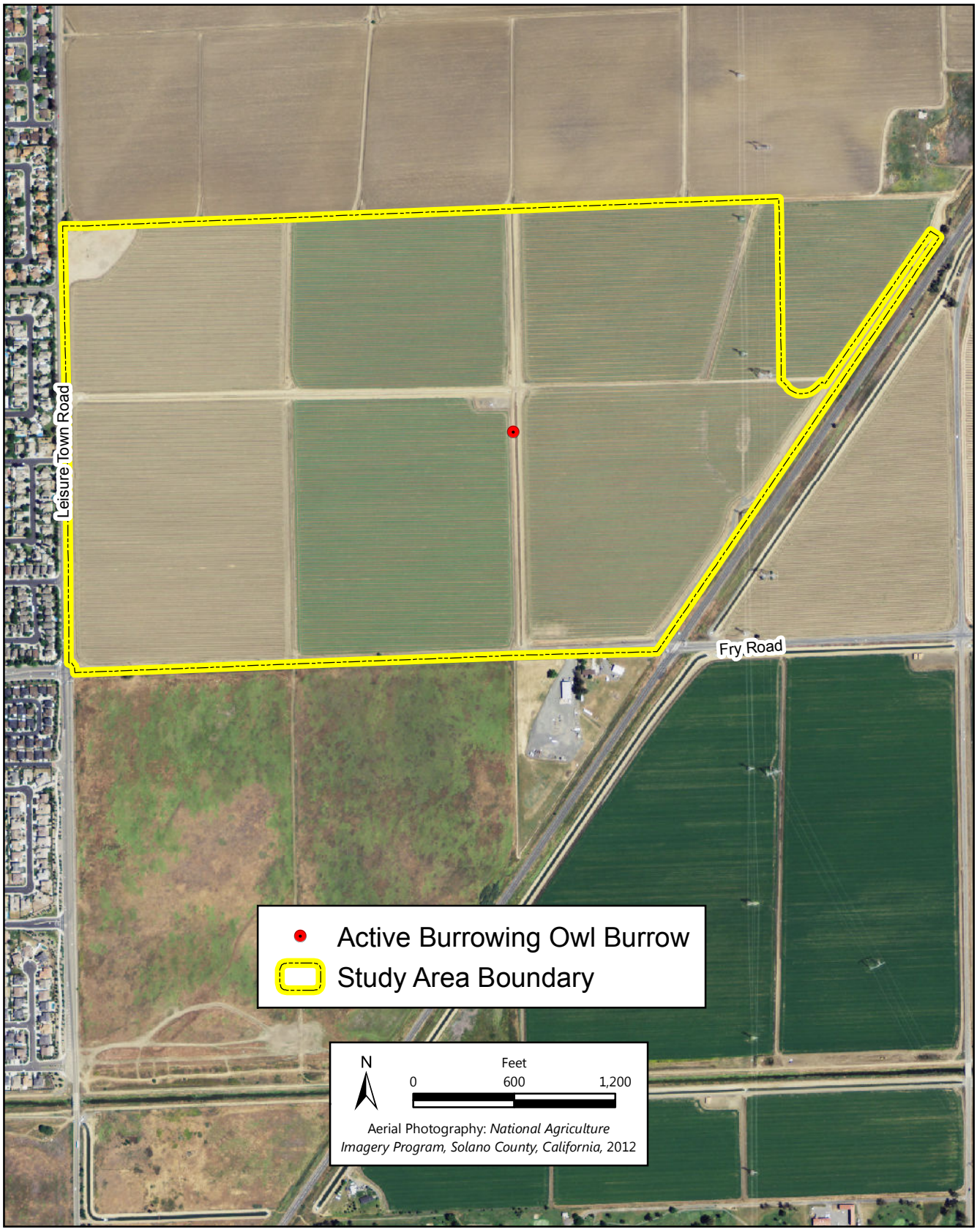


Figure 5
Critical Habitats & Vernal Pool Core Recovery Areas



Roberts' Ranch
Biological Resources Assessment
June 2016

Figure 6
Location of Active Burrowing Owl Burrow

Attachments

Attachment A: CNDDB List of Animal Species within Five Miles of the Study Area and Plants Documented in the CNDDB within the "Elmira, California" Quadrangle and 8 Surrounding Quadrangles

Attachment B: IPaC Trust Resource Report for the Roberts' Ranch Study Area

Attachment A

Attachment A: List of Animal Species within Five Miles of the Study Area and Plants Documented in the CNDDB within the "Elmira, California" Quadrangle and 8 Surrounding Quadrangles

Table 1. Special-Status Species with Potential to Occur within the Roberts' Ranch Study Area

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Plants				
Astragalus tener var. *ferrisiae* Ferris' milk-vetch	--	CRPR 1B.1	Meadows, seep, foothill and valley grasslands with subalkaline soils.	**No Habitat Present.** Alkaline soils are lacking.
Astragalus tener var. *tener* Ferris' milk-vetch	--	CRPR 1B.2	Alkaline playas, valley and foothill grasslands, and vernal pools. Also occurs in open, alkaline and seasonally moist meadows from 0 to 200 feet.	**No Habitat Present.** Alkaline soils are lacking.
Atriplex cordulata var. *codulata* Heartscale	--	CRPR 1B.2	Grows in grasslands with sandy alkaline or saline soils.	**No Habitat Present.** Alkaline soils are lacking.
Atriplex depressa Brittlescale	--	CRPR 1B.2	Meadows or grasslands with alkaline or saline clay soils.	**No Habitat Present.** Alkaline soils are lacking.
Atriplex persistens Vernal pool smallscale	--	CRPR 1B.2	Vernal pools or other seasonal wetlands with alkaline soils.	**No Habitat Present.** Alkaline soils are lacking; no vernal pools are present.
California macrophylla Round-leaved filaree	--	CRPR 1B.2	Clay soils in cismontane woodland and valley and foothill grassland, from 50 feet to 4,000 feet with vertic clay soils. Occasionally grows on serpentine soils.	**Low.** Although clay soils are present on-site, the area has been farmed continuously since at least the 1970s.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	--	CRPR 1B.1	Terraces, swales, floodplains, grasslands, and disturbed sites.	**Low.** The site contains the associated habitat type, though the area has been farmed continuously since at least the 1970s.
Centromadia parryi ssp. *parryi* Pappose tarplant	--	CRPR 1B.2	Favors coastal prairie, meadows, seeps, coastal salt marshes, and valley/foothill grasslands often with alkaline or saline soils.	**No Habitat Present.** The site is comprised of active agricultural lands that have been farmed actively since at least the 1970s.
Chloropyron molle ssp. *hispidum* Hispid bird's-beak	--	CRPR 1B.1	Seasonally flooded , saline-alkali soils often on the margins of brackish marshes.	**No Habitat Present.** Saline-alkaline soils are lacking.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Plants				
Chloropyron molle ssp. *molle* Soft bird's-beak	--	CRPR 1B.2	Grows in or near brackish or salt marshes.	**No Habitat Present.** No marshes are present.
Cicuta maculata var. *bolanderi* Bolander's water-hemlock	--	CRPR 2B.1	Brackish or freshwater marshes and swamps.	**No Habitat Present.** No marshes are present.
Cirsium hydrophilum var. *hydrophilum* Suisun thistle	FE	CRPR 1B.1	Salt marshes.	**No Habitat Present.** No marshes are present.
Delphinium recurvatum Recurved larkspur	--	CRPR 1B.2	Poorly drained, fine alkaline soils in grasslands or in valley saltbush or valley chenopod scrub.	**No Habitat Present.** Alkaline soils are lacking.
Downingia pusilla Dwarf downingia	--	CRPR 2B.2	Vernal pools.	**No Habitat Present.** The site lacks vernal pools.
Eriogonum truncatum Mt. Diablo buckwheat	--	CRPR 1B.1	Chaparral, coastal scrub, valley/foothill grasslands with dry and exposed sandy or clay soils.	**No Habitat Present.** The site lacks coastal scrub, chaparral, and grassland habitats.
Extriplex joaquiniana San Joaquin spearscale	--	CRPR 1B.2	Found in seasonal alkali wetlands or alkali sink scrub.	**No Habitat Present.** Alkaline wetlands and soils are not present.
Fritillaria liliacea Fragrant fritillary	--	CRPR 1B.2	Heavy soils, open hills and fields often near the coast. Also observed in vernal pools or grasslands.	**No Habitat Present.** The site is comprised of active agricultural lands that have been farmed actively since at least the 1970s.
Fritillaria pluriflora Adobe-lily	--	CRPR 1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, often on clay soils. Usually associated with serpentine soils of the interior foothills.	**No Habitat Present.** The site is comprised of active agricultural lands that have been farmed actively since at least the 1970s. The species has not been documented in the vicinity of the site for almost a century.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Plants				
Gratiola heterosepala Bogg's Lake hedge-hyssop	--	CE, CRPR 1B.2	Vernal pools and margins of lakes/ponds.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Hesperolinon breweri Brewer's western flax	--	CRPR 1B.2	Chaparral, cismontane woodland, valley and foothill grassland; often in rocky serpentine soil in serpentine chaparral and serpentine grasslands.	**No Habitat Present.** No chaparral, cismontane woodland, or grasslands are present. No serpentine soils are present.
Hibiscus lasiocarpus var. *occidentalis* Woolly rose-mallow	--	CRPR 1B.2	Freshwater wetlands/marshes including edges.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Isocoma arguta Carquinez golden bush	--	CRPR 1B.1	Prefers foothill/valley grasslands with alkaline soils. Seems to favor low benches near drainages.	**No Habitat Present.** Alkaline soils are not present.
Lasthenia conjugens Contra Costa goldfields	FE	CRPR 1B.1	Vernal pools or other seasonal wetlands.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	--	CRPR 1B.2	Freshwater or brackish marshes and swamps at or below 15 feet.	**No Habitat Present.** No marshes or swamps are present.
Legenere limosa Legenere	--	CRPR 1B.1	Vernal pools.	**No Habitat Present.** The site lacks the necessary seasonal water features to support this species.
Lepidium latipes var. *heckardii* Heckard's pepper-grass	--	CRPR 1B.2	Valley and foothill grasslands with alkaline soils.	**No Habitat Present.** Alkaline soils are not present.
Lilaeopsis masonii Mason's lilaeopsis	--	CR, CRPR 1B.1	Brackish or freshwater swamps, intertidal marshes, and riparian scrub at or below 35 feet.	**No Habitat Present.** The site lacks the necessary water features or riparian scrub to support this species.
Limosella subulata Delta mudwort	--	CRPR 2B.1	Freshwater and brackish marshes, swamps, or riparian scrub. Usually found in association with muddy banks in the Delta.	**No Habitat Present.** No marshes or swamps are present.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Plants				
Microseris paludosa Marsh microseris	--	CRPR 1B.2	Valley and foothill grassland, coastal scrub, closed-cone coniferous forest, or cismontane woodland. Also observed in vernal pools and moist meadows.	**No Habitat Present.** No grasslands, coastal scrub, forests, woodlands, vernal pools, or moist meadows are present.
Navarretia myersii ssp. *backeri* Baker's navarretia	--	CRPR 1B.1	Most commonly in vernal pools , but also on mud flats, edges of lakes.	**No Habitat Present.** No vernal pools, mud flats, or lakes are present.
Neostapfia colusana Colusa grass	FT	CE, CRPR 1B.1	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Orcuttia inaequalis San Joaquin Orcutt grass	FT	CE, CRPR 1B.1	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Plagiobothrys hystriculus Bearded popcorn-flower	--	CRPR 1B.1	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Puccinellia simplex California alkali grass	--	CRPR 1B.2	Saline flats, mineral springs, and wet areas with alkali soils including alkali vernal pools.	**No Habitat Present.** Saline or alkali soils are not present.
Sidalcea keckii Keck's checkerbloom	FE	CRPR 1B.1	Cismontane woodland, valley and foothill grassland; often found in serpentine soils at elevations between 240 and 2,150 feet.	**No Habitat Present.** Serpentine soils, woodlands, and grasslands are not present.
Stuckenia filiformis Slender-leaved pondweed	--	CRPR 2B.2	Marshes, swamps, and shallow clear water of lakes and drainage channels.	**Low.** Mashes, swamps, and clear lakes are absent. The irrigation ditches are seasonal maintained features and not likely to provide suitable habitat.
Symphyotrichum lentum Suisun Marsh aster	--	CRPR 1B.2	Fresh and salt water marshes, often associated with blackberries, cattails, and bulrush.	**No Habitat Present.** The site lacks marshes or swamps.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Plants				
Trifolium amoenum Two-fork clover	FE	CRPR 1B.1	Valley grasslands, low wet swales, and riparian wetlands.	**No Habitat Present.** No grasslands, wet swales or riparian wetlands are present. The species has not been documented in the vicinity of the site for over a century.
Trifolium hydrophilum Saline clover	--	CRPR 1B.2	Grows in salt marshes, swamps, and vernal pools with alkaline soils.	**No Habitat Present.** No marshes or swamps, vernal pools, or alkaline soils are present.
Tuctoria mucronata Crampton's tuctoria	FE	CE, CRPR 1B.1	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Viburnum ellipticum Oval-leaved viburnum	--	CRPR 2B.3	Chaparral and coniferous forest, often found on north-facing slopes.	**No Habitat Present.** No chaparral or coniferous forest are present.
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE	--	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Branchinecta lynchi Vernal pool fairy shrimp	FT	--	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Branchinecta mesovallensis Midvalley fairy shrimp	--	--	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	--	Dependent upon elderberry plant as primary host species.	**No Habitat Present.** No elderberry shrubs are present within the Project area.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Invertebrates				
Elaphrus viridis Delta green ground beetle	FT	--	Favors sandy mud substrate associated with the margins of vernal pools with low vegetative cover.	**No Habitat Present.** The site lacks the sandy mud substrates necessary to support this species.
Hydrochara rickseckeri Ricksecker's water scavenger beetle	--	--	Ponds, lakes, streams, rivers, vernal pools, and other freshwater features.	**Low.** Marginally suitable habitat for this species is present in the irrigation ditches on-site.
Lepidurus packardi Vernal pool tadpole shrimp	FE	--	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Linderiella occidentalis California linderiella	--	--	Vernal pools.	**No Habitat Present.** The site lacks the necessary water features to support this species.
Fish				
Hypomesus transpacificus Delta smelt	FT	CE	Adults are found in the brackish open surface waters of the Delta and Suisun Bay. Though spawning has never been observed, it is believed to occur in tidally influenced sloughs and drainages on the freshwater side of the mixing zone.	**No Habitat Present.** No creeks or rivers are present.
Oncorhynchus mykiss irideus Central Valley steelhead	FT	--	Anadromous species requiring freshwater water courses with gravelly substrates for breeding. The young remain in freshwater areas before migrating to estuarine and marine environments.	**No Habitat Present.** No creeks or rivers are present.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Amphibians				
Ambystoma californiense California tiger salamander	FT	CT, CSC	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	**No Habitat Present.** The site lacks the required wetlands to support breeding, and the site has been continuously farmed since at least the 1970s. The area is isolated from the nearest known population, the Hay Road Mitigation Bank which lies 2.8 miles SE, by roads and an active railroad line.
Rana draytonii California red-legged frog	FT	CSC	Breeds in permanent to semi-permanent aquatic habitats including lakes, ponds, marshes, creeks, and other drainages.	**No Habitat Present.** Project area is outside of the geographic range of the species. The closest CNDDB occurrence is over 13 miles to the NW.
Reptiles				
Emys marmorata Western pond turtle	--	CSC	Ponds, rivers, streams, wetlands, and irrigation ditches with associated marsh habitat.	**No Habitat Present.** The irrigation ditches are maintained features with controlled water releases.
Thamnophis gigas Giant garter snake	FT	CT	Rivers, canals, irrigation ditches, rice fields, and other aquatic habitats with slow moving water and heavy emergent vegetation.	**No Habitat Present.** The irrigation ditches are maintained features with controlled water releases that lack the required emergent vegetation.
Birds				
Rallus longirostris obsoletus California clapper rail	FE	CE	Prefers brackish or saltwater marshes associated with tidal sloughs and dominated by pickleweed.	**No Habitat Present.** The site lacks marshes or tidal sloughs.
Ixobrychus exilis *Least bittern*	--	CSC	Freshwater or brackish marsh with tall emergent vegetation.	**No Habitat Present.** The site lacks marshes or other wetlands with tall emergent vegetation.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Birds				
Agelaius tricolor Tricolored blackbird	USFWS BCC	CC, CSC	Historically, most colonies were established in freshwater marshes dominated by cattails (*Typha spp.*) and bulrushes (*Scirpus* or *Schoenoplectus spp.*). More recently, they have also nested in introduced mustards (*Brassica spp.*), blackberries (*Rubus spp.*), thistles (*Circium spp.*), and mallows (*Malva spp.*) in fields.	**No Habitat Present.** Marshes or dense mustard, blackberry, mallow, or thistle patches are not present.
Asio flammeus Short-eared owl	--	CSC	Typically found in open areas with few trees such as grasslands, prairies, dunes, meadows, and croplands.	**High.** Agricultural lands throughout the site represent suitable foraging habitat.
Athene cunicularia Burrowing owl	USFWS BCC	CSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats.	**Present.** The species was observed on-site utilizing an active burrow.
Buteo swainsoni Swainson's hawk	USFWS BCC	CT	Nests in large trees, preferably in riparian areas. Forages in fields, cropland, irrigated pasture, and grassland near large riparian corridors.	**Present.** Swainson's hawks were observed foraging the site; however, the site lacks trees large enough for nesting. No active nests were observed in the immediately surrounding areas.
Charadrius montanus Mountain plover	USFWS BCC	CSC	Short grass plains, low rolling grass hills, freshly plowed agricultural fields, and newly sprouting grain fields. Often associated with short vegetation and bare ground.	**Moderate.** Agricultural fields on-site represent suitable winter foraging habitat. The species is known locally to occasionally forage this type of habitat.
Circus cyaneus Northern harrier	--	CSC	Nests in emergent wetland/marsh, open grasslands, or savannah habitats. Forages in open areas such as marshes, agricultural fields, and grasslands.	**Present.** Northern harriers were observed foraging the site; however, no nests are present.
Elanus leucurus White-tailed kite	--	CFP	Open grasslands, fields, and meadows are used for foraging. Isolated trees in close proximity to foraging habitat are used for perching and nesting.	**Present.** White-tailed kites were observed foraging the site; however, the site lacks trees large enough for nesting. No active nests were observed in the immediately surrounding areas.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Birds				
Falco peregrinus anatum American peregrine falcon	FD, USFWS BCC	CD, CFP	Nests on cliff ledges, tall buildings, or other tall man-made structures near open areas for foraging.	**No Habitat Present.** No cliff ledges or tall buildings are present within the Project area or in the vicinity.
Haliaeetus leucocephalus Bald eagle	FD, USFWS BCC	CE, CFP	Nest in large trees within 1 mile of lakes, rivers, or larger streams.	**No Habitat Present.** Suitable large trees and aquatic features are not present.
Laterallus jamaicensis coturniculus California black rail	USFWS BCC	CT, CFP	Nests and forages in salt, brackish, and fresh marshes with abundant vegetative cover.	**No Habitat Present.** No marshes are present.
Lanius ludovicianus Loggerhead shrike	USFWS BCC	CSC	Occurs in open areas with sparse trees, shrubs, and other perches.	**High.** Agricultural lands throughout the site provide suitable foraging habitat.

Status Codes:

CC - CDFW Candidate for Listing
CE - CDFW Endangered
CFP - CDFW Fully Protected
CR - CDFW Rare
CRPR - California Rare Plant Rank
CSC - CDFW Species of Concern
CT - CDFW Threatened
FC - Candidate for Federal Listing
FD - Federally Delisted
FE - Federally Endangered
FP - Proposed for Federal Listing
FT - Federally Threatened
USFWS BCC - Bird of Conservation Concern
WBWG M - Western Bat Working Group Medium Threat Rank
WBWG H - Western Bat Working Group High Threat Rank

Attachment B

IPaC Trust Resource Report for the Roberts' Ranch Study Area

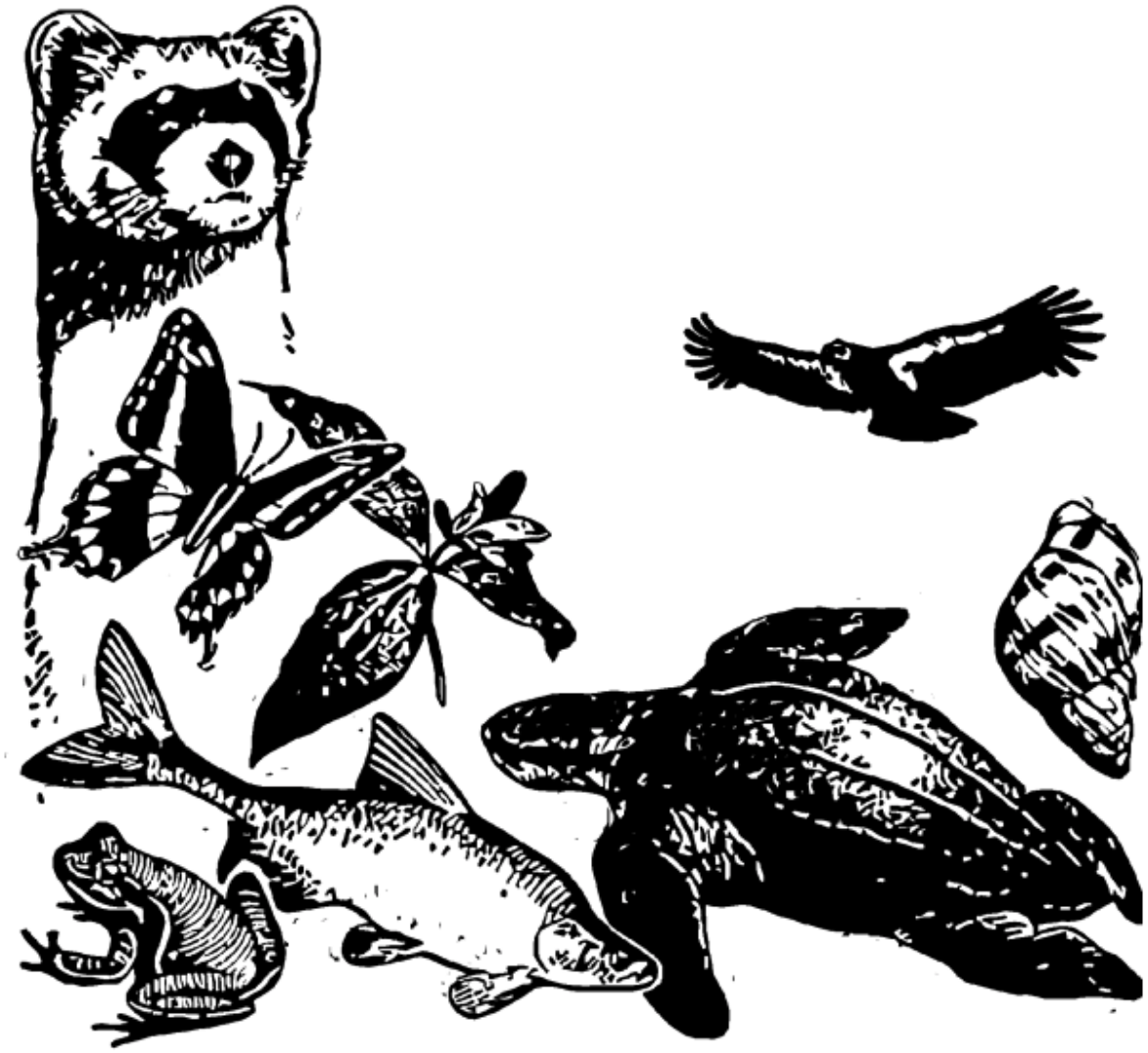
U.S. Fish & Wildlife Service

Roberts' Ranch

IPaC Trust Resources Report

Generated June 19, 2016 12:35 PM MDT, IPaC v3.0.7

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

Table of Contents

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

Roberts' Ranch

LOCATION

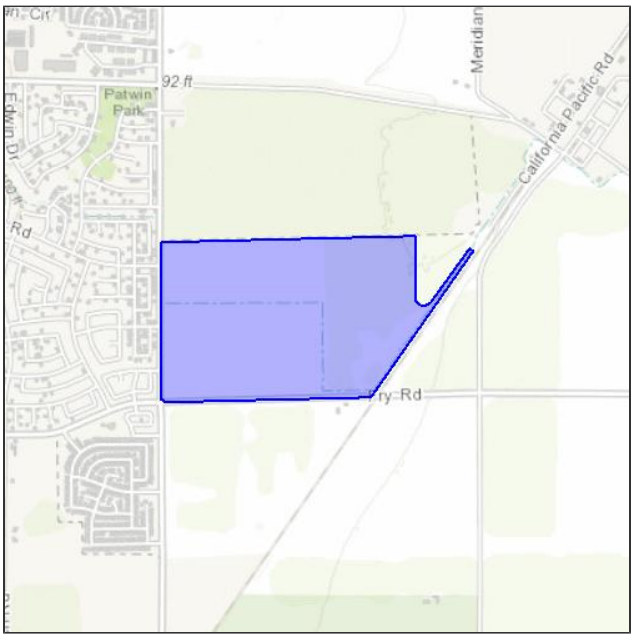
Solano County, California

DESCRIPTION

Residential Development

IPAC LINK

https://ecos.fws.gov/ipac/project/6N2CX-VAHJF-FUVKN-YE5V7-JOSSNM



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Amphibians

California Red-legged Frog Rana draytonii — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=D02D

California Tiger Salamander Ambystoma californiense — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=D01T

Birds

California Clapper Rail Rallus longirostris obsoletus — Endangered

CRITICAL HABITAT
No critical habitat has been designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B04A

Crustaceans

Conservancy Fairy Shrimp Branchinecta conservatio — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K03D

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K03G

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K048

Fishes

Delta Smelt Hypomesus transpacificus — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=E070

Steelhead Oncorhynchus (=Salmo) mykiss — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=E08D

Flowering Plants

Contra Costa Goldfields Lasthenia conjugens — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q122

San Joaquin Orcutt Grass Orcuttia inaequalis — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1ZP

Showy Indian Clover Trifolium amoenum — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q238

Insects

Delta Green Ground Beetle Elaphrus viridis — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I01G

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I01L

Reptiles

Giant Garter Snake Thamnophis gigas — Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=C057

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Bell's Sparrow Amphispiza belli — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HE

Black Rail Laterallus jamaicensis — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09A

Burrowing Owl Athene cunicularia — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Lawrence's Goldfinch Carduelis lawrencei — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8

Least Bittern Ixobrychus exilis
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL

Mountain Plover Charadrius montanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Short-billed Dowitcher Limnodromus griseus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JK

Short-eared Owl Asio flammeus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Swainson's Hawk Buteo swainsoni — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B070

Tricolored Blackbird Agelaius tricolor — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06P

Western Grebe aechmophorus occidentalis — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Yellow-billed Magpie Pica nuttalli — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0N8

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands in this location