# APPENDIX WD-MIDDLETOWN

WETLAND DELINEATION MIDDLETOWN

# Section 404 Aquatic Resources Report

## 21000 Santa Clara Road
## MIDDLETOWN, LAKE COUNTY, CALIFORNIA

**Prepared For:**
Lotusland Investment Holdings, Inc.
1 Embarcadero Center, Suite 730
San Francisco, California 94111

**WRA Contact:**
WRA, Inc.
2169-G East Francisco Boulevard
San Rafael, California 94901

**Contact:** Matt Richmond
richmond@wra-ca.com

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**WRA Project #:**
27162-1





2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel info@wra-ca.com www.wra-ca.com

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# 1.0 INTRODUCTION

## 1.1 Study Background

On October 22, 2018, WRA conducted a routine wetland delineation at 21000 Santa Clara Road, Middletown, Lake County, California (Study Area) (Figure 1) to determine the presence of potential wetlands and non-wetland waters (collectively referred to as "Waters of the U.S.") subject to federal jurisdiction under Section 404 of the Clean Water Act (CWA). This report presents the methods and results of the delineation.

All figures referenced in the text are included in Appendix A.

## 1.2 Regulatory Background

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act gives the Environmental Protection Agency (EPA) and the Corps regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States." Section 502(7) of the CWA defines "navigable waters" as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the CWA. A summary of the definition of "waters of the United States" in 33 CFR 328.3 (a) includes (1) waters used for commerce; (2) interstate waters and wetlands; (3) territorial seas; (4) impoundments of waters listed here; (5) tributaries to the above waters; (6) waters and wetlands adjacent to the above waters; and (7) prairie potholes, Carolina and Delmarva bays, Pocosins, western vernal pools, and Texas coastal prairie wetlands, provided these features have a significant nexus to the above listed waters[1]; (8) all waters located within the 100-year floodplain of waters listed above in items 1-3 or within 4,000 feet of the high tide line (HTL) or ordinary high water mark (OHWM) of a water listed above in items 1-5, provided those waters are determined to have a significant nexus to waters identified in items 1-3 above. For purposes of the determining Corps jurisdiction under the CWA, "navigable waters" as defined in the CWA are the same as "waters of the U.S." defined in 33 CFR 328.3.

Areas not considered to be "waters of the United States" as defined in 33 CFR 328.3 (b), are summarized as follows: (1) waste treatment systems; (2) prior converted cropland; (3) specific classes of ditches, including (i) ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary, (ii) ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands, and (iii) ditches that do not flow, either directly or through another water, into a water identified in 33 CFR 328.3 paragraphs (a) (1) through (3); (4) artificially irrigated areas that would otherwise revert to dry land and manmade aquatic features in otherwise dry land such as stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, cooling ponds, reflecting pools, swimming pools, small ornamental waters, depressions incidental to mining and construction activity, erosional features, and puddles; (5) groundwater; (6) stormwater control features; (7)

[1] Wetlands and non-wetland waters in this category are similarly situated and are combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of 33 CFR 328.3.

wastewater recycling structures, groundwater recharge basins, percolation ponds for wastewater recycling, and distribution networks for wastewater recycling.

### *1.2.1 Wetlands*

Wetlands are defined in 33 CFR 328.3 (c) as:

> *…those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*

The basis for determining whether a given area is a wetland for the purposes of Section 404 of the CWA is outlined in the Corps *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers* Delineation Manual for the respective region. As defined in 33 CFR 328.4 (c), the extent of federal jurisdiction within wetlands is defined as extending to the limit of the wetland as determined using the methods outlined in the manuals.

### *1.2.2 Non-Wetland Waters*

The limit of federal jurisdiction in non-tidal non-wetland waters extends to the OHWM which is defined in 33 CFR 328.3 (e) as:

> *...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

## 2.0 SUMMARY OF POTENTIAL JURISDICTIONAL AREAS

Figure 2 in Appendix A depicts the extent of Corps jurisdiction within the Study Area based on a wetland delineation conducted by WRA on October 22, 2018. The acreage of potential Section 404 jurisdictional areas is summarized in Table 1 below.

Table 1. Summary of Potential Section 404 Jurisdictional Areas within the Study Area

| Habitat Type | Size | "Potentially Isolated" Areas (acres) | Potential Jurisdictional Waters of the U.S. |
|---|---|---|---|
| Non-Wetland Waters: | | | |
| Intermittent Stream (within OHWM) | 0.41 ac (227 l.f.) | 0 | 0.41 ac (227 l.f.) |
| **TOTAL** | | | **0.41 ac (227 l.f.)** |

## 3.0 METHODS

Prior to conducting field surveys, reference materials were reviewed, including the Soil Survey of Lake County (USDA 1989), online soil data (CSRL 2018, USDA 2018a), National Wetland Inventory (NWI) data (USFWS 2018), rainfall data (NRCS 2019), regional precipitation data (NCRS 2018b), the Middletown USGS 7.5' quadrangle (USGS 2018), and aerial photos of the site (Google Earth 2018).

A focused evaluation of indicators of wetlands and non-wetland waters was performed in the Study Area on October 22, 2018. The methods used in this study to delineate jurisdictional wetlands and non-wetland waters are based on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* ("Corps Manual"; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* ("Arid West Supplement"; Corps 2008). The routine method for wetland delineation described in the Corps Manual was used to identify areas potentially subject to Corps Section 404 jurisdiction within the Study Area. A general description of the Study Area, including plant communities present, topography, and land use was also generated during the delineation visit. The methods for evaluating the presence of wetlands and non-wetland waters employed during the site visit are described in detail below.

### 3.1 Potential Section 404 Waters of the U.S.

#### *3.1.1 Wetlands*

The Study Area was evaluated for the presence or absence of indicators of the three wetland parameters described in the Corps Manual (Environmental Laboratory 1987) and Arid West Supplement (Corps 2008).

Section 328.3 of the Federal Code of Regulations defines wetlands as:

*"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

EPA, 40 CFR 230.3 and CE, 33 CFR 328.3 (b)

The three parameters used to delineate wetlands are the presence of: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps Manual, for areas not considered "problem areas" or "atypical situations":

*"....[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland determination."*

Data on vegetation, hydrology, and soils collected at sample points during the delineation site visit was reported on Arid West Supplement data forms. Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using GPS equipment and mapped on a topographic map. The areas of potential jurisdictional wetlands were measured digitally using ArcGIS software. Indicators described in the Arid West Supplement were used to make wetland determinations at each sample point in the Study Area and are summarized below.

Vegetation

Plant species observed in the Study Area were identified using the Jepson Manual, Second Edition (Baldwin et al. 2012) and the Jepson eFlora (Jepson Flora Project 2018). Plants were assigned a wetland indicator status according to the National Wetland Plant List (NWPL; Lichvar 2016). Where differences in nomenclature occur between the Jepson Manual or the Jepson eFlora, and the NWPL, the species name as it occurred in the NWPL is listed in brackets. Other relevant synonyms may also be provided in brackets.

Wetland indicator statuses listed in the NWPL are based on the expected frequency of occurrence in wetlands as follows:

| Indicator Status | Definition | Hydrophytic Species? (Y/N) |
|---|---|---|
| Obligate (OBL) | Almost always is a hydrophyte, rarely in uplands | Y |
| Facultative Wetland (FACW) | Usually is a hydrophyte but occasionally found in uplands | Y |
| Facultative (FAC) | Commonly occurs as either a hydrophyte or non-hydrophyte | Y |
| Facultative Upland (FACU) | Occasionally is a hydrophyte but usually occurs in uplands | N |
| Upland/Not Listed (UPL/NL) | Rarely is a hydrophyte, almost always in uplands | N |

The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Supplement. The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the "50/20 rule" (Indicator 1; Dominance Test) described in the manual. To apply the "50/20 rule", dominant species are chosen independently from each stratum of the community. Dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total vegetative cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The prevalence index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate the Prevalence Index using the following formula, where A equals total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion. However, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. If more than 50 percent of the individuals of a FACU species have morphological adaptations for life in wetlands, that species is considered to be a hydrophyte and its indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using a FAC indicator status for this species. The sample point meets the hydrophytic vegetation criterion if either test is satisfied.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains 16 primary

hydrology indicators and 10 secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

> *"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part."*
>
> Federal Register July 13, 1994,
> U.S. Department of Agriculture, NRCS

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, generally designated 0, 1, or 2, used to identify them as hydric, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators that can be used to determine whether a soil is hydric for the purposes of wetland delineation are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2010). The Arid West Supplement provides a list of 23 of these hydric soil indicators which are known to occur in the Arid West region. Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the 23 hydric soil indicators described in the Arid West Supplement.

### *3.1.2 Non-Wetland Waters*

This study also evaluated the presence of non-wetland waters potentially subject to U.S. Army Corps of Engineers jurisdiction under Section 404 of the Clean Water Act. Non-wetland areas subject to Corps jurisdiction include lakes, rivers and streams (including intermittent streams) in addition to all areas below the HTL in areas subject to tidal influence. Jurisdiction in non-tidal areas extends to the ordinary high water mark (OHW) defined as:

> "*...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*"
>
> Federal Register Vol. 51, No. 219,
> Part 328.3 (e). November 13, 1986

Identification of the ordinary high water mark followed the Corps Regulatory Guidance Letter No. 05-05, *Ordinary High Water Mark Identification* (Corps 2005).

## 4.0 STUDY AREA DESCRIPTION

The Study Area is approximately 13.33 acres and is located in Middletown, Lake County California (Figure 1). The site is generally flat, with an elevation of approximately 1,098 feet WGS84. The Study Area is bound on the east and south by residential parcels, to the north by ruderal grassland and to the west by Dry Creek, a tributary of Putah Creek which flows into the Sacramento River, a Traditional Navigable Water (TNW).

A majority of the Study Area was burned in the Valley Fire of September 2015; the fire intensity was at a level which charred trees and large shrubs and cleared the herbaceous layer. The property is not developed. Portions of the site appear to be regularly disced to create fire breaks with the neighboring parcels. Regional land-uses include residential and commercial (Google Earth 2019). Historically, the region was likely open rangeland composed of small ranches.

Vegetation

Vegetation within the Study Area is composed of native and non-native grasslands and small patches of oak woodland, with a narrow band of riparian scrub associated with Dry Creek. The non-native grasslands are dominated by non-native grasses including wild oat (*Avena barbata*, NL), soft chess (*Bromus hordeaceus*, FACU), medusa head (*Elymus caput-medusae*, NL), and rye (*Secale* sp., NL). Non-native forbs including vetch (*Vicia* spp., FACU), rose clover (*Trifolium hirtum*, NL), western filaree (*Erodium moschatum*, NL), big heron bill (*Erodium botrys*, FACU), and yellow star thistle (*Centaurea solstitialis*, NL) are characteristically present within the non-native grassland. The native grassland is dominated by squirreltail grass (*Elymus multisetus*, NL) with California poppy (*Eschscholzia californica*, NL), California plantago (*Plantago erecta*, NL), tarweed (*Hemizonia congesta* ssp. *clevelandii*, NL.), q-tips (*Micropus californicus*, FACU), soft chess, purple flower owl's clover (*Castilleja exserta*, NL) as associated species. The oak woodland is dominated by valley oak (*Quercus lobata*, FACU) with non-native grassland understory. The riparian scrub is characterized by arroyo willow thickets. The riparian scrub was burned during the Valley Fire and is returning, forming woody thickets mixed with open herbaceous areas. The herbaceous areas have dense cover of wetland species including tall cyperus (*Cyperus eragrostis*, FACW), iris-leaved rush (*Juncus xiphioides*, OBL), fiddleleaf dock (*Rumex pulcher*, FAC), annual beard grass (*Polypogon monspeliensis*, FACW), and western goldenrod (*Euthamia occidentalis*, FACW).

Hydrology

The primary hydrologic sources are direct precipitation and consequent sheet flow, as well as channelized stream flow within the creek. Dry Creek, an intermittent stream located along the western boundary of the Study Area, captures water from the Study Area and moves it downstream approximately 0.39 miles northeast to Putah Creek which eventually enters Lake Berryessa before flowing into the Sacramento River via the Yolo Bypass.

Precipitation predominantly falls as rainfall with an annual average for Middletown of 44.1 inches. Precipitation-bearing weather systems are predominantly from the west and south with

the majority of rain falls between November and March, with a combined average of 36.95 inches (NRCS 2019).

Soils

The overall topography of the Study Area is flat, and elevations are at approximately 1,100 feet above sea level. According to the *Soil Survey of Lake County* (USDA 1989), the Study Area is underlain by three soil mapping units: Kelsey Fine Sandy Loam, Talmage Very Gravelly Sandy Loam, and Xerofluvents, Very Gravelly. The parent soil series of these mapping units are summarized below. Figure 3 in Appendix A depicts the extent of each soil type.

**Kelsey series:** This series consists of very deep fine sandy loam that formed in alluvium from mixed rock sources situated on floodplains ranging from 900 to 1,600 feet. Soil pH is neutral (7.0) to slightly alkaline (7.4). These soils are listed as hydric in Lake County, but are well drained with very slow runoff and moderately rapid permeability and did not display field indicators of hydric soils. Native vegetation includes annual grasses and forbs with scattered valley oaks (*Quercus lobata*). A typical pedon contains an A horizon of fine sandy loam from 0 to 11 inches in depth with colors consisting of very dark greyish brown (10YR 3/2). The A horizon is underlain by a series of sandy loam alluvial depositional layers from 11 inches to 60 inches in depth. (USDA 1989, CSRL 2019).

**Talmage Series:** This series consist of very deep gravelly sandy loam formed in alluvium from mixed rock alluvial fans and plains at elevations ranging from 350 to 1,800 feet. Soil pH is slightly acidic (6.5) to neutral (7.0). These soils are listed as hydric in Lake County, but are somewhat excessively drained with slow to medium runoff and moderately rapid permeability and did not display field indicators of hydric soils. Native vegetation typically includes annual grasses and forbs with scattered oaks (*Quercus* spp.). A typical pedon contains an A horizon of gravelly or very gravelly sandy loam from 0 to 19 inches in depth with colors consisting of very dark greyish brown (10YR 3/2) to dark brown (10YR 3/3) and a C horizon of extremely gravelly coarse sandy loam from 19 to 66 inches below the surface with colors consisting of dark brown (10YR 4/3) (USDA 1989, CSRL 2019).

**Xerofluvents Very Gravelly:** This map unit consist of very deep, excessively drained soils formed from gravelly alluvium from mixed rock on narrow floodplains adjacent to stream channels.. These soils are listed as hydric in Lake County, but have very slow runoff with rapid permeability and did not display field indicators of hydric soils. Native vegetation typically includes vinegar weed (*Trichostema* spp.), foxtail fescue (*Festuca myuros*), and filaree (*Geranium* spp.) (USDA 1989).

## 5.0 RESULTS

Potential Waters of the U.S. are described in the following sections and depicted on Figure 2 in Appendix A. Vegetation, soils and hydrology data collected during delineation site visits are reported on standard Corps Arid West Region data forms provided in Appendix B. Photos of representative portions of the Study Area and sample points are shown in Appendix C. A list of plant species observed during the site visit is included in Appendix D.

## 5.1 Potential Section 404 Waters of the U.S

### *5.1.1 Wetlands*

The riparian scrub is the only location within the Study Area dominated by hydrophytic vegetation. However, soils did not display field indicators of hydric soils and indicators of wetland hydrology were not observed, therefore the riparian scrub was not considered wetland. No other areas within the Study Area contained any of the three parameters; upland sample points were taken to document upland conditions. Besides the riparian scrub vegetation, no areas within the Study Area showed indicators of wetlands.

### *5.1.2 Non-Wetland Waters*

Approximately 227 linear feet of Dry Creek is located along the western boundary of the Study Area. The OHWM is approximately 60 to 90 feet in width, with a gravelly, unvegetated bed. No water was observed within the stream during the October site visit. Features used to delineate the OHWM included absence of vegetation, shelving, wrack, and scour. The banks are steep to somewhat steep, consisting of sand and soil, ranging from 5 to 8 feet in height.

# 6.0 POTENTIAL CORPS OF ENGINEERS JURISDICTION

The 13.33 acre Study Area has no wetlands and 0.41 acre (227 linear feet) of non-wetland waters that may be considered jurisdictional under Section 404 of the Clean Water Act. The riparian scrub vegetation was the only area meeting hydrophytic vegetation and no areas containing hydric soil or hydrology indicators were observed. Dry Creek has clear indicators of an OWHM and is a tributary to a “navigable waters of the U.S.” and therefore meets the definition of a Waters of the U.S. under Section 404 of the Clean Water Act.

The conclusion of this delineation is based on conditions observed at the time of the field surveys conducted on October 22, 2018.

## 7.0 REFERENCES


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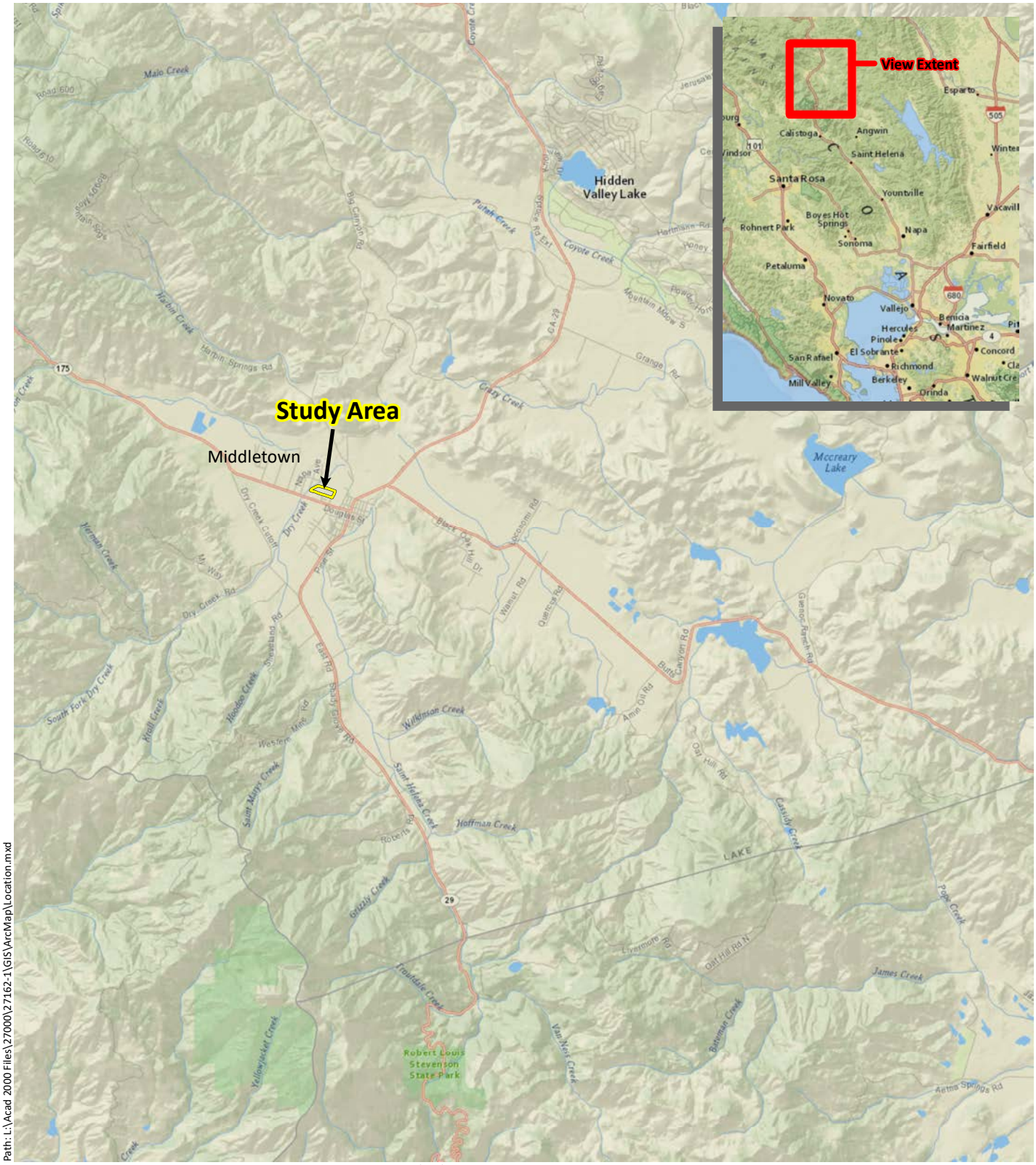
[USDA] U.S. Department of Agriculture, National Resource Conservation Service (NRCS). 2018b. Official List of US Hydric Soils.

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# Appendix A
# Figures




Path: L:\Acad 2000 Files\27000\27162-1\GIS\ArcMap\Location.mxd

**Sources**: National Geographic, WRA | Prepared By: mrochelle, 2/22/2019

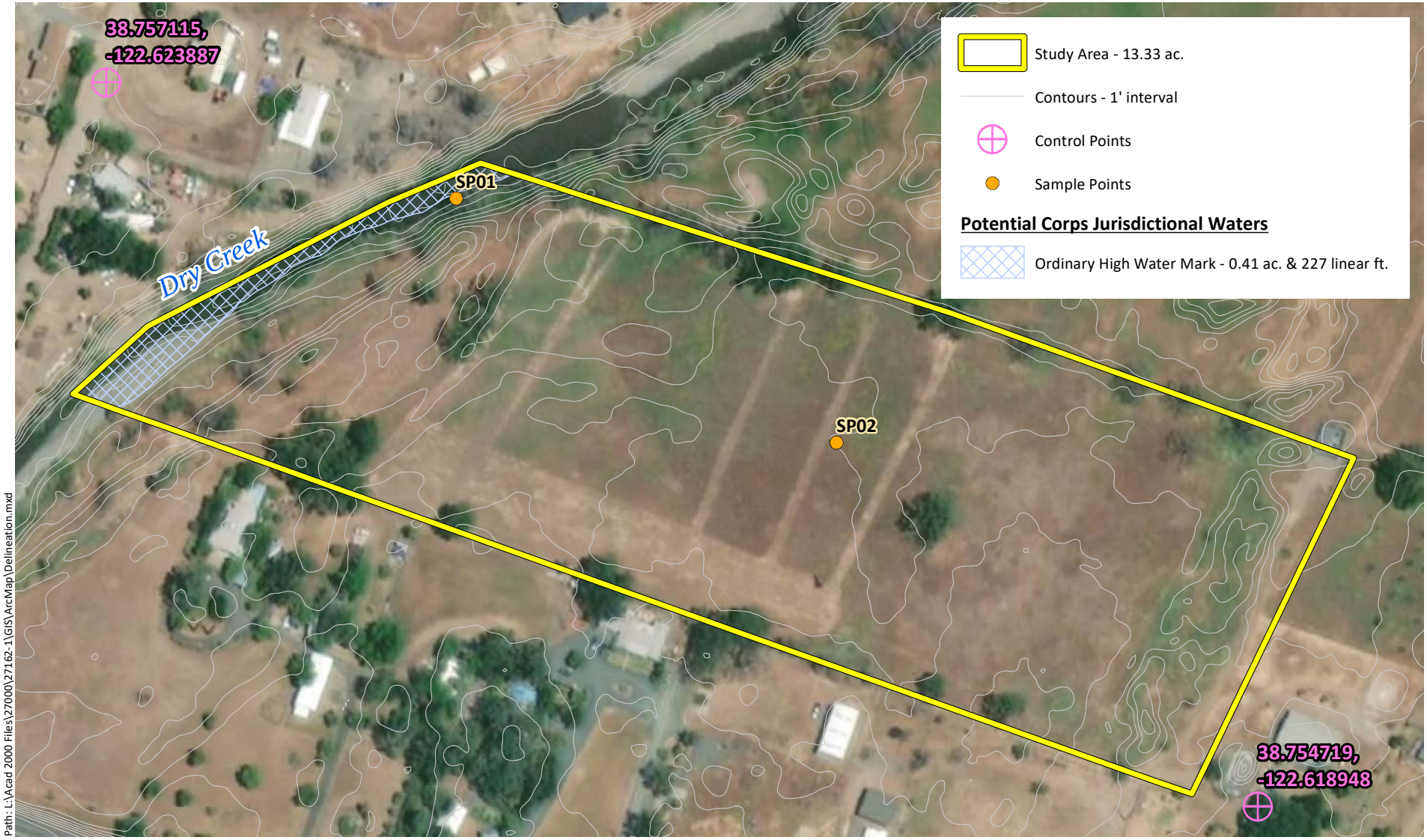
# Figure 1. Study Area Location

21000 Santa Clara Road
Middletown, Lake County, California

0 1 2 Miles

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**Sources**: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 5/2/2019

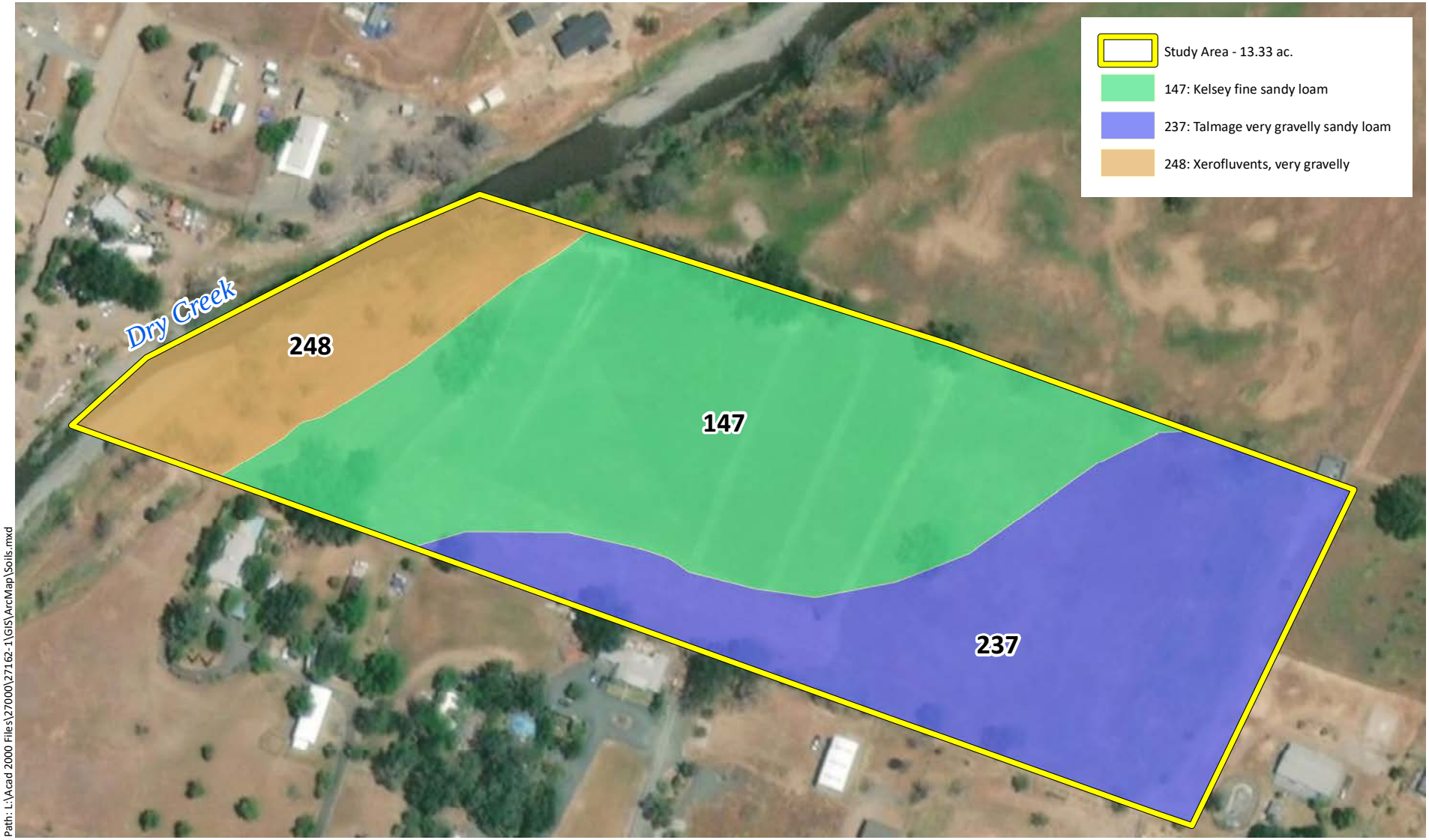
## Figure 2. Potential Jurisdictional Waters of the U.S.

21000 Santa Clara Road
Middletown, Lake County, California

0 200 400 Feet

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**Sources**: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 2/22/2019

## Figure 3. Soils Mapped within the Study Area

21000 Santa Clara Road
Middletown, Lake County, California

0 200 400 Feet

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**Appendix B**
**Arid West Wetland Delineation Data Sheets**

# Wetland Determination Data Form - Arid West Region

Project/Site 21000 Santa Clara Road (27162-1) City Middletown County Lake Sampling Date 10/22/2018

Applicant/Owner Lotusland Investment Holdings, Inc. State CA Sampling Point **SP-01**

Investigator(s) T. Harris, M. Weidenbach (WRA, Inc.) Section,Township,Range

Landform (hillslope, terrace, etc.) stream terrace Local Relief (concave, convex, none) None Slope(%) 1

Subregion(LRR) LRR C (Medit. CA) Lat: 38.756736 Long: -122.622389 Datum: WGS 84

Soil Map Unit Name Xerofluvents NWI classification none

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

**SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soil Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No

**Is the Sampled Area within a Wetland?** ☐ **Yes** ☒ **No**

**Remarks:** Sample point located on sandy terrace on the bank of Dry Creek within the riparian vegetation. Hydrophytic vegetation was present; however, indicators of hydric soils and wetland hydrology were not observed. Sample point was determined to be upland.

## VEGETATION (use scientific names)

| TREE STRATUM **Plot Size:** N/A | Absolute % cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| **Tree Stratum Total Cover:** | | | |
| SAPLING/SHRUB STRATUM **Plot Size:** 10'x10' | | | |
| 1. *Salix lasiolepis* | 30 | Y | FACW |
| 2. *Fraxinus latifolia* | 10 | Y | FACW |
| 3. | | | |
| 4. | | | |
| **Sapling/Shrub Stratum Total Cover:** | 40 | | |
| HERB STRATUM **Plot Size:** 10'x10' | | | |
| 1. *Polypogon monspeliensis* | 35 | Y | FACW |
| 2. *Melilotus indicus* | 25 | Y | FACU |
| 3. *Artemisia douglasiana* | 15 | | FAC |
| 4. *Euthamia occidentalis* | 15 | | FACW |
| 5. *Rumex pulcher* | 3 | | FAC |
| 6. *Epilobium sp.* | 1 | | - |
| 7. *Xanthium strumarium* | 1 | | FAC |
| 8. | | | |
| **Herb Stratum Total Cover:** | 95 | | |
| WOODY VINE STRATUM **Plot Size:** N/A | | | |
| 1. | | | |
| 2. | | | |
| **Woody Vines Total Cover:** | | | |

% Bare ground in herb stratum 5 % cover of biotic crust

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC? 3 (A)

Total number of dominant species across all strata? 4 (B)

% of dominant species that are OBL, FACW, or FAC? 75 (A/B)

**Prevalence Index Worksheet**

| Total % cover of: | Multiply by: |
|---|---|
| OBL species | x1 |
| FACW species | x2 |
| FAC species | x3 |
| FACU species | x4 |
| UPL species | x5 |
| Column Totals (A) | (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators**

☒ Dominance Test is >50%
☐ Prevalence Index is </= 3.0[1]
☐ Morphological adaptations (provide supporting data in remarks)
☐ 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:** Vegetation meets the Dominance Test for hydrophytic vegetation.

## SOIL

**Sampling Point** SP-01

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[1] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Sand | No redox observed |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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]:**

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

**Type:** _____

**Depth (inches):** _____

**Hydric Soil Present ?** ☐ **Yes** ☒ **No**

**Remarks:** No indicators of hydric soils were observed.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface water present? ☐ Yes ☒ No Depth (inches): _____

Water table present? ☐ Yes ☒ No Depth (inches): _____

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

**Wetland Hydrology Present ?** ☐ **Yes** ☒ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No indicators of hydrology were observed, although vegetation meets FAC-neutral test.

# Wetland Determination Data Form - Arid West Region

Project/Site 21000 Santa Clara Road (27162-1) City Middletown County Lake Sampling Date 10/22/2018

Applicant/Owner Lotusland Investment Holdings, Inc. State CA Sampling Point **SP-02**

Investigator(s) T. Harris, M. Weidenbach (WRA, Inc.) Section,Township,Range

Landform (hillslope, terrace, etc.) terrace Local Relief (concave, convex, none) None Slope(%) 1

Subregion(LRR) LRR C (Medit. CA) Lat: 38.755928 Long: -122.620758 Datum: WGS 84

Soil Map Unit Name Kelsey fine sandy loam NWI classification None

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

**SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

**Is the Sampled Area within a Wetland?** ☐ **Yes** ☒ **No**

**Remarks:** Sample point located within grassland habitat. No indicators of hydrophytic vegetation, hydric soils, or weltand hydrololgy were observed. Sample point was determined to be upland.

## VEGETATION (use scientific names)

| TREE STRATUM Plot Size: N/A | Absolute % cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Tree Stratum Total Cover: | | | |
| SAPLING/SHRUB STRATUM Plot Size: N/A | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Sapling/Shrub Stratum Total Cover: | | | |
| HERB STRATUM Plot Size: 10'x10' | | | |
| 1. *Bromus hordeaceus* | 40 | Y | FACU |
| 2. *Avena barbata* | 10 | | NL |
| 3. *Elymus caput-medusea* | 10 | | NL |
| 4. *Clarkia sp.* | 5 | | - |
| 5. *Elymus multisetus* | 3 | | NL |
| 6. *Erodium botrys* | 2 | | FACU |
| 7. *Trichostema lanceolatum* | 2 | | FACU |
| 8. *Centaurea solstalis* | 2 | | NL |
| Herb Stratum Total Cover: | 75 | | |
| WOODY VINE STRATUM Plot Size: N/A | | | |
| 1. | | | |
| 2. | | | |
| Woody Vines Total Cover: | | | |

% Bare ground in herb stratum 25 % cover of biotic crust

**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)

% of dominant species that are OBL, FACW, or FAC? 0 (A/B)

**Prevalence Index Worksheet**

| Total % cover of: | Multiply by: | |
|---|---|---|
| OBL species | x1 | |
| FACW species | x2 | |
| FAC species | x3 | |
| FACU species | x4 | |
| UPL species | x5 | |
| Column Totals (A) | | (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators**

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is </= 3.0[1]
- ☐ Morphological adaptations (provide supporting data in remarks)
- ☐ 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:** Bromus diandrus (NL) 1 percent cover. Vegetation does not meet Dominance Test.

## SOIL

**Sampling Point** SP-02

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[1] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1-6 | 7.5YR 3/2 | 100 | | | | | clay | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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]:**

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

**Type:** Gravel/shovel refusal

**Depth (inches):** 6

**Hydric Soil Present ?** ☐ Yes ☒ No

**Remarks:** No indicators of hydric soils were observed.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface water present? ☐ Yes ☒ No Depth (inches): _____

Water table present? ☐ Yes ☒ No Depth (inches): _____

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

**Wetland Hydrology Present ?** ☐ Yes ☒ No

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No indicators of wetland hydrology were observed.

# Appendix C
# Representative Photographs of the Study Area



Photo 1. Photo looking northeast (downstream) along Dry Creek.



Photo 2. Photo showing the riparian vegetation along Dry Creek.



Photo 3. Photo showing the soils at SP-01. No indicators of hydric soils were observed.



Photo 4. Photo showing sample point location within the riparian vegetation.



Photo 5. Photo looking northeast at SP-02.



Photo 6. Photo looking west at SP-02.

# Appendix D
# Plant Species Observed in the Study Area

**Appendix D:** Plant Species Observed within the Study Area.

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Acmispon americanus* var. *americanus* | Spanish lotus | native | annual herb | - | - | UPL |
| *Acmispon brachycarpus* | Short podded lotus | native | annual herb | - | - | - |
| *Acmispon wrangelianus* | Chilean trefoil | native | annual herb | - | - | - |
| *Aegilops cylindrica* | Jointed goatgrass | non-native | annual grass | - | Watch | - |
| *Agoseris heterophylla* | Mountain dandelion | native | annual herb | - | - | - |
| *Ailanthus altissima* | Tree of heaven | non-native (invasive) | tree | - | Moderate | FACU |
| *Aira caryophyllea* | Silvery hairgrass | non-native | annual grass | - | - | FACU |
| *Ancistrocarphus filagineus* | Woolly fishhooks | native | annual herb | - | - | - |
| *Aphanes occidentalis* | Ladie's mantle | native | annual, perennial herb | - | - | - |
| *Artemisia douglasiana* | California mugwort | native | perennial herb | - | - | FAC |
| *Avena barbata* | Slim oat | non-native (invasive) | annual, perennial grass | - | Moderate | - |
| *Baccharis pilularis* | Coyote brush | native | shrub | - | - | - |
| *Brassica nigra* | Black mustard | non-native (invasive) | annual herb | - | Moderate | - |
| *Brickellia californica* | California brickellia | native | perennial herb | - | - | FACU |

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Briza minor* | Little rattlesnake grass | non-native | annual grass | - | - | FAC |
| *Brodiaea elegans* ssp. *elegans* | Harvest brodiaea | native | perennial herb | - | - | FACU |
| *Bromus diandrus* | Ripgut brome | non-native (invasive) | annual grass | - | Moderate | - |
| *Bromus hordeaceus* | Soft chess | non-native (invasive) | annual grass | - | Limited | FACU |
| *Bromus madritensis* | Foxtail chess, foxtail brome | non-native | annual grass | - | - | UPL |
| *Calandrinia menziesii* | Red maids | native | annual herb | - | - | FACU |
| *Capsella bursa-pastoris* | Shepherd's purse | non-native | annual herb | - | - | FACU |
| *Cardamine hirsuta* | Hairy bitter cress | non-native | annual herb | - | - | FACU |
| *Castilleja exserta* ssp. *exserta* | Purple owl's clover | native | annual herb | - | - | - |
| *Centaurea solstitialis* | Yellow starthistle | non-native (invasive) | annual herb | - | High | - |
| *Clarkia purpurea* ssp. *quadrivulnera* | Purple clarkia | native | annual herb | - | - | - |
| *Claytonia parviflora* ssp. *parviflora* | Miner'slettuce | native | annual herb | - | - | FACU |
| *Claytonia perfoliata* | Miner's lettuce | native | annual herb | - | - | FAC |
| *Croton setiger* | Turkey-mullein | native | perennial herb | - | - | - |
| *Cynosurus echinatus* | Dogtail grass | non-native (invasive) | annual grass | - | Moderate | - |
| *Cyperus eragrostis* | Tall cyperus | native | perennial grasslike herb | - | - | FACW |

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Daucus pusillus* | Wild carrot | native | annual herb | - | - | - |
| *Elymus caput-medusae* | Medusa head | non-native (invasive) | annual grass | - | High | - |
| *Elymus multisetus* | Big squirreltail grass | native | perennial grass | - | - | - |
| *Epilobium canum* | California fuchsia | native | perennial herb | - | - | - |
| *Epilobium ciliatum* | Slender willow herb | native | perennial herb | - | - | FACW |
| *Epilobium minutum* | Minute willowherb | native | annual herb | - | - | FACU |
| *Erigeron canadensis* | Canada horseweed | native | annual herb | - | - | FACU |
| *Eriodictyon californicum* | Yerba santa | native | shrub | - | - | - |
| *Eriogonum* sp. | buckwheat | native | perennial herb | - | - | - |
| *Erodium botrys* | Big heron bill | non-native | annual herb | - | - | FACU |
| *Erodium cicutarium* | Red stemmed filaree | non-native (invasive) | annual herb | - | Limited | - |
| *Erodium moschatum* | White-stem filaree | non-native | annual herb | - | - | - |
| *Eschscholzia californica* | California poppy | native | annual, perennial herb | - | - | - |
| *Euthamia occidentalis* | Western goldenrod | native | perennial herb | - | - | FACW |
| *Festuca arundinacea* | Reed fescue | non-native (invasive) | perennial grass | - | Moderate | FACU |
| *Festuca microstachys* | Small fescue | native | annual grass | - | - | - |

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Festuca myuros* | Rattail sixweeks grass | non-native (invasive) | annual grass | - | Moderate | FACU |
| *Fraxinus latifolia* | Oregon ash | native | tree | - | - | FACW |
| *Galium aparine* | Cleavers | native | annual herb | - | - | FACU |
| *Gastridium phleoides* | Nit grass | non-native | annual grass | - | - | FACU |
| *Githopsis diffusa* ssp. *diffusa* | Southern blue cup | native | annual herb | - | - | FAC |
| *Hemizonia congesta* ssp. *clevelandii* | Cleveland's tarweed | native | annual herb | - | - | - |
| *Hirschfeldia incana* | Short-podded mustard | non-native (invasive) | perennial herb | - | Moderate | - |
| *Hypericum perforatum* ssp. *perforatum* | Klamath weed | non-native | perennial herb | - | Moderate | FACU |
| *Hypochaeris radicata* | Hairy cats ear | non-native (invasive) | perennial herb | - | Moderate | FACU |
| *Juglans hindsii* | Northern California black walnut | native | tree | Rank 1B.1[1] | - | FAC |
| *Juncus xiphioides* | Iris leaved rush | native | perennial grasslike herb | - | - | OBL |
| *Lactuca serriola* | Prickly lettuce | non-native | annual herb | - | - | FACU |
| *Lagophylla ramosissima* | Common hareleaf | native | annual herb | - | - | - |
| *Lamium amplexicaule* | Henbit | non-native | annual herb | - | - | - |

[1] While Northern California black walnut is considered rare, that designation is only for individuals occurring within the native range of the species, in the vicinity of the Sacramento Delta. Therefore, it is not considered rare within the Study Area.

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Leontodon saxatilis* | Hawkbit | non-native | annual herb | - | - | FACU |
| *Lepidium latifolium* | Perennial pepperweed | non-native (invasive) | perennial herb | - | High | FAC |
| *Lepidium nitidum* | Shining pepper grass | native | annual herb | - | - | FAC |
| *Logfia gallica* | Narrowleaf cottonrose | non-native | annual herb | - | - | - |
| *Lupinus affinis* | Fleshy lupine | native | annual herb | - | - | - |
| *Lupinus bicolor* | Lupine | native | annual, perennial herb | - | - | - |
| *Lupinus nanus* | Valley sky lupine | native | annual herb | - | - | - |
| *Lythrum hyssopifolia* | Hyssop loosestrife | non-native (invasive) | annual, perennial herb | - | Limited | OBL |
| *Marah fabacea* | California man-root | native | perennial herb, vine | - | - | - |
| *Marrubium vulgare* | White horehound | non-native (invasive) | perennial herb | - | Limited | FACU |
| *Medicago polymorpha* | California burclover | non-native (invasive) | annual herb | - | Limited | FACU |
| *Melilotus indicus* | Annual yellow sweetclover | non-native | annual herb | - | - | FACU |
| *Micropus californicus* | Q tips | native | annual herb | - | - | FACU |
| *Microsteris gracilis* | Slender phlox | native | annual herb | - | - | FACU |
| *Navarretia pubescens* | Purple navarretia | native | annual herb | - | - | - |
| *Nemophila menziesii* var. *menziesii* | Baby blue eyes | native | annual herb | - | - | - |

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Nemophila parviflora* | Small flowered nemophila | native | annual herb | - | - | - |
| *Nemophila pedunculata* | Meadow nemophila | native | annual herb | - | - | FAC |
| *Plagiobothrys nothofulvus* | Rusty haired popcorn flower | native | annual herb | - | - | FAC |
| *Plantago erecta* | California plantain | native | annual herb | - | - | - |
| *Plectritis* sp. | Plectritis | native | annual herb | - | - | - |
| *Poa bulbosa* | Bulbous blue grass | non-native | perennial grass | - | - | FACU |
| *Polypogon monspeliensis* | Annual beard grass | non-native (invasive) | annual grass | - | Limited | FACW |
| *Quercus lobata* | Valley oak | native | tree | - | - | FACU |
| *Rumex crispus* | Curly dock | non-native (invasive) | perennial herb | - | Limited | FAC |
| *Rumex pulcher* | Fiddleleaf dock | non-native | perennial herb | - | - | FAC |
| *Rumex salicifolius* | Willow leaved dock | native | perennial herb | - | - | FACW |
| *Salix exigua* | Narrowleaf willow | native | tree, shrub | - | - | FACW |
| *Salix lasiolepis* | Arroyo willow | native | tree, shrub | - | - | FACW |
| *Sambucus nigra* ssp. *caerulea* | Blue elderberry | native | shrub | - | - | FAC |
| *Scleranthus annuus ssp. annuus* | German knotgrass | non-native | annual herb | - | - | FACU |
| *Secale cereale* | Rye | non-native | annual grass | - | - | - |

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Senecio vulgaris* | Common groundsel | non-native | annual herb | - | - | FACU |
| *Sidalcea diploscypha* | Fringed checker mallow | native | annual herb | - | - | - |
| *Silene gallica* | Common catchfly | non-native | annual herb | - | - | - |
| *Stellaria nitens* | Shining chickweed | native | annual herb | - | - | - |
| *Thysanocarpus curvipes* | Common fringe pod | native | annual herb | - | - | - |
| *Toxicodendron diversilobum* | Poison oak | native | vine, shrub | - | - | FACU |
| *Trichostema laxum* | Turpentine weed | native | annual herb | - | - | - |
| *Trifolium ciliolatum* | Tree clover | native | annual herb | - | - | - |
| *Trifolium dubium* | Shamrock | non-native | annual herb | - | - | UPL |
| *Trifolium hirtum* | Rose clover | non-native (invasive) | annual herb | - | Limited | - |
| *Trifolium microcephalum* | Small head clover | native | annual herb | - | - | FAC |
| *Trifolium microdon* | Valparaiso clover | native | annual herb | - | - | - |
| *Trifolium willdenovii* | Tomcat clover | native | annual herb | - | - | FACW |
| *Triphysaria pusilla* | Little owl's clover | native | annual herb | - | - | - |
| *Umbellularia californica* | California bay | native | tree | - | - | FAC |
| *Verbascum blattaria* | Moth mullein | non-native | perennial herb | - | - | UPL |

| Scientific name | Common name | Life form | Origin | Rare Status[1] | Invasive Status[2] | Wetland indicator[3] |
|---|---|---|---|---|---|---|
| *Verbascum thapsus* | Woolly mullein | non-native (invasive) | perennial herb | - | Limited | FACU |
| *Veronica anagallis-aquatica* | Water speedwell | non-native | perennial herb | - | - | OBL |
| *Vicia benghalensis* | Purple vetch | non-native | annual herb, vine | - | - | - |
| *Vicia sativa* | Spring vetch | non-native | annual herb, vine | - | - | FACU |
| *Vitis californica* | California wild grape | native | vine, shrub | - | - | FACU |
| *Xanthium strumarium* | Cocklebur | native | annual herb | - | - | FAC |

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2019a)

FE: Federal Endangered
FT: Federal Threatened
SE: State Endangered
ST: State Threatened
SR: State Rare
Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3: Plants about which we need more information – a review list
Rank 4: Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2019)

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Lichvar et al. 2016)

OBL: Almost always a hydrophyte, rarely in uplands

| | |
|---|---|
| FACW: | Usually a hydrophyte, but occasionally found in uplands |
| FAC: | Commonly either a hydrophyte or non-hydrophyte |
| FACU: | Occasionally a hydrophyte, but usually found in uplands |
| UPL: | Rarely a hydrophyte, almost always in uplands |