

Mattley Meadow Aquatic Resource Delineation

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February 24, 2020



Mattley Meadow near the east gully, July 7, 2016.

Contents

Contents.....	2
Introduction	2
Location.....	3
Methods.....	3
Existing Conditions.....	3
Aquatic Resources.....	4
Proposed Project Impacts.....	5
References	6
Attachments List (Maps, Forms, Photos).....	7

Introduction

The purpose of this report is to identify and describe aquatic resources within the Mattley Meadow Restoration Project area. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process;
2. Document aquatic resource boundary determinations for review by regulatory authorities; and
3. Provide background information.

The area surveyed for this report was the 51.89-acre Area of Potential Effect (APE) for the Mattley Meadow Restoration Project. The project area is in a montane meadow system at an elevation of 7,200 feet, in the upper Mattley Creek watershed, which is in the headwaters of the Middle Fork Mokelumne River. The project area includes the upper treatment area, Mattley Creek Meadow, and lower treatment area, Mattley Meadow (Attachment 1). Both meadows are in a xeric trend to due channel incisions that prevent streamflows from accessing the floodplain.

Contact information

Property Owner: Stanislaus National Forest, Calaveras Ranger District
Interdisciplinary Team Leader: Zachary Croyle
5519 Highway 4, PO Box 500
Hathaway Pines, CA 95233
209-813-6034

Stan Dell'Orto, private landowner
209-768-6381

Applicant: Plumas Corporation
Project Contact: Leslie Mink
PO Box 3880
Quincy, CA 95971

Location

The Mattley Meadow Restoration Project is located in Calaveras County, California, within the Stanislaus National Forest, Township 7 North, Range 17 East, Sections 8 and 17 (Attachment 1). The project area is located approximately 40 miles east of Jackson, three miles southeast of the east end of Salt Springs Reservoir and four miles west of Bear Valley.

The meadows can be accessed via existing 4 wheel-drive only roads. At this time, there is a washout on State Highway 26, which is normally used to reach the project area from Jackson, CA. Alternate driving directions are provided for the purposes of this jurisdictional determination. From Angels Camp, CA, take State Highway 4 east toward Arnold, CA. Continue east past Arnold for approximately 18 miles. Turn left (north) on USFS road FS7N09 (Cabbage Patch Log Road). Proceed approximately 1.4 miles, then turn right on USFS road FS7N12. After approximately 0.9 miles, turn left at the "Y". Continue north for approximately 1.6 miles, and turn right at the "Y". Proceed 0.5 miles, and turn right at the "Y" (FS7N62Y). Proceed another 0.3 miles and turn right at the "Y". After 0.2 miles, veer left onto FS7N37Y. Proceed 1.2 miles, then make a hard right onto USFS road FS7N16. Proceed 0.8 miles, then make a slight right onto FS7N16c. This road will take you south for approximately 0.75 miles to the southwest end of the meadow.

The bulk of the meadow is located on publicly accessible lands administered by the USDA-Forest Service, and an access letter is not required for the US Army Corps of Engineers to collect samples to verify the jurisdictional determination on those lands. The western half of the Mattley Meadow portion of the project area is under private ownership. A letter of permission to access these private lands is provided in Attachment 2.

Methods

This wetland delineation was conducted in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and Arid West Regional Supplement (Environmental Laboratory 2008). Prior to the field survey, a soils report was generated from the US Department of Agriculture Natural Resource Conservation Service's online Web Soil Survey (USDA-NRCS 2016). The wetland delineation field survey was conducted on July 7, 2016 by Leslie Mink of Plumas Corporation.

Cross-section survey data, collected by Jim Wilcox of Plumas Corporation, were reviewed to quantify channel widths and depths. Channel widths are from bank to bank (as measured by field measurements of the ordinary high water mark), and are shown on the map as linear features. Sample points were recorded with a Trimble Geo7x GPS unit. Photos were taken with a Samsung Galaxy IV smartphone (Attachment 5).

Existing Conditions

Landscape Setting

The Mattley Meadow Restoration Project area consists of two distinct meadow areas, Mattley Meadow and Mattley Creek Meadow, within the Mattley Meadows complex in the headwaters of Mattley Creek. Mattley Creek is tributary to the North Fork Mokelumne River. The mainstem Mokelumne River is a

Traditionally Navigable Water from its mouth to Frandy Gage, 3.5 miles upstream of New Hope Road in Galt, CA (ACOE 2017). Mattley Meadow occupies the confluence area of multiple small drainages and hillslope flows supporting high and middle gradient riparian hydrogeomorphic meadow types as well as discharge slope meadows (Weixelman et al. 2011). Two unnamed tributaries to Mattley Creek flow through Mattley Meadow, referred to as “east gully” and “west gully” (the west gully is not included in the project area). A constructed channel exists at the center of the meadow, which is no longer functional but has contributed to the xeric trend in the meadow. Mattley Creek Meadow is principally a discharge slope hydrogeomorphic meadow type occupying a very small drainage area (see Vicinity Map, Attachment 1, for the relative location of Mattley Creek Meadow and Mattley Meadow).

At some point in the past, the channels flowing through Mattley Meadow began to incise, likely in response to disturbance (road construction, past intensive livestock use, and/or channel modification). The channels are now deeply incised and high flows are no longer able to overflow onto the floodplain. The groundwater elevation has lowered in response to the channel incision and snow melt runoff quickly flows out of the meadow instead of flooding it and recharging the local groundwater system. Dry season stream flows have diminished as a result of reduced groundwater recharge. The altered meadow hydrology has led to a drying of the meadow, significant conifer encroachment, and degradation of meadow wildlife habitat. A large aspen stand in the meadow has been weakened and is experiencing widespread mortality.

The field survey was carried out in July 2016. At the time of the survey, precipitation during water year 2016 was above average for the northern Sierra Nevada, although the northern portion of Calaveras County was still considered to be in a state of severe drought (US Drought Monitor 2016). Sample points were collected at dispersed locations throughout the entire survey area and used in the delineation of aquatic resources.

Soil Survey Results

The USDA Web Soil Survey custom soil report for the survey area is provided in Attachment 7. The soils in the Mattley Meadow portion of the survey area are described as Entic Cryumbrepts, deep, on 1 to 10 percent slopes. These loamy sand soils are derived from igneous rock alluvium, and are well drained, with a depth of more than 80 inches to a restrictive layer. They occur in alluvial fan features. In the Mattley Creek Meadow portion of the survey area, the soils are Gerle family, bouldery-Rock outcrop complex, 5 to 35 percent slopes. Gerle family soils are found in moraine landforms and are derived from granitic glacial till. These soils are stony to bouldery sandy loams and are well drained.

Aquatic Resources

The 51.89-acre Area of Potential Effects (APE) is comprised of 3,191 linear feet (0.32 acres) of intermittent riverine channel and 0.78 acres of wet meadow riparian floodplain (palustrine). Table 1 provides a summary of the aquatic resources identified within the survey area. The remainder of the project area is 50.79 acres of upland habitats. All aquatic resources are shown on the wetland delineation maps provided in Attachment 3, and are described in the sections that follow. The plant species observed in the field survey are provided in Attachment 4; Field Forms are provided in Attachment 6.

Intermittent Channel (Riverine, Intermittent, Streambed)

Three sections of intermittent channel were identified in the survey area (MC1, MC2, and MC3). The channels are tributary to Mattley Creek. The channels are deeply incised and support sparse hydrophytic vegetation only in the channel bottom. The flows in these intermittent stream channels occur during the late-spring and early summer snowmelt period. Acreage of these channels is based on the ordinary high water mark as follows: MC1=14'; MC2=2'; MC3=1'.

Wetland Floodplain

Two vegetated wetland areas were identified in the survey area. MWF1 (Riparian) is a small area of floodplain located at the downstream end of intermittent channel MC1. MWF2 (Persistent, Emergent, Palustrine) is a discharge slope meadow (Weixelman et. al 2011) located in the western portion of the survey area that is hydrologically independent of the abandoned constructed channel MC3.

Table 1. Aquatic Resources within the Survey Area

Aquatic Resources Name	Map Label	Cowardin Type	Location (Latitude, Longitude)	Acres	Linear Feet (Stream Channels)
Mattley Channel 1	MC1	R4SB3 ¹	38.46952, -120.12458	0.22	700
Mattley Channel 2	MC2	R4SB3	38.46289, -120.12419	0.08	1,652
Mattley Channel 3	MC3	R4SB5 ²	38.46283, -120.12616	0.02	839
Mattley Wetland Floodplain 1	MWF1	PEM1 ³	38.46979, -120.12508	0.02	
Mattley Wetland Floodplain 2	MWF2	PEM1	38.46262, -120.12713	0.77	
<i>Subtotal Riverine</i>				<i>0.32</i>	<i>3,191</i>
<i>Subtotal Palustrine</i>				<i>0.78</i>	
Total Aquatic Resources				1.10	3,191

¹Riverine, Intermittent, Streambed, Cobble-Gravel

²Riverine, Intermittent, Streambed, Mud

³Persistent, Emergent, Palustrine

The conclusions of this wetland delineation are considered draft until verified by the US Army Corps of Engineers, Sacramento District.

Proposed Project Impacts

This wetland delineation was conducted in preparation for a meadow and channel restoration project. An impact map and table of impacts is provided in Attachment 8.

References

[ACOE] US Army Corps of Engineers. 2017. Navigable Waterways in the Sacramento District. Web application available at <http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/> Accessed March 15, 2017.

Environmental Laboratory. 1987. US Army Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1 (online edition). US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. January 1987.

Environmental Laboratory. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). US Army Engineer Research and Development Center, Vicksburg, MS. September 2008.

National Drought Mitigation Center. 2016. US Drought Monitor, California Status for July 19, 2016.

USDA-NRCS. 2016. Custom Soil Resource Report for Stanislaus National Forest, California, Parts, Mattley Meadow Preliminary Wetland Delineation. Web Soil Survey Application, generated July 5, 2016.

Weixleman, DA, B Hill, DJ Cooper, EL Berlow, JH Viers, SE Purdy, AG Merrill, and SE Gross. 2011. A Field Key to Meadow Hydrogeomorphic Types for the Sierra Nevada and Southern Cascade Ranges in California. Gen Tech. Report R5-TP-034. Vallejo, CA. USDA-Forest Service, Pacific Southwest Region, 34 pp.

Wilcox, J. 2015. Mattley Meadow Restoration Design Report. Prepared for the Calaveras Ranger District, Stanislaus National Forest, February 27, 2015.

Attachments List (Maps, Forms, Photos)

Attachment 1: Vicinity Map and Delineation Map Key

Attachment 2: Private Property Access Letter

Attachment 3: Wetland Delineation Maps

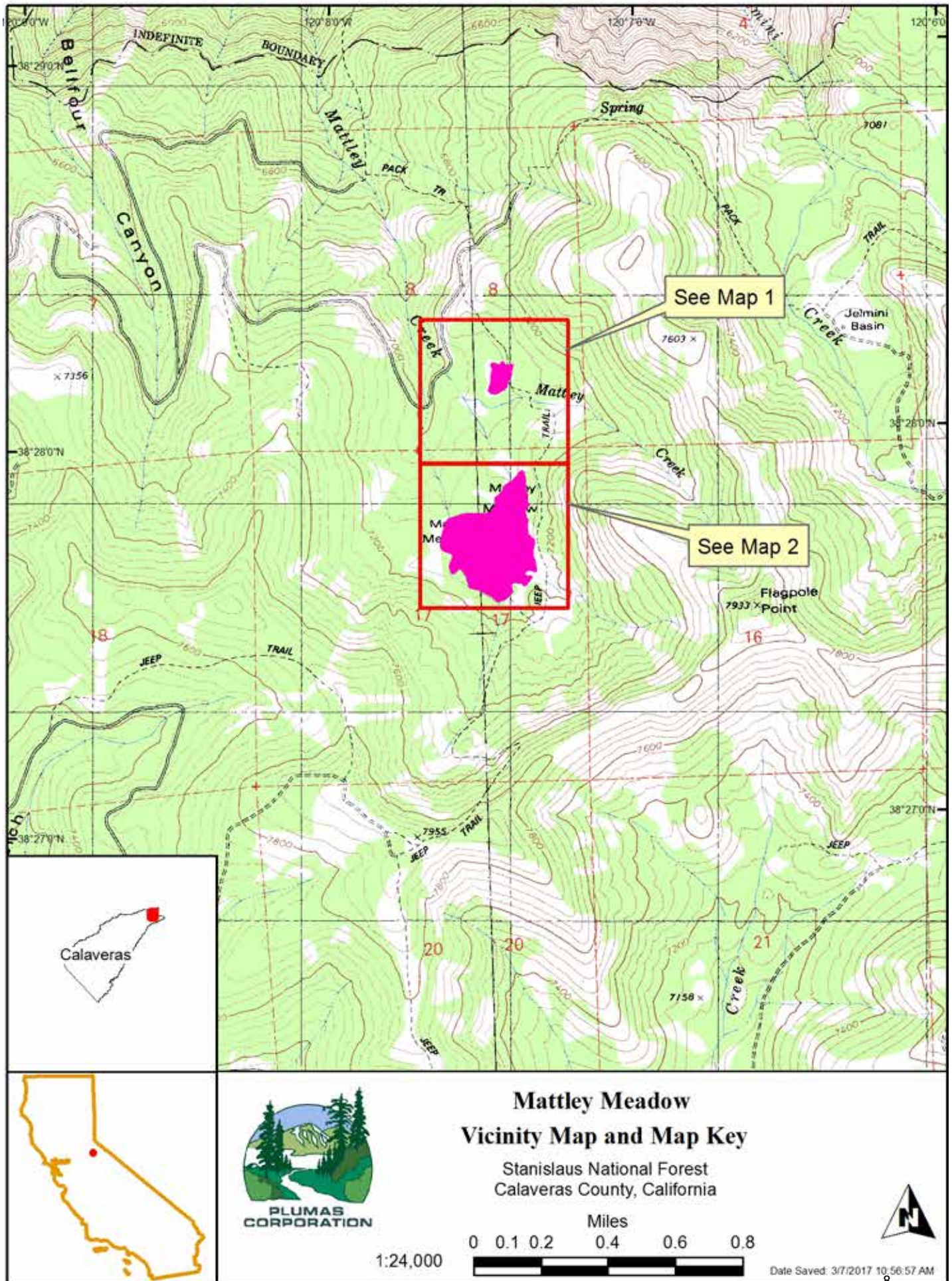
Attachment 4: List of Plant Species and Wetland Indicator Status

Attachment 5: Sample Point Photos

Attachment 6: Sample Field Forms

Attachment 7: Custom Soil Resource Report for the Mattley Meadow Restoration Project

Attachment 8: Impact Map with Table of Impacts



Attachment 2

Stan Dell'Orto
6512 Hwy 26
Mokelumne Hill, CA 95245

Jesse Stoval
US Army Corps of Engineers
California South Branch
Sacramento District HQ Office
1325 J Street, Room 1350
Sacramento, California 95814

March 16, 2017

Re: Mattley Meadow Restoration Project

Dear Mr. Stoval:

This letter serves as authorization for the US Army Corps of Engineers (ACOE) to enter my 160 acres of private land located within the Stanislaus National Forest at Mattley Meadow, for the purpose of collecting samples to verify the jurisdictional determination for the Mattley Meadow Restoration Project.

Authorization is given subject to the following conditions:

- The ACOE will indemnify and hold Stan Dell'Orto harmless from any actions, demands, costs, claims, liability, attorney's fees, and expenses for injury to or death of any and all persons and destruction of or damage to any and all property caused by or arising out of your use of the premises and/or use by your agents, employees, or independent contractors.
- Stan Dell'Orto is to receive a copy of any reports and/or data generated as a result of this project.
- No smoking or open fires of any kind will be allowed.
- Any litter resulting from your use of the premises will be removed upon completion of use.
- You will notify Stan Dell'Orto at 209-768-6381 at least **48-hours** prior to conducting any work on my property.

This authorization will terminate December 31, 2017, and can only be renewed by written consent of both parties. Please sign both originals of this letter as your acceptance of these conditions and return one copy to me. Should you have any questions please feel free to contact me at the phone number listed above.

Sincerely,


STAN DELL'ORTO

Acceptance & Approval

US ARMY CORPS OF ENGINEERS

By: _____
Signature

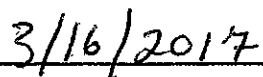
Printed name of authorized signatory

Date

STAN DELL'ORTO



Signature



Date

Attachment 3 – Wetland Delineation Maps

Mattley Meadow Restoration Project Aquatic Resource Delineation

51.89 acres in Calaveras County, CA on Stanislaus National Forest and private land Calaveras Dome and Tamarack USGS Quads. Mattley Creek Map Area (1 of 2)

Delineation by Leslie Mink of Plumas Corporation. Field Survey conducted July 7, 2016; map prepared February 20, 2020. Area of Potential Effects is two separate Treatment Areas: northern treatment area is Mattley Creek; southern treatment area is Mattley Meadow; collectively referred to as the Mattley Meadow Restoration Project. Only one of the three channels through the project area MC2 corresponds with a USGS map blue line. Direction of streamflow is to the north and northwest. Project area is mesic meadow in a xeric trend due to incised channels.

Base imagery source: USDA-FSA Aerial Photography Field Office. 2012. National Agricultural Imagery Program. Published August 28, 2012, overlain over USGS quad maps.

Map Area	Label	Type	Existing Area (ac)	Existing Length (ft)
Mattley Creek	MC1	R4SB3 ¹	0.22	700
Mattley Creek	MWF1	PEM1 ²	0.02	
Mattley Meadow	MC2	R4SB3	0.08	1652
Mattley Meadow	MC3	R4SB5 ⁴	0.02	839
Mattley Meadow	MWF2	PEM1	0.77	
Subtotal Riverine			0.32	3191
Subtotal Palustrine			0.78	
Subtotal All Wetland Types			1.10	3191
Mattley Creek	MUF1	Upland	8.72	
Mattley Meadow	MUF2	Upland	42.07	
Subtotal All Upland			50.79	
Total Project Area			51.89	3191

¹Riverine, Intermittent, Streambed, Cobble-Gravel

²Persistent, Emergent, Palustrine

³Lacustrine, Open Water, Unknown Bottom

⁴Riverine, Intermittent, Streambed, Mud



Legend

* Sample Points

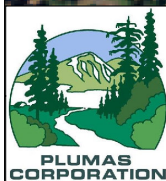
----- Trail_17EV16

— Cross-section

— Channel

— Mattley_Project_Area

— Palustrine



Mattley Meadow Restoration Project Aquatic Resource Delineation

51.89 acres in Calaveras County, CA on Stanislaus National Forest and private land

Calaveras Dome and Tamarack USGS Quads Mattley Meadow Map Area (2 of 2)

Delineation by Leslie Mink of Plumas Corporation. Field Survey conducted July 7, 2016; map prepared February 20, 2020. Area of Potential Effects is two separate Treatment Areas: northern treatment area is Mattley Creek; southern treatment area is Mattley Meadow; collectively referred to as the Mattley Meadow Restoration Project. Only one of the three channels through the project area MC2 corresponds with a USGS map blue line. Direction of streamflow is to the north and northwest. Project area is mesic meadow in a xeric trend due to incised channels.

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Subtotal Riverine			0.32	3191
Subtotal Palustrine			0.78	
Subtotal All Wetland Types			1.10	3191
Mattley Creek	MUF1	Upland	8.72	
Mattley Meadow	MUF2	Upland	42.07	
Subtotal All Upland			50.79	
Total Project Area			51.89	3191

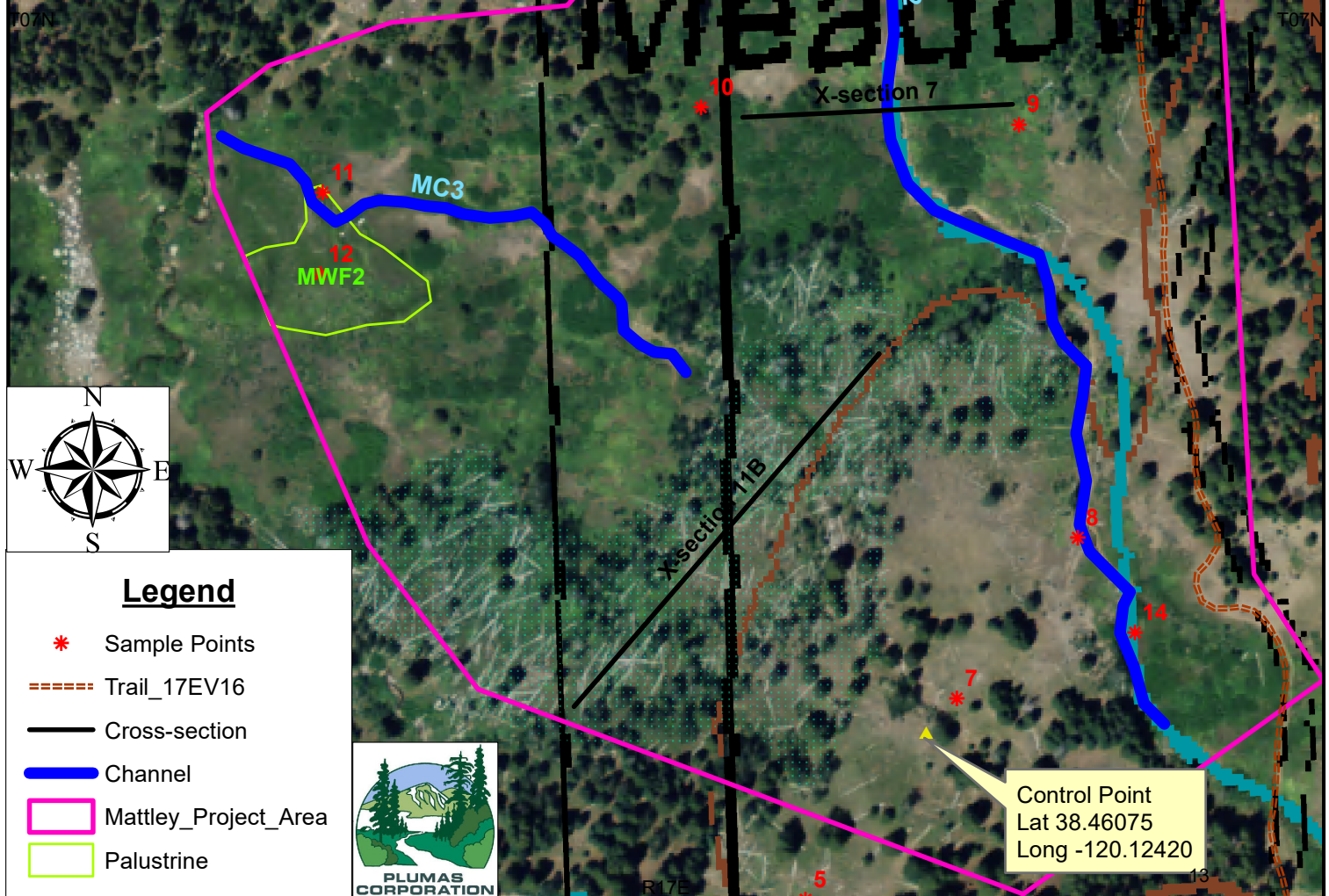
¹Riverine, Intermittent, Streambed, Cobble-Gravel

²Persistent, Emergent, Palustrine

³Lacustrine, Open Water, Unknown Bottom

⁴Riverine, Intermittent, Streambed, Mud

0 60 120 240 360 480 Feet
1 inch = 240 feet



Attachment 4 – List of Plant Species and Wetland Indicator Status

Scientific Name	Common Name	Arid West Wetland Indicator Status (Lichvar et al. 2016) ¹
<i>Achnatherum sp.</i>	Rice grass	---
<i>Aconogonon phytolaccifolium</i>	Alpine fleecflower	FAC
<i>Alopecurus sp.</i>	Meadow foxtail	---
<i>Boechera stricta</i>	Canadian rockcress	FACU
<i>Bromus diandrus</i>	Ripgut brome	NL
<i>Bromus inermis</i>	Smooth brome	FACU
<i>Carex nebrascensis</i>	Nebraska sedge	OBL
<i>Collinsia sparsiflora</i>	Few flowered collinsia	NL
<i>Darmera peltata</i>	Indian rhubarb	OBL
<i>Delphinium polycladon</i>	Mountain-marsh larkspur	FACW
<i>Eleocharis acicularis</i>	Needle spike-rush	OBL
<i>Eleocharis decumbens</i>	Decumbent spikerush	FACW ²
<i>Eleocharis quinqueflora</i>	Few-flower spike-rush	OBL
<i>Gilia latiflora</i>	Broad-flowered gilia	NL
<i>Hackelia velutina</i>	Velvet stickseed	NL
<i>Heterocodon rariflorum</i>	Western Pearlflower	FACW
<i>Hydrophyllum occidentale</i>	Squaw-Lettuce	FACW
<i>Hypericum anagalloides</i>	Tinker's-Penny	OBL
<i>Lupinus polyphyllus</i>	Blue-Pod Lupine	FAC
<i>Mertensia oblongifolia</i>	Oblongleaf bluebells	FAC
<i>Mimulus guttatus</i>	Seep monkey-flower	OBL
<i>Perideridia parishii</i>	Parish's yampah	FAC
<i>Polygonum minimum</i>	Zigzag Knotweed	FACU
<i>Rorippa curvipes</i>	Blunt-Leaf Yellowcress	FACW
<i>Sidalcea asprella</i>	Dwarf checkerbloom	FACW ³
<i>Solidago canadensis</i>	Canada goldenrod	NL
<i>Solidago elongata</i>	Cascade Canada Goldenrod	FACU
<i>Stellaria longipes</i>	Long-Stalk Starwort	FACW
<i>Taraxacum officinale</i>	Common Dandelion	FACU
<i>Trifolium longipes</i>	Long-Stalk Clover	FACW
<i>Veratrum californicum</i>	California False Hellebore	FACW

KEY: UPL = Upland; FACU = Facultative Upland; FAC = Facultative; FACW = Facultative Wetland; OBL = Obligate wetland; --- = insufficient taxonomic information to assign indicator status; NL = Not Listed (Upland for wetland delineation purposes)

¹Lichvar, RW, DL Banks, WN Kirchner, and NC Melvin. 2016. US Army Corps of Engineers State of California 2016 Wetland Plant List. May 12, 2016. Available at: <http://wetland-plants.usace.army.mil> Accessed March 15, 2017.

²Alternative scientific name = *Eleocharis montevidensis* var *decumbens*; FACW indicator status for this species.

³Alternative scientific name = *Sidalcea malviflora*; FACW indicator status for this species.



Sample Point 1



Sample Point 2



Sample Point 3



Sample Point 4



Sample Point 5



Sample Point 6



Sample Point 7



Sample Point 8



Sample Point 9



Sample Point 10



Sample Point 11



Sample Point 12



Sample Point 13



Sample Point 14

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2014
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 1 2 p.m. 9:04
 Investigator(s): Leslie Mink Section, Township, Range: T7N R1E S. 8
 Landform (hillside, terrace, etc.): Barrel / adj. f.p. Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): MLRA 22A Lat: 38.46955 Long: -120.12439 Datum: NAD 83
 Soil Map Unit Name: 114 Gerle Family, Boulder-rock outcrop, complex 5-3S to slope, NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes _____ No _____ Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes _____ No _____ (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 ☐	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
= Total Cover				
Shrub/Straw Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>20</u> x 1 = <u>20</u>
3. _____				FACW species <u>10</u> x 2 = <u>20</u>
4. _____				FAC species <u>5</u> x 3 = <u>15</u>
5. _____				FACU species _____ x 4 = _____
= Total Cover				OBL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: <u>35</u> (A) <u>55</u> (B)
1. <u>Mimulus guttatus</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	Prevalence Index = B/A = <u>1.6</u>
2. <u>Veronica californica</u>	<u>10</u>		<u>FACW</u>	Hydrophytic Vegetation Indicators:
3. <u>Limonium polyphyllum</u>	<u>5</u>		<u>FAC</u>	Dominance Test is > 50% _____
4. <u>Eleocharis dubium</u>	<u>5</u>		<u>FACU</u>	Prevalence Index is > 3.0 _____
5. <u>Salicaria elongata</u>				Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) _____
6. <u>Sidalcea asarifolia</u>				Problematic Hydrophytic Vegetation (Explain) _____
7. _____				
8. _____				
= Total Cover				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>80</u> % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 1

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

Depth (Inches)	Matrix		Redox Features		Type	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-12"	10 YR 4/4	100						Silly

Type: C=Concentration, O=Oxidation, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

³Indicators 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 ☒

Remarks:

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)
- ☐ Bitotic 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 (C8)
- ☐ 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 _____ Depth (Inches): 60" NW F8
 Water Table Present? Yes _____ No _____ Depth (Inches): _____
 Saturation Present? Yes _____ No _____ Depth (Inches): _____

Wetland Hydrology Present? Yes ☒ No ☒

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

Remarks:

If not for incision, there would not be surface water - it would be subsurface.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 2
 Investigator(s): Leslie Mink Section, Township, Range: T7N R1E S. 8
 Landform (hillslope, terrace, etc.): riparian floodplain Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.46979 Long: -120.12509 Datum: NAD83
 Soil Map Unit Name: 114 Gerte Family, Boulder-rock outcrop complex 5-35% slope NWI classification: PUS5
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☐ No ☐ (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 ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species: <u>10</u> x 1 = <u>10</u> FACW species: <u>35</u> x 2 = <u>70</u> FAC species: <u>15</u> x 3 = <u>45</u> FACU species: <u>35</u> x 4 = <u>140</u> UPL species: _____ x 5 = _____ Column Totals: <u>95</u> (A) <u>265</u> (B) Prevalence Index = B/A = <u>2.8</u>
= Total Cover				
1. _____				
2. _____				
3. _____				
= Total Cover				
Herb Stratum (Plot size: <u>3 m²</u>) 1. <u>Lupinus polyphyllus</u> <u>15</u> <u>FAC</u> 2. <u>Solidago canadensis</u> <u>30</u> <u>FACU</u> 3. <u>Ulex europaeus</u> <u>30</u> <u>FACW</u> 4. <u>Delphinium consolida</u> <u>5</u> <u>FACU</u> 5. <u>Mimulus guttatus</u> <u>10</u> <u>OBL</u> 6. <u>Taraxacum officinale</u> <u>5</u> <u>FACU</u> 7. <u>Rubus</u> <u>5</u> <u>FACU</u> 8. _____ = Total Cover				Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is >10 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation? (Explain)
= Total Cover				
1. _____				
2. _____				
3. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ = Total Cover				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
= Total Cover				
1. _____				
2. _____				
3. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____ Remarks:				

US Army Corps of Engineers

Arid West – Version 2.0

Sampling Point

SOIL

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

[illegible]

(Type: C=Concentration, D=Completion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains, Location: PL=Pipe Lining, M=Matrix,
 applicable to all I.R.s. unless otherwise noted.) Indicators for Problematic Hydric Soils:

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	
☐ Histosol (A1)	☐ Sandy Redox (S5)
☒ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

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

²Indicators 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 ☐

Remarks:

Wetland Hydrology Indicators:

Wetland Hydrology Indicators.

Primary Indicators (minimum of one indicator per site)		
☒ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B8)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations:

Field Crops: _____ Yes ☒ No _____ Depth (Inches): 20
 Surface Water Present? Yes _____ No _____ Depth (Inches): _____
 Water Table Present? Yes _____ No _____ Depth (Inches): _____
 Saturation Present? Yes _____ No _____ Depth (Inches): _____

Wetland Hydrology Present? Yes ✓ No

Saturation Pressure
(inch/dec capillary fringe)

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mottley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 3
 Investigator(s): Leslie Mink Section, Township, Range: 77N 88E S17ES8
 Landform (hillslope, terrace, etc.): terrace floodplain Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.46963 Long: -120.12403 Datum: NAD83
 Soil Map Unit Name: 114 NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☐ No ☐ (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 ☐	Is the Sampled Area within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☐ No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Indicator Species?	Status	Dominance Test worksheet:
1. <u>Populus</u>	5			Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
= Total Cover				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____
1. _____				OBL species <u>30</u> x 1 = <u>30</u>
2. _____				FACW species <u>5</u> x 2 = <u>10</u>
3. _____				FAC species <u>5</u> x 3 = <u>15</u>
4. _____				FACU species _____ x 4 = _____
5. _____				UPL species _____ x 5 = _____
= Total Cover				Column Totals: <u>35</u> (A) <u>75</u> (B)
Herb Stratum (Plot size: _____)				Prevalence Index = B/A = <u>2.14</u>
1. <u>Veronica californica</u>	25	Y	FACW	Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is >3.0 ☐ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation* (Explain)
2. <u>Euphorbia polycarpa</u>	5		FAC	
3. <u>Delphinium polycarpa</u>	5		FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
= Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				
1. _____				Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>60</u> % Cover of Biotic Crust _____				
Remarks:				

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
<u>Primary Indicators (minimum of one required; check all that apply)</u>		
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Bitotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C5)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
<u>Field Observations:</u>		
Surface Water Present? Yes ☒ No ☒	Depth (Inches): 60" in the channel, not on FP	
Water Table Present? Yes ☐ No ☐	Depth (Inches):	
Saturation Present? Yes ☐ No ☐	Depth (Inches):	Wetland Hydrology Present? Yes ☐ No ☒
(Includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 4 ~ 10:38
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S17
 Landform (hilllope, terrace, etc.): channel incised Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.45960 Long: -120.12414 Datum: NAD83
 Soil Map Unit Name: loessial Cryombrpts, deep, 1-10% slopes NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☐ No ☐ (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 ☐	Is the Sampled Area within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☒ No ☐		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Indicator Species? Status	Dominance Test worksheet:
1. _____			Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____			Total Number of Dominant Species Across All Strata: _____ (B)
3. _____			Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____			
Savanna/Shrub Stratum (Plot size: _____) = Total Cover			Prevalence index worksheet:
1. _____			Total % Cover of: _____ Multiply by:
2. _____			OBL species 2 x 1 = 2
3. _____			FACW species 3 x 2 = 6
4. _____			FAC species 4 x 3 = 12
5. _____			FACU species _____ x 4 = _____
Herb Stratum (Plot size: _____) = Total Cover			UPL species _____ x 5 = _____
1. <u>Mimulus aurantiacus</u>	<u>3</u>	OBL	Column Totals: 9 (A) 20 (B)
2. <u>Mentzelia oblongifolia</u>	<u>4</u>	FAC	Prevalence Index = B/A = 2.2
3. <u>Blitum</u>			Hydrophytic Vegetation Indicators:
4. _____			— Dominance Test is >50%
5. <u>Salicornia canescens?</u>	<u>3</u>	FACU	— Prevalence Index is >3.0
6. _____			— Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
7. _____			— Problematic Hydrophytic Vegetation (Explain)
8. _____			
Woody Vine Stratum (Plot size: _____) = Total Cover			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____			Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____			
% Bare Ground in Herb Stratum <u>90</u> % Cover of Biotic Crust _____			
Remarks:			

[illegible]

HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) (Nonriverine) ☐ Sediment Deposits (B2) (Nonriverine) ☐ Drift Deposits (B3) (Nonriverine) ☐ Surface Soil Cracks (B4) ☐ 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 (C8) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Water Marks (B1) (Riverine) ☒ Sediment Deposits (B2) (Riverine) ☐ Drift Deposits (B3) (Riverine) ☒ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C3) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Shallow Aquifers (D3) ☐ FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes ☐ No ☐ Depth (Inches): _____ Water Table Present? Yes ☐ No ☐ Depth (Inches): _____ Saturation Present? Yes ☐ No ☐ Depth (Inches): _____ (Includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 5
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S17
 Landform (hill/slope, terrace, etc.): meadow Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.46013 Long: -120.12483 Datum: NAD83
 Soil Map Unit Name: 107Eatic Crym brepts, deep, 1-10% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ 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 ☐	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☐ No ☒		

Remarks: brought + downcut channels + an inactive incised channel that dries the meadow out

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
= Total Cover				
Shrub/Straw Stratum (Plot size: _____)				
1. _____				Prevalence Index worksheet:
2. _____				Total % Cover of: _____ Multiply by:
3. _____				OBL species <u>10</u> x 1 = <u>10</u>
4. _____				FACW species <u>70</u> x 2 = <u>140</u>
5. _____				FAC species _____ x 3 = _____
				FACU species _____ x 4 = _____
				UPL species _____ x 5 = _____
				Column Totals: <u>80</u> (A) <u>150</u> (B)
				Prevalence Index = B/A = <u>1.9</u>
Herb Stratum (Plot size: <u>3M²</u>)				
1. <u>Veratrum californicum</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators:
2. <u>Sidalcea omissa</u>	<u>10</u>		<u>FACW</u>	Dominance Test is >50%
3. <u>Carex nebrascensis</u>	<u>10</u>		<u>OBL</u>	Prevalence Index is >1.0
4. <u>Achnatherum</u>	<u>10</u>			Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. <u>Rorippa curvisipes</u>	<u>5</u>			Problematic Hydrophytic Vegetation? (Explain)
6. <u>Callinasis sponsoiflora</u>	<u>5</u>		<u>FACW</u>	
7. <u>Hydrophyllum occidentale</u>	<u>5</u>		<u>FACW</u>	
8. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Static Crust _____				
Remarks:				Hydrophytic Vegetation Present? Yes ☒ No ☐

Sampling Point: 5 2 pics 11:00

SOIL

SOIL

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

Redox Features

[illegible]

1. Type: C=Concentration, Q=Depletion, RM=Reduced Matrix, CG=Covered or Coated Sand Grains. 2. Location: PL=Pore Lining, M=Matrix.
Indicators for Problematic Hydric Soils¹

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

Indicators for Problematic Hydric Soils¹:

- 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 Clayed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F8)
- Depleted Dark Surface (F7)
- Redox Depressions (F9)
- Vernal Pools (F9)

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

³Indicators 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 ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B8)
- 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 (C8)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

- 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 Tact (D5)

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): >60"

Seepage Present? Yes ☐ No ☐ Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 6
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hillslope, terrace, etc.): terraced to meadow Local relief (concave, convex, none): Concave Slope (%):
 Subregion (LAR): MLRA22A Lat: 38.45988 Long: -120.12520 Datum: NAD83
 Soil Map Unit Name: 107 Entic Cryumbrepts, deep, 1-10.9% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☐ No ☐ (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 ☐	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☐ No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species: <u>10</u> x 1 = <u>10</u> FACW species: _____ x 2 = _____ FAC species: <u>10</u> x 3 = <u>30</u> FACU species: _____ x 4 = _____ UPL species: _____ x 5 = _____ Column Totals: <u>70</u> (A) <u>40</u> (B) Prevalence Index = B/A = <u>2</u>
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is >3.0 Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation* (Explain)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>60</u> % Cover of Biotic Crust: _____				

US Army Corps of Engineers

Arid West – Version 2.0

[illegible]

HYDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
☐ 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) ☐ Bloated 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)	☐ 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 ☒	Depth (inches):	> 60"
Water Table Present?	Yes ☐ No ☐	Depth (inches):	
Saturation Present?	Yes ☐ No ☐	Depth (inches):	
(Includes capillary fringe)			
Wetland Hydrology Present? Yes ☐ No ☒			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: # channel pond 11:25			

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2014
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 7
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S17
 Landform (hillside, terrace, etc.): meadow Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): MLRA22A Lat: 38.46090 Long: -120.12404 Datum: NAD83
 Soil Map Unit Name: 107 Eutric Cryombrpts, deep, 1-10% slopes NWI classification: UPL
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes _____ No _____ Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes _____ No _____ (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 ☐	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks:		

VEGETATION – Use scientific names of plants.

Total Stratum (Plot size: _____)	Absolute % Cover	Dominant Indicator Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
= Total Cover				Total % Cover of: _____ Multiply by: _____
1. _____	_____	_____	_____	OBL species _____ x 1 = _____
2. _____	_____	_____	_____	FACW species _____ x 2 = _____
3. _____	_____	_____	_____	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
= Total Cover				Column Totals: _____ (A) _____ (B)
1. <u>Habenaria reticulata</u>	<u>5</u>	<u>FACU?</u>	<u>FACU?</u>	Prevalence Index = A/B = <u>4.25</u>
2. <u>Sidalcea</u>	<u>5</u>	<u>FACU?</u>	<u>FACU?</u>	Hydrophytic Vegetation Indicators:
3. <u>Achnatherum</u>	<u>15</u>	<u>FACU?</u>	<u>FACU?</u>	Dominance Test is > 50% _____
4. <u>Carex nebrascensis</u>	<u>10</u>	<u>OBL</u>	<u>OBL</u>	Prevalence Index is > 10 _____
5. <u>Callieris parviflora</u>	<u>20/10</u>	<u>OBL</u>	<u>OBL</u>	Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) _____
= Total Cover				Problematic Hydrophytic Vegetation* (Explain) _____
1. _____	_____	_____	_____	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. _____
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____
= Total Cover				
% Bare Ground in Herb Stratum: <u>55</u>	% Cover of Biotic Crust: _____			
Remarks: <u>11:38 (note school env)</u>				

[illegible]

HYDROLOGY		
Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
☐ 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) ☐ Bitotic 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)	☐ 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 Aquifers (D3) ☐ FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes ☐ No ☒	Depth (Inches): <u>260"</u>	Wetland Hydrology Present? Yes ☐ No ☒
Water Table Present? Yes ☐ No ☐	Depth (Inches): _____	
Saturation Present? Yes ☐ No ☐	Depth (Inches): _____	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 8
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hilllope, terrace, etc.): fp Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): MLRA22A Lat: 38.46152 Long: -120.12342 Datum: NAD83
 Soil Map Unit Name: 107Eatic Cryum brepts, deep, 1-10.9% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 ☐	In the Sampled Area within a Wetland?	Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒		
Wetland Hydrology Present?	Yes _____ No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Indicator Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>70</u> (A) <u>185</u> (B) Prevalence Index = B/A = <u>2.64</u>
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Hydrophytic Vegetation Indicators: Dominance Test is >30% Prevalence Index is >3.0 Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation* (Explain)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No _____
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				

% Bare Ground in Herb Stratum 20 % Cover of Blotic Crust _____

Remarks:

[illegible]

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) ☐ Bitotic 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 ☐ Depth (Inches): ~84" Water Table Present? Yes ☐ No ☐ Depth (Inches): _____ Saturation Present? Yes ☐ No ☐ Depth (Inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Channel is wet w. 0.2 cfs channel is wotus fp is dried out due to incision	

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 9 12345
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hillslope, terrace, etc.): meadow Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): MLRA22A Lat: 38.46313 Long: -120.12364 Datum: NAD83
 Soil Map Unit Name: 107Eatic Crymbspts, deep, 1-10.7% slopes NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes _____ No _____ Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes _____ No _____ (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 ☐	In the Sampled Area within a Wetland?	Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒		
Wetland Hydrology Present?	Yes _____ No ☒		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Indicator Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. <u>0.2m</u>	<u>20</u>			
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species _____ x 5 = _____ Column Totals: <u>50</u> (A) <u>120</u> (B) Prevalence Index = B/A = <u>2.4</u>
= Total Cover				
= Total Cover				
= Total Cover				
= Total Cover				
= Total Cover				Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is >3.0 Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation† (Explain)
= Total Cover				
= Total Cover				
= Total Cover				
= Total Cover				
= Total Cover				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No _____
= Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust: _____ Remarks:				

Sampling Point: 9

SOIL

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

Depth (Inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-8"	7.5YR 6/3	100					R.O.T.	

Type: C=Concentration, O=Depletion, RM=Reduced Matrix, CG=Covered or Coated Sand Grains.
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 (S3) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F8) ☐ Depleted Dark Surface (F7) ☐ Redox Depressions (F8) ☐ Vernal Pools (F9)	☐ 1 cm Muck (A9) (LRR C) ☐ 2 cm Muck (A10) (LRR B) ☐ Reduced Vertic (F18) ☐ Red Parent Material (T2) ☐ Other (Explain in Remarks)
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¹Indicators of hydrotrophic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Reactive Layer (if present):
Type: _____
Depth (Inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: _____

HYDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
☐ 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)	☐ 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 ☒	Depth (Inches): 780"		
Water Table Present? Yes ☐ No ☐	Depth (Inches):		
Saturation Present? Yes ☐ No ☐	Depth (Inches):		
(includes capillary fringe)			
Wetland Hydrology Present? Yes ☐ No ☒			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: 12:47 pm of nearby channel			

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 16 12:54 PM
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hill/slope, terrace, etc.): meadow Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.46324 Long: -120.12522 Datum: NAD83
 Soil Map Unit Name: 107Eatic Crym brepts, deep, 1-10% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☐ No ☐ (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 ☐	In the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☐ No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (AB)
4. _____				
= Total Cover				
Shrub/Straw Stratum (Plot size: _____)				
1. <u>Salix lemmonii?</u>	<u>25</u>			
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Pendula pinnatifida</u>	<u>5</u>		FAC	
2. <u>Vernonia calif.</u>	<u>25</u>		FACW	
3. <u>Gilia latifolia</u>	<u>40</u>		FAC	
4. <u>Sidalcea</u>	<u>5</u>			
5. <u>Eleocharis acicularis</u>	<u>15</u>		OBL	
6. _____				
7. _____				
8. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Siotic Crust _____			Hydrophytic Vegetation Present? Yes ☒ No ☐

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>15</u>	x 1 =	<u>15</u>
FACW species <u>25</u>	x 2 =	<u>50</u>
FAC species <u>45</u>	x 3 =	<u>135</u>
FACU species _____	x 4 =	
UPL species _____	x 5 =	
Column Totals: <u>85</u> (A)		<u>200</u> (B)

Prevalence Index = B/A = 2.35

Hydrophytic Vegetation Indicators:

- Dominance Test is >50% ☐
- Prevalence Index is >3.0 ☐
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) ☐
- Problematic Hydrophytic Vegetation? (Explain) ☐

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

Remarks:

[illegible]

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) ☐ Thirt 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 ☐ Depth (Inches): <u>> 78"</u> Water Table Present? Yes ☐ No ☐ Depth (Inches): _____ Saturation Present? Yes ☐ No ☐ Depth (Inches): _____	Wetland Hydrology Present? Yes ☐ No ☒	
(Includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 11 13.08-9 way
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hillslope, terrace, etc.): upstream fl Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): MLRA22A Lat: 38.46295 Long: -120.12712 Datum: NAD83
 Soil Map Unit Name: 107Eatic Crym brepts, deep, 1-10.7% slopes NWI classification: PUS5
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes _____ No _____ Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes _____ No _____ (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 _____	In the Sampled Area Within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
= Total Cover				
Shrub/Straw Stratum (Plot size: _____)				
1. _____				Prevalence Index worksheet:
2. _____				Total % Cover of: _____ Multiply by:
3. _____				OBL species <u>60</u> x 1 = <u>60</u>
4. _____				FACW species _____ x 2 = _____
5. _____				FAC species <u>5</u> x 3 = <u>15</u>
				FACU species _____ x 4 = _____
				OPL species _____ x 5 = _____
				Column Totals: <u>60</u> (A) <u>75</u> (B)
= Total Cover				Prevalence Index = B/A = <u>1.3</u>
Herb Stratum (Plot size: _____)				
1. <u>Eleocharis quinqueflora</u>	<u>30</u>		OBL	Hydrophytic Vegetation Indicators:
2. <u>Parthenocissis purishii</u>	<u>5</u>		FAC	Dominance Test is >50%
3. <u>Mimulus guttatus</u>	<u>5</u>		OBL	Prevalence Index is >3.0
4. <u>Hypericum angustifolius</u>	<u>10</u>		OBL	Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. <u>Rock-cress white cloth</u>	<u>10</u>			Problematic Hydrophytic Vegetation? (Explain)
6. <u>Carex nebrascensis</u>	<u>15</u>		OBL	
7. <u>Boechera stricta</u>				
8. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes ☒ No _____
Remarks:				

SOIL

Sampling Point 11

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

Depth (Inches)	Matrix		Redox Features		Type ¹	Log ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-8	7.5 YR	4/2	40					
0-8	"	7/1	10					
	"	4/2	50					

¹Type: C=Concentration, O=Oxidation, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

☐ Histic (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 (S8) ☒ 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 Soils³: ☐ 1 cm Muck (A9) (LRR C) ☐ 2 cm Muck (A10) (LRR B) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Other (Explain in Remarks)
--	--	--

³Indicators 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 ☐

Remarks:

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 (C8) ☐ 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)
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Field Observations:

Surface Water Present?	Yes ☒ No ☐	Depth (Inches): <u>12"</u>	Wetland Hydrology Present? Yes ☒ No ☐
Water Table Present?	Yes ☐ No ☐	Depth (Inches): _____	
Saturation Present?	Yes ☐ No ☐	Depth (Inches): _____	

(Includes capillary fringe)

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

Remarks:

And West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 12
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hillslope, terrace, etc.): low meadow deep Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): MLRA22A Lat: 38.46263 Long: -120.12714 Datum: NAD83
 Soil Map Unit Name: 107 Eutric Cryobripts, deep 1-10.9% slopes NWI classification: PUS5

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes _____ No _____ Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes _____ No _____ (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 ☒	Is the Sampled Area within a Wetland?	Yes ☒ No _____
Hydric Soil Present?	Yes _____ No ☒		
Wetland Hydrology Present?	Yes ☒ No _____		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Shrub/Straw Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is <3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation? (Explain)
Herb Stratum (Plot size: _____)				
1. <u>Taraxacum officinale</u> 15 FACW				
2. <u>Eleocharis</u> OBL?				
3. <u>Carex nebrascensis?</u> 70 OBL?				
4. <u>white grass</u>				
5. _____				
6. _____				
7. _____				
8. _____				
= Total Cover				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks:				

[illegible]

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 (B4)
- ☐ 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 (D1)
- ☐ FAC-Neutral Test (D6)

Field Observations:

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

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

Saturation Present? Yes ☐ No ☐ Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: fields look a few

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2006
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 13
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hillslope, terrace, etc.): meadow Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.46421 Long: -120.12457 Datum: NAD83
 Soil Map Unit Name: 107Eatic Cryobripts, deep 1-10% slopes NWI classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☐ No ☐ (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 ☐	Is the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
= Total Cover				
Shrub/Small Tree Stratum (Plot size: _____)				Prevalence Index worksheet:
1. <u>Salix</u>	<u>15</u>			Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>5</u> x 1 = <u>5</u>
3. _____				FACW species <u>10</u> x 2 = <u>20</u>
4. _____				FAC species <u>10</u> x 3 = <u>30</u>
5. _____				FACU species <u>5</u> x 4 = <u>20</u>
= Total Cover				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: <u>60</u> (A) <u>135</u> (B)
1. <u>Veronica calif.</u>	<u>25</u>		FACW	Prevalence Index = B/A = <u>2.3</u>
2. <u>Erigeron phillyifolius</u>	<u>10</u>		FAC	Hydrophytic Vegetation Indicators:
3. <u>Bromus inermis</u>	<u>5</u>		FACU	Dominance Test is >50% _____
4. <u>Eleocharis quinqueflora</u>	<u>5</u>		OBL	Prevalence Index is >1.0 _____
5. <u>Sidalcea</u>	<u>5</u>			Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) _____
6. <u>Milium latiflorum</u>	<u>10</u>			Problematic Hydrophytic Vegetation (Explain) _____
7. <u>Stellaria longipes</u>	<u>15</u>		FACW	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. <u>Alopecurus</u>				
= Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Remarks:				

Bond pic 13:49 veg. chnl 13:52
 pic 10 btm 14:07

Sampling Point: 13

SOIL

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

Depth (Inches)	Matrix		Redox Features		Type ¹	Loc ²	Taxline	Remarks
	Color (moist)	%	Color (moist)	%				
0-36"	7YR 5/3	SD	7.5 YR 6/3	SD				
36-46	7.5 Y 5-2.5/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

☐ Histosol (A1)	☐ Sandy Redox (S8)	☐ Indicators for Problematic Hydric Soils: ³
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 1 cm Muck (A9) (LRR C)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ 2 cm Muck (A10) (LRR B)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Reduced Vertic (F18)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Red Parent Material (TF2)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F8)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

³Indicators 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 ☒

Remarks:

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 (B8)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Bitic 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 (C8)
- ☐ 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 (C3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (Inches): 56"

Water Table Present? Yes ☐ No ☐ Depth (Inches):

Saturation Present? Yes ☐ No ☐ Depth (Inches):

(Includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
 Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 14
 Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
 Landform (hillside, terrace, etc.): meadow/fp Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRR): MLRA22A Lat: 38.46113 Long: -120.12315 Datum: NAD83
 Soil Map Unit Name: 107-Eutic Cryobrupts, deep, 1-10% slopes NWI classification: UPL
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☐ (If no, explain in Remarks.)
 Are Vegetation, Soil, or hydrology significantly disturbed? Yes ☐ No ☐ Are "Normal Circumstances" present? Yes ☐ No ☐
 Are Vegetation, Soil, or hydrology naturally problematic? Yes ☐ No ☐ (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 ☒	In the Sampled Area Within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☐ No ☒		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Indicator Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species _____ x 5 = _____ Column Totals: <u>40</u> (A) <u>135</u> (B) Prevalence Index = B/A = <u>3.4</u>
= Total Cover				
1. <u>Silene</u>	<u>15</u>			
2. _____				
3. _____				
= Total Cover				Hydrophytic Vegetation Indicators: Dominance Test is >30% Prevalence Index is >3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation? (Explain)
= Total Cover				
1. <u>Cress</u>	<u>25</u>			
2. <u>Perideridia pariskii</u>	<u>5</u>	FAC		
3. <u>Hackelia</u>	<u>15</u>	FACU		
= Total Cover				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☐ No ☒
= Total Cover				
1. _____				
2. _____				
3. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust: _____				
Remarks:				

Sampling Point 14**SOIL**

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

Depth (Inches)	Matrix		Redox Features		Type	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6	7.5 YR 4/3						silt	

¹Type: C=Concentration, O=Oxidation, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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: ☐ 1 cm Muck (A9) (LRR C) ☐ 2 cm Muck (A10) (LRR B) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Other (Explain in Remarks)
--	---	---

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

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 (B8) ☐ 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)
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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 _____

Depth (inches): 96" flr & p

Water Table Present?

Yes _____

No _____

Depth (inches): _____

Saturation Present?

Yes _____

No _____

Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

Arid West - Version 2.0



United States
Department of
Agriculture

NRCS

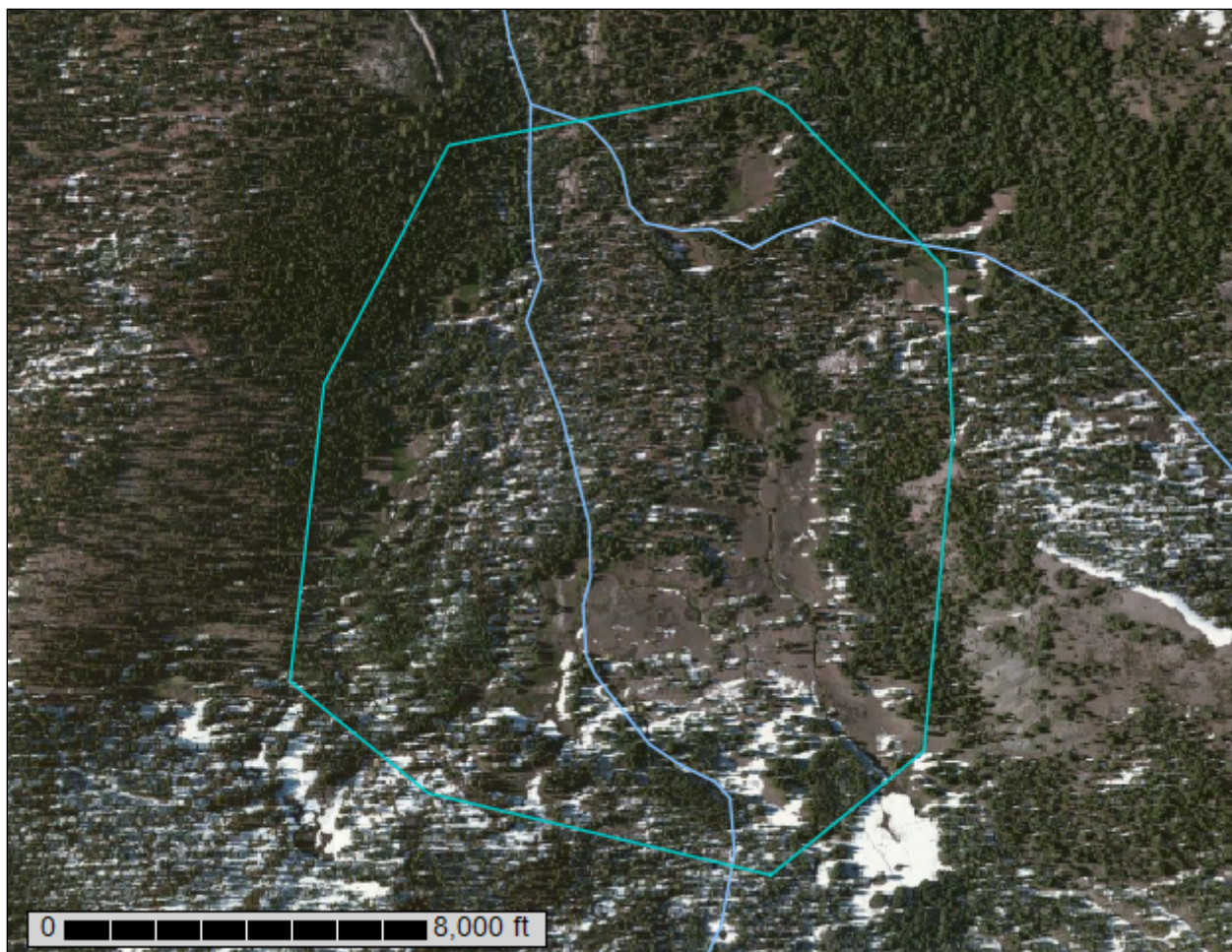
Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Attachment 7

Custom Soil Resource Report for Stanislaus National Forest, California, Parts

Mattley Meadow Preliminary Wetland Delineation



Stanislaus National Forest, California, Parts

107—Entic Cryumbrepts, deep, 1 to 10 percent slopes

Map Unit Setting

National map unit symbol: hlv
Elevation: 6,000 to 9,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 36 to 46 degrees F
Frost-free period: 30 to 60 days
Farmland classification: Not prime farmland

Map Unit Composition

Entic cryumbrepts, deep, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Entic Cryumbrepts, Deep

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Flat
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from igneous rock

Typical profile

H1 - 0 to 8 inches: loamy sand
H2 - 8 to 60 inches: loamy sand

Properties and qualities

Slope: 1 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A

Minor Components

Unnamed, light colored surface

Percent of map unit: 10 percent

Unnamed

Percent of map unit: 5 percent

114—Gerle family, bouldery-Rock outcrop complex, 5 to 35 percent slopes

Map Unit Setting

National map unit symbol: hlvp
Elevation: 6,000 to 8,000 feet
Mean annual precipitation: 45 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Gerle family, bouldery, and similar soils: 50 percent
Rock outcrop: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gerle Family, Bouldery

Setting

Landform: Moraines
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Till derived from granite

Typical profile

H1 - 0 to 10 inches: bouldery sandy loam
H2 - 10 to 50 inches: stony sandy loam
H3 - 50 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Percent of area covered with surface fragments: 0.1 percent
Depth to restrictive feature: 50 to 54 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Rock Outcrop

Setting

Landform: Mountains, moraines

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Lower third of mountain flank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Granite

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 35 percent

Depth to restrictive feature: 0 to 0 inches to lithic bedrock

Natural drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Minor Components

Gerle family, moderately deep

Percent of map unit: 10 percent

Gerle family, deep

Percent of map unit: 10 percent

Wintoner family

Percent of map unit: 5 percent

115—Gerle family, bouldery-Rock outcrop complex, 35 to 50 percent slopes

Map Unit Setting

National map unit symbol: hlvq

Elevation: 6,000 to 8,000 feet

Mean annual precipitation: 45 to 65 inches

Mean annual air temperature: 39 to 46 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Gerle family, bouldery, and similar soils: 50 percent

Rock outcrop: 30 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gerle Family, Bouldery

Setting

Landform: Moraines

Landform position (two-dimensional): Footslope, backslope

Landform position (three-dimensional): Lower third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Till derived from granite

Typical profile

H1 - 0 to 10 inches: bouldery sandy loam

H2 - 10 to 50 inches: stony sandy loam

H3 - 50 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent

Percent of area covered with surface fragments: 0.1 percent

Depth to restrictive feature: 50 to 54 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Description of Rock Outcrop

Setting

Landform: Mountains, moraines

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Lower third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Granite

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 50 percent

Depth to restrictive feature: 0 to 0 inches to lithic bedrock

Natural drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Minor Components

Lithic xerumbrepts

Percent of map unit: 5 percent

Gerle family, deep

Percent of map unit: 5 percent

Gerle family, moderately deep

Percent of map unit: 5 percent

Wintoner family

Percent of map unit: 5 percent

166—Lithic Cryumbrepts-Rock outcrop-Windy family, moderately deep complex, 5 to 35 percent slopes

Map Unit Setting

National map unit symbol: hlxb

Elevation: 4,190 to 8,000 feet

Mean annual precipitation: 50 to 65 inches

Mean annual air temperature: 36 to 46 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Lithic cryumbrepts and similar soils: 40 percent

Rock outcrop: 30 percent

Windy family, moderately deep, and similar soils: 20 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lithic Cryumbrepts

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: loam

H2 - 5 to 15 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 35 percent

Depth to restrictive feature: 5 to 9 inches to lithic bedrock

Natural drainage class: Excessively drained

Custom Soil Resource Report

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Tuff breccia

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 35 percent

Depth to restrictive feature: 0 to 0 inches to lithic bedrock

Natural drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam

H2 - 5 to 30 inches: very gravelly sandy loam

H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent

Depth to restrictive feature: 30 to 34 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Minor Components

Unnamed

Percent of map unit: 5 percent

Lithic xerumbrepts

Percent of map unit: 5 percent

167—Lithic Cryumbrepts-Rock outcrop-Windy family, moderately deep complex, 35 to 70 percent slopes

Map Unit Setting

National map unit symbol: hlxc

Elevation: 4,190 to 8,000 feet

Mean annual precipitation: 50 to 65 inches

Mean annual air temperature: 36 to 46 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Lithic cryumbrepts and similar soils: 40 percent

Rock outcrop: 25 percent

Windy family, moderately deep, and similar soils: 20 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lithic Cryumbrepts

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountain flank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: loam

H2 - 5 to 15 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 70 percent

Depth to restrictive feature: 5 to 9 inches to lithic bedrock

Natural drainage class: Excessively drained

Runoff class: Medium

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 5.95 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Tuff breccia

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 70 percent

Depth to restrictive feature: 0 to 0 inches to lithic bedrock

Natural drainage class: Excessively drained

*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately
low (0.00 to 0.06 in/hr)*

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam

H2 - 5 to 30 inches: very gravelly sandy loam

Custom Soil Resource Report

H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 70 percent

Depth to restrictive feature: 30 to 34 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Minor Components

Windy family, deep

Percent of map unit: 10 percent

Lithic xerumbrepts

Percent of map unit: 5 percent

193—Windy family, deep-Moderately deep complex, 5 to 35 per cent slopes

Map Unit Setting

National map unit symbol: hly5

Elevation: 4,190 to 8,000 feet

Mean annual precipitation: 50 to 65 inches

Mean annual air temperature: 39 to 46 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Windy family, deep, and similar soils: 50 percent

Windy family, moderately deep, and similar soils: 25 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windy Family, Deep

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Custom Soil Resource Report

Landform position (three-dimensional): Upper third of mountain flank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 7 inches: gravelly sandy loam
H2 - 7 to 52 inches: very gravelly sandy loam
H3 - 52 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 52 to 56 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountain flank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam
H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Minor Components

Rock outcrop

Percent of map unit: 10 percent

Lithic xerumbrepts

Percent of map unit: 10 percent

Holland family, deep, dark surface

Percent of map unit: 5 percent

194—Windy family, deep-Moderately deep complex, 35 to 50 percent slopes

Map Unit Setting

National map unit symbol: hly6

Elevation: 4,190 to 8,000 feet

Mean annual precipitation: 50 to 65 inches

Mean annual air temperature: 39 to 46 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Windy family, deep, and similar soils: 45 percent

Windy family, moderately deep, and similar soils: 25 percent

Minor components: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windy Family, Deep

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 7 inches: gravelly sandy loam

H2 - 7 to 52 inches: very gravelly sandy loam

H3 - 52 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent

Depth to restrictive feature: 52 to 56 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountain flank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam

H2 - 5 to 30 inches: very gravelly sandy loam

H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent

Depth to restrictive feature: 30 to 34 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Minor Components

Unnamed, clay loam subsoil

Percent of map unit: 10 percent

Holland family, deep, dark surface

Percent of map unit: 10 percent

Unnamed, light colored surface

Percent of map unit: 10 percent

196—Windy family, moderately deep-Deep complex, 35 to 60 percent slopes

Map Unit Setting

National map unit symbol: hly8
Elevation: 4,190 to 8,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Windy family, moderately deep, and similar soils: 50 percent
Windy family, deep, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam
H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Description of Windy Family, Deep

Setting

Landform: Mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 7 inches: gravelly sandy loam

H2 - 7 to 52 inches: very gravelly sandy loam

H3 - 52 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent

Depth to restrictive feature: 52 to 56 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Minor Components

Lithic xerumbrepts

Percent of map unit: 10 percent

Rock outcrop

Percent of map unit: 10 percent

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Mattley Meadow Restoration Project

Impacts to Aquatic Resources

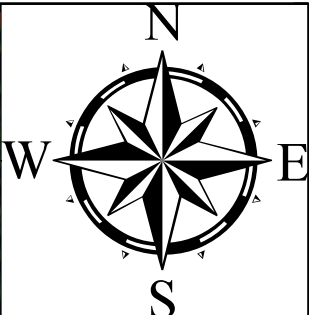
Calaveras County, CA

51.89 acres

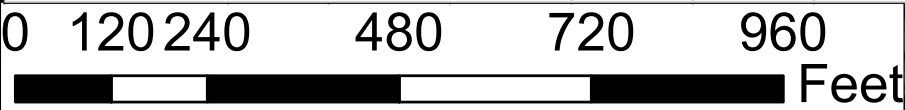
Attachment 8

Calaveras Dome and Tamarack USGS Quads

Please refer to delineation maps for more detail of aquatic resources. Direction of streamflow is to the north and northwest. Without intervention, xeric-trending meadow is likely to continue conversion to coniferous forest. Intervention entails filling gullied channels and returning system to sheetflow drainage. Base imagery source: USDA-FSA Aerial Photography Field Office. 2012. National Agricultural Imagery Program. Published August 28, 2012. Map prepared by Leslie Mink, February 20, 2020



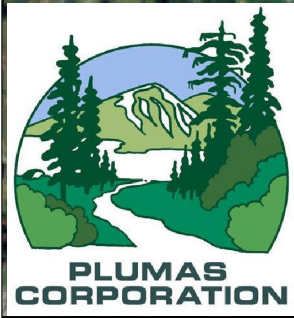
Map Area	Label	Type	Existing Area (ac)	Proposed Area (ac)	Existing Length (ft)	Proposed Length (ft)	Impact (ac)	Impact (ft)	Impact Type (cubic yards)
Mattley Creek	MC1	R4SB3 ¹	0.22	0.20	700	633	0.11	345	fill: 358 soil, 5 rock (6")
Mattley Creek	MWF1	PEM1 ²	0.02	1.56			0	0	0
Mattley Creek	MP1	L1OW ³	0.00	0.01					
Mattley Meadow	MC2	R4SB3	0.08	0.06	1652	1293	0.53	1504	fill: 4,418 soil
Mattley Meadow	MC3	R4SB5 ⁴	0.02	0	839	0	0.15	839	fill: 11,215 soil
Mattley Meadow	MWF2	PEM1	0.77	29.3			0	0	0
Mattley Meadow	MP2-9	L1OW	0.00	1.6					
Subtotal Riverine			0.32	0.26	3191	1926	0.79	2688	fill: 15,996
Subtotal Palustrine			0.78	30.86			0		
Subtotal Open water			0.00	1.61			0		
Subtotal All Wetland Types			1.10	32.73	3191	1926	0.79	2688	fill: 15,996
Mattley Creek	MUF1	Upland	8.72	7.19			0.2		cut: 358 soil
Mattley Meadow	MUF2	Upland	42.07	11.97			3.2		cut: 15,633 soil
Subtotal All Upland			50.79	19.16			3.4		cut: 15,991
Total Project Area			51.89	51.89	3191	1926	4.19	2688	
¹ Riverine, Intermittent, Streambed, Cobble-Gravel									
² Persistent, Emergent, Palustrine									
³ Lacustrine, Open Water, Unknown Bottom									
⁴ Riverine, Intermittent, Streambed, Mud									



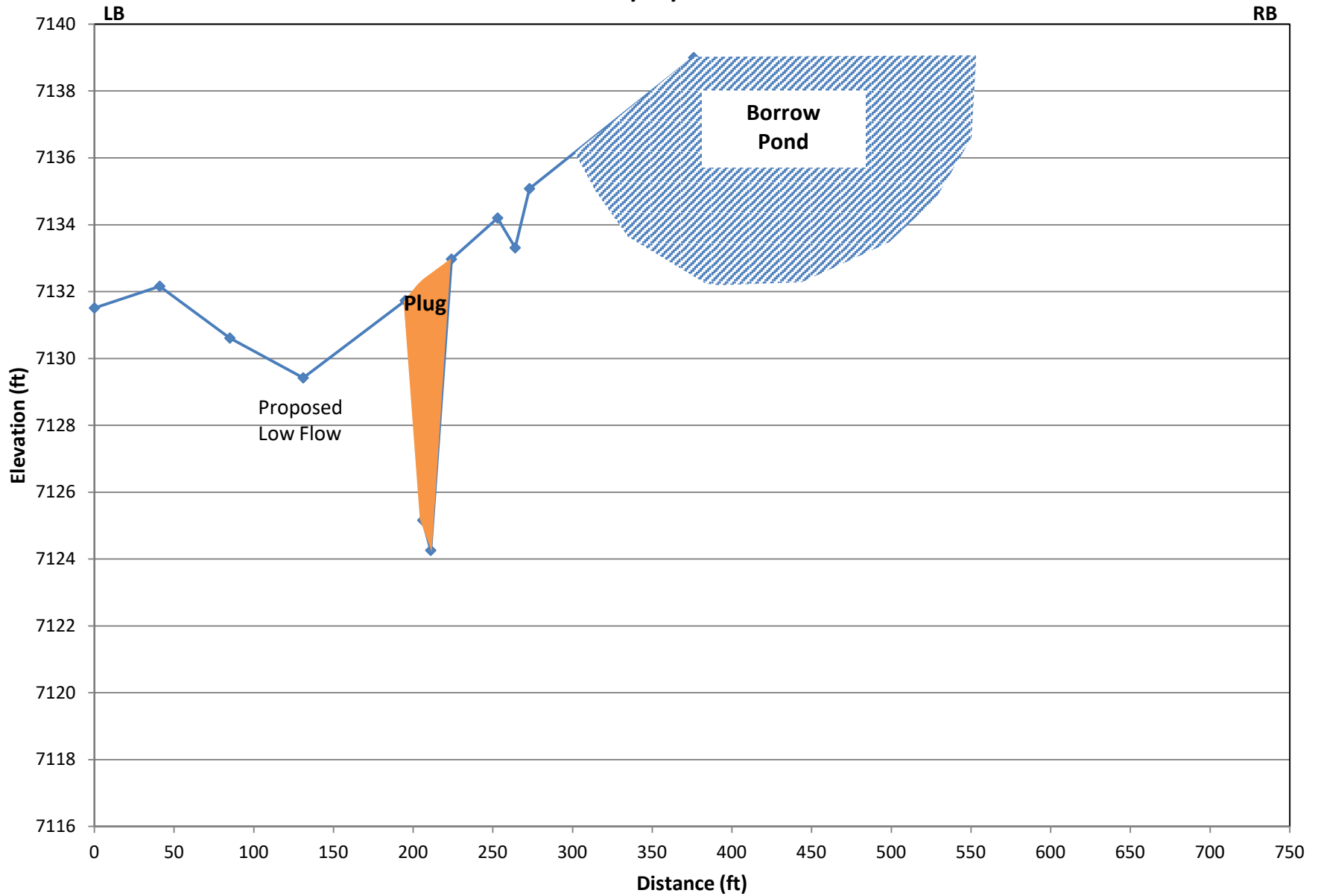
1 inch = 240 feet

Legend

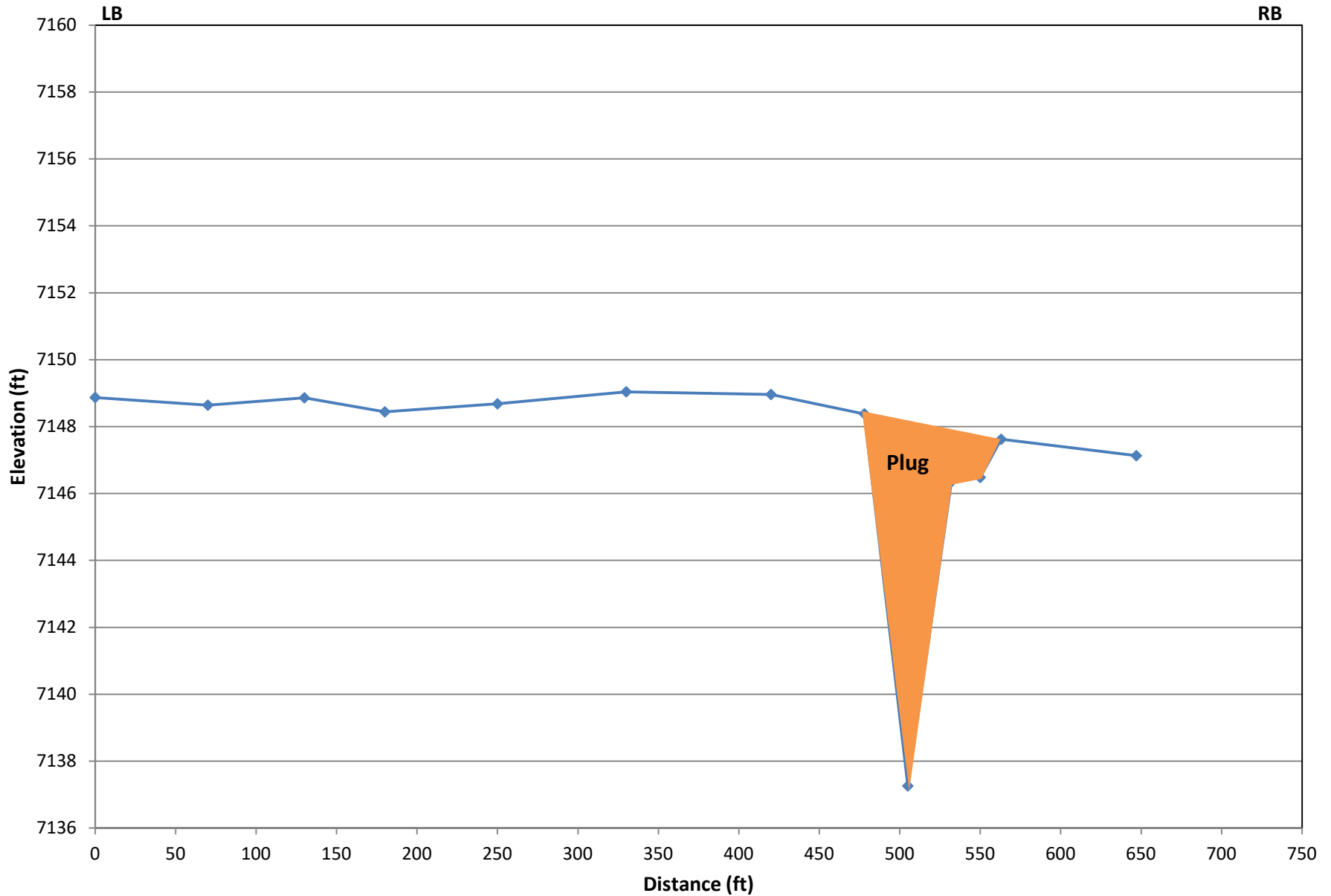
- Cross-section
- Existing Swale (Proposed Low Flow)
- Existing Trail
- Proposed Trail Reroute
- Existing Channel
- - - - - Proposed Palustrine Expansion
- Proposed Borrow Ponds
- Project Area Boundary
- Plugs
- Existing Palustrine
- ▲ Control Point



Mattley Meadow East- X-section #7 (proposed)
7/11/2014



Mattley Meadow West- X-section #11B (proposed)
7/21/2014



Mattley Creek- X-section #1 (proposed)
7/24/2014

