

APPENDIX B
DELINEATION OF WATERS
OF THE UNITED STATES

**County Road 305 over Watson
Creek Bridge Replacement Project**

Delineation of Waters of the United
States



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Project No 2272020025

December 2, 2019

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Executive Summary

On behalf of Glenn County Public Works Agency (County), Stantec Consulting Services Inc. (Stantec) conducted a delineation of waters of the United States occurring in the 6.28-acre County Road 305 over Watson Creek Bridge Replacement Project study area in Glenn County, California. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). The field delineation was conducted on June 14, 2019. A total of 0.557 acre of potential waters of the United States were mapped within the study area and include intermittent stream (0.147 acre, 255 linear feet) and seasonal wetland (0.410 acre).

The purpose of this delineation of waters of the United States is to document and describe potential waters of the United States to support a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers (Corps). This delineation is subject to verification by the Corps, Sacramento District. Stantec advises all parties to treat the information contained herein as preliminary until the Corps provides written verification of the boundaries of its jurisdiction.

If the Corps wishes to conduct a field verification, the County requests that the Corps contact Kevin Cook-Gutierrez, Assistant Engineer, Glenn County Public Works Agency by telephone at (530) 934-6530 or by email at KCook-Gutierrez@countyofglenn.net to schedule a date and time to access the study area.

Abbreviations

County	Glenn County Public Works Agency
Corps	United States Army Corps of Engineers
GPS	Global Positioning System
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
Stantec	Stantec Consulting Services Inc.
USGS	United States Geological Survey

COUNTY ROAD 305 OVER WATSON CREEK BRIDGE REPLACEMENT PROJECT

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December 2, 2019

1.0 PROJECT LOCATION

The study area is in a rural area approximately 5.5 miles north of the community of Elk Creek in Glenn County, California and it consists of a 1,125-foot alignment along County Road 305. This location can be found on the *Chrome, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 21N, Range 6E, Section 15. The approximate center of the study area is located at latitude 39.680275°, longitude -122.530174° (North American Datum 83). The study area location is shown in Figure 1.

To access the study area, from Interstate 5 in Willows, travel 20.5 miles west on CA-162. Turn right to stay on CA-162, continue straight on County Road 306 and travel approximately 5 miles to the intersection of County Road 305 & County Road 306. Turn right on County Road 305 where the Bridge crosses over Watson Creek approximately 360 feet east of the intersection of CR 305 & CR 306 (Figure 1).

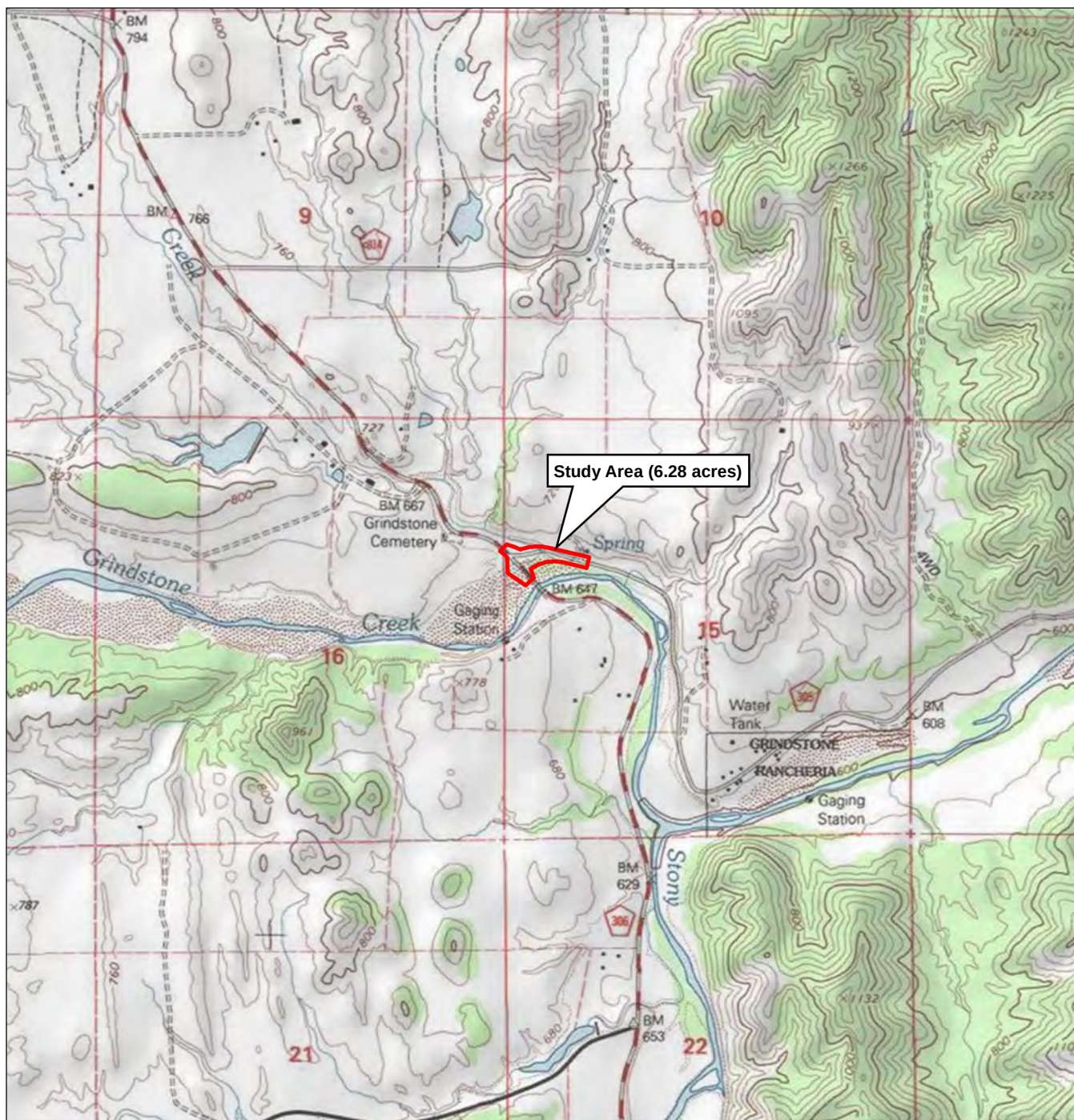
2.0 ENVIRONMENTAL SETTING

2.1 CURRENT/RECENT LAND USE

The study area is bounded by annual grassland which is grazed by cattle. There are two rural residences in the vicinity, one located approximately 0.15 mile north of the study area and one located approximately 0.15 mile south of the study area. County Road 305 serves as the only access to the Grindstone Rancheria, which is located approximately 0.4 mile to the southeast of the study area.

2.2 SITE TOPOGRAPHY AND ELEVATION

The topography of the study area immediately adjacent to Watson Creek consists of nearly level terraces. All adjacent land drains to Watson Creek and the seasonal wetland. The study area generally runs perpendicular to Watson Creek and curves to the south in the eastern and western portions, following the roadway alignment. The study area occurs at elevations between 639 and 648 feet.



Study Area Study Area (6.28 acres)

0 1,000 2,000 Feet
(At original document size of 8.5x11)
1:24,000



Project Location
T21N, R06E, S15
Glenn County, CA

Prepared by TH on 2019-07-23
TR by CF on 2019-07-25
IR Review by MEW on 2019-07-26

Client/Project
County of Glenn Public Works Agency
County Road 305 over Watson Creek
Bridge Replacement Project

227202025 REVA

Figure No.
1

Title
Study Area Location

Figure 1

Notes

1. Coordinate System: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

COUNTY ROAD 305 OVER WATSON CREEK BRIDGE REPLACEMENT PROJECT

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2.3 CLIMATE

Historical data used to describe the climate were collected at Stony Gorge Reservoir, California approximately 6.5 miles south of the study area (Western Regional Climate Center 2019). The climate data are described below:

Type: The climate of the area is characterized as Mediterranean with moderate winters and hot, dry summers.

Precipitation: Precipitation in the study area primarily occurs as rain. The average annual rainfall is approximately 20 inches.

Air Temperature: Air temperatures in the study area range between an average January high of 55 degrees Fahrenheit (°F), and an average July high of 97°F. The annual average high is approximately 75°F.

Growing Season: The growing season (i.e., 50% probability of air temperature 28 °F or higher) in the study area is approximately 280 days and occurs between March and November.

2.4 HYDROLOGY/HYDROLOGIC FEATURES

The hydrologic features in the study area include an intermittent stream (Watson Creek) and a seasonal wetland. Watson Creek flows to Grindstone Creek approximately 145 feet downstream of the study area. Grindstone Creek flows southeast to Stony Creek approximately 0.85 mile downstream of the confluence with Watson Creek. Stony Creek flows approximately 10.5 river miles to Black Butte Reservoir and then approximately 26 river miles from Black Butte Dam to the Sacramento River, a traditional navigable water (TNW).

The seasonal wetland is located to the southeast of the County Road 305 and County Road 306 intersection. The feature is lower in elevation than the immediate surrounding area and does not appear to have direct surface water connection to Watson Creek or Grindstone Creek. Hydrology for these features is generally provided by sheet flow, snow melt, springs, and groundwater originating in the mountains to the west of the study area. Drainage in the study area is primarily from west to east.

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2.5 SOIL MAP UNITS

Soil map units in and around the study area are shown in Figure 2. Four soil map units occur within the study area and are described in Table 1.

Table 1. Soil Map Units

Map Unit Name	Map Unit Code	Drainage Class	Depth to Restrictive Layer	Hydric Soil
Gravelly alluvial lands	Gr	Excessively Drained	60 inches	Yes
Orland-Cortina complex	Ox	Well Drained	60 inches	No
Riverwash	Rh	Excessively Drained	60 inches	Yes
Terrace escarpments	TpF	None	60 inches	No

2.6 VEGETATION COMMUNITIES

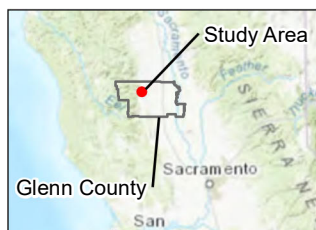
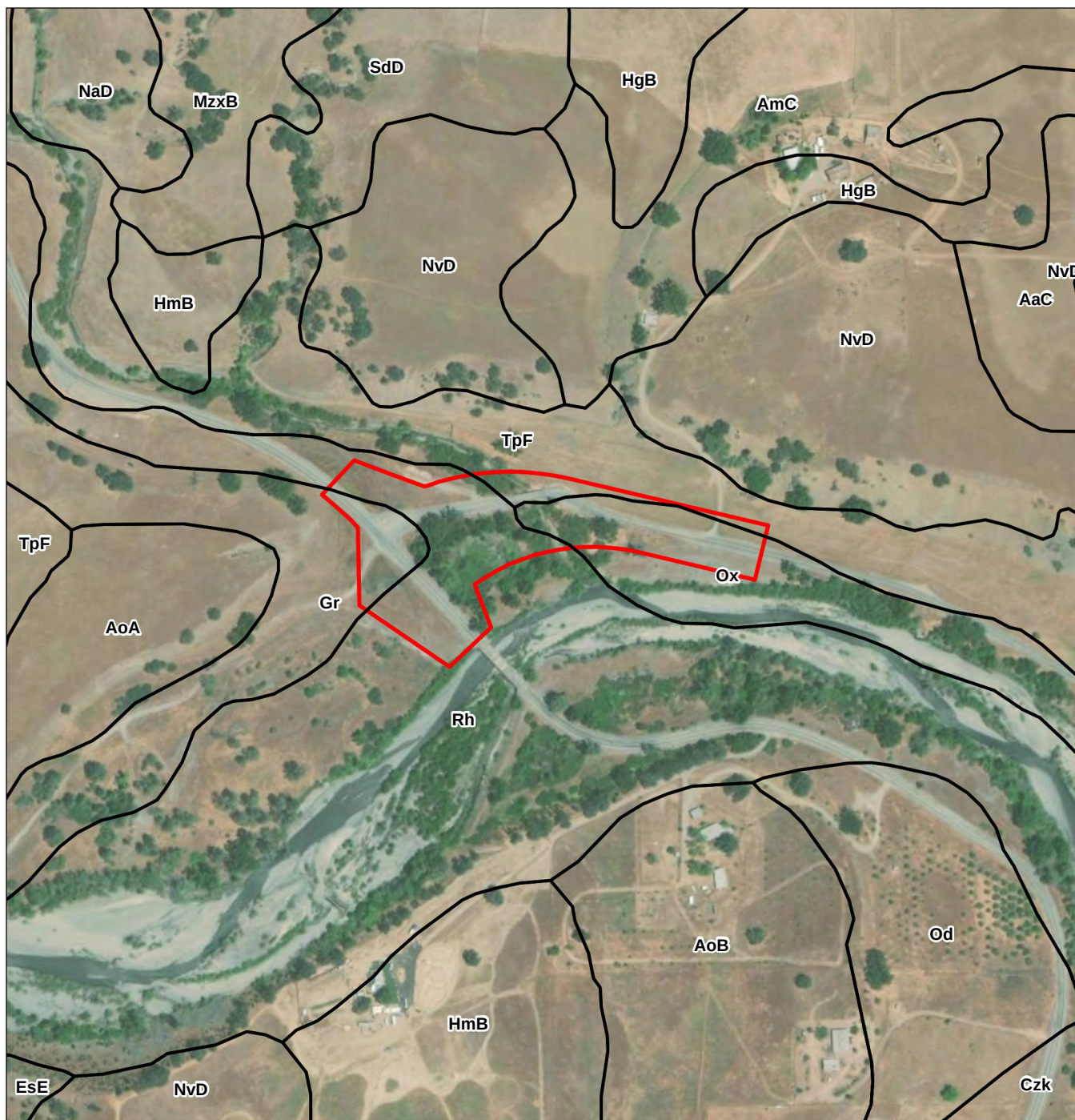
Vegetation communities are based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). Five vegetation communities or other habitats occur in the study area: annual grassland, riverine, valley foothill riparian, seasonal wetland, and barren/ruderal.

Annual Grassland. Annual grassland habitat is located throughout the study area. Annual grassland habitat is characterized by a dense herbaceous layer and is dominated by introduced annual grasses and forbs, including wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), rose clover (*Trifolium hirtum*), and yellow star-thistle (*Centaurea solstitialis*).

Riverine. Riverine habitat in the study area consists of Watson Creek. Watson Creek flows south through the study area and consists of run and riffle habitats dominated by cobble, gravel, and bedrock substrates. Vegetation within the stream channel is sparse, with scattered black willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), and invasive tamarisk (*Tamarix parviflora*) along the banks.

Valley Foothill Riparian. Valley foothill riparian habitat occurs adjacent to Watson Creek and around the edges of the seasonal wetland. Dominant species include valley oak (*Quercus lobata*), black walnut (*Juglans hindsii*), Fremont cottonwood, and blue elderberry (*Sambucus nigra* ssp. *caerulea*).

V:\272\active\2272020025\03_data\gis_cad\gis\mxd\welland_delin\2272020025_fig2_soil_types.mxd Revised: 2019-07-23 By: thanson



- Study Area (6.28 acres)
- Soil Map Units
- Gr—Gravelly alluvial lands
Ox—Orland-Cortina complex
Rh—Riverwash
TpF—Terrace escarpments

0 200 400 Feet
(At original document size of 8.5x11)
1:4,800



Project Location T21N, R06E, S15
Glenn County, CA
Prepared by TH on 2019-07-23
TR by CF on 2019-07-25
IR Review by MEW on 2019-07-26

Client/Project County of Glenn Public Works Agency
County Road 305 over Watson Creek
Bridge Replacement Project
2272020025

Figure No.
2

Title
Soil Types

Figure 2

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

COUNTY ROAD 305 OVER WATSON CREEK BRIDGE REPLACEMENT PROJECT

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December 2, 2019

Seasonal Wetland. Seasonal wetland habitat occurs to the southeast of the County Road 305 and County Road 306 intersection. This is a depressional feature that appears to hold water for extended periods of time. Dominant species include common cocklebur (*Xanthium strumarium*), narrow leaf cattail (*Typha angustifolia*), California bulrush (*Schoenoplectus californicus*), and buttonbush (*Cephalanthus occidentalis*).

Barren/Ruderal. Barren/ruderal habitat occurs as dirt and paved roads and their associated road shoulders. Vegetation is usually not present, although sparse opportunistic grasses and forbs or weedy species may occur.

3.0 METHODS

Stantec conducted an on-site routine delineation of wetlands and “other waters” of the United States based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of an ordinary high water mark (OHWM). This methodology is consistent with the approach outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). Plant taxonomy follows *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wetland indicator status for plant species was confirmed using *The National Wetland Plant List* (Lichvar et al. 2016), and the “50/20 Rule” or “Prevalence Index” was applied to determine plant dominance (U.S. Army Corps of Engineers 2008). Presence of primary and secondary wetland hydrology indicators were documented for each wetland feature.

Other waters are defined as traditional navigable waters and their tributaries (33 CFR 329). Delineation of other waters was based on presence of an OHWM as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to waters of the United States. Physical characteristics of an OHWM include, but are not limited to the following conditions: a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washed away, scour, deposition, presence of bed and bank, and water staining. At least one data point was selected to best represent the OHWM of other waters for each other waters type.

Prior to conducting the on-site routine delineation, the U.S. Fish and Wildlife Service's, National Wetlands Inventory (NWI) Wetlands Mapper (U.S. Fish and Wildlife Service 2019) was reviewed to determine if any wetlands or deepwater habitats as described by Cowardin et al. (1979) were previously mapped in the study area and general vicinity. Features delineated during the on-site routine delineation were classified using Cowardin (1979) based on existing NWI mapping, or assigned a Cowardin type if not previously mapped.

Three data points were used to characterize and document each wetland and other water feature type. Field observations were conducted on June 14, 2019.

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December 2, 2019

The boundaries of delineated features and the associated data points were mapped using an ArcGIS Collector with a Global Positioning System (GPS) receiver capable of sub-meter accuracy. Where the use of the GPS was not practicable, or satellites were not available, the features were delineated by hand onto ortho-rectified color aerial photographs. The GPS and hand-drawn location data were overlaid onto an aerial photograph of the study area to develop the delineation map.

4.0 RESULTS AND DISCUSSION

Potential waters of the United States occur in the study area as wetlands and other waters and include intermittent stream and seasonal wetland.

The boundaries and area of potential waters of the United States occurring in the study area are illustrated in Figure 3. A total of 0.557 acre of potential waters of the United States was delineated. A summary of the delineated features is presented in Table 2. Routine wetland determination data forms are presented in Appendix A. Representative photographs of the delineated features and data point locations are presented in Appendix B.

Table 2. Potential Waters of the United States Summary

Waters of the United States	Total Acreage	Total Linear Feet	Cowardin Type ¹
Wetlands			
Seasonal Wetland	0.410		PUB3E
Other Waters			
Intermittent Stream	0.147	255	R4SB3C
Total Waters of the United States	0.557	255	

4.1 CHARACTERIZATION OF DELINEATED FEATURES

4.1.1 Intermittent Stream (Watson Creek)

Intermittent streams flow seasonally, but are fed by a groundwater component in addition to precipitation and sheet flow from adjacent slopes. One intermittent stream (Watson Creek; IS-1) occurs in the study area and is characterized as a bed and bank feature that exhibits indicators of scour, deposition, watermarks, and drift lines. The intermittent stream ranges from 20 to 30 feet wide. Cobble, gravel, sand, and bedrock dominate the stream substrate. Watson Creek flows to Grindstone Creek approximately 145 feet downstream of the study area. Grindstone

¹ Cowardin et al. 1979

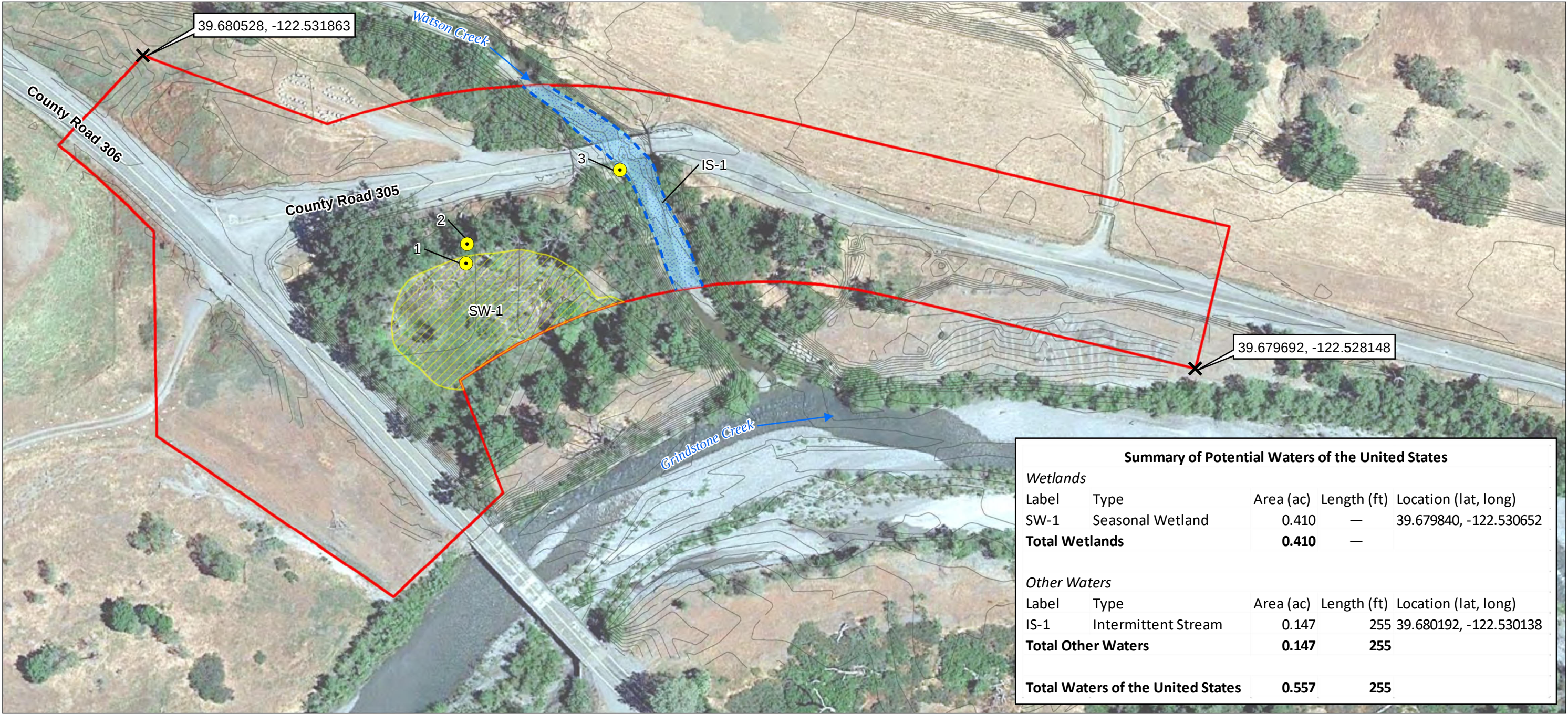
COUNTY ROAD 305 OVER WATSON CREEK BRIDGE REPLACEMENT PROJECT

County Road 305 over Watson Creek Bridge Replacement Project
December 2, 2019

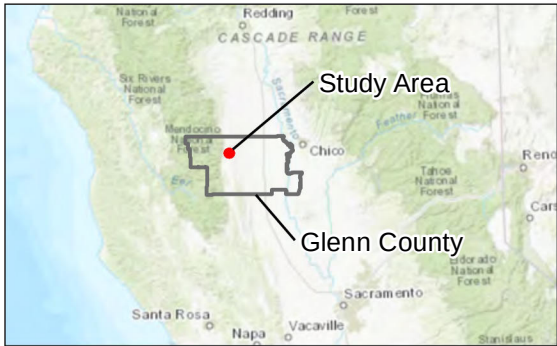
Creek flows southeast into Stony Creek approximately 0.85 mile downstream of the confluence with Watson Creek. Stony Creek flows approximately 10.5 river miles to Black Butte Reservoir and then approximately 26 river miles from Black Butte Dam to the Sacramento River, a traditional navigable water (TNW).

4.1.2 Seasonal Wetland

One seasonal wetland occurs in the study area and is characterized as a closed, depressional feature that is several feet lower in elevation than the surrounding land. Hydrophytic vegetation such as narrow leaf cattail (*Typha angustifolia*), cocklebur (*Xanthium strumarium*), and California bulrush (*Schoenoplectus californicus*) are dominant species throughout the seasonal wetland. The seasonal wetland appears to fill with rainwater and runoff and hold water for extended periods of time. No culverts or direct surface water connection from the seasonal wetland to Watson Creek or Grindstone Creek were observed during the field delineation.



Summary of Potential Waters of the United States				
Wetlands				
Label	Type	Area (ac)	Length (ft)	Location (lat, long)
SW-1	Seasonal Wetland	0.410	—	39.679840, -122.530652
Total Wetlands		0.410	—	
Other Waters				
Label	Type	Area (ac)	Length (ft)	Location (lat, long)
IS-1	Intermittent Stream	0.147	255	39.680192, -122.530138
Total Other Waters		0.147	255	
Total Waters of the United States		0.557	255	



Notes:
1. Delineator: Chariss Femino
2. Delineation Date: June 14, 2019
3. Coordinate System: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US
4. Aerial Imagery: Georeferenced Google Imagery, May 21, 2017
5. This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). Stantec advises all parties that the delineation is preliminary until the Corps provides a written verification.

- Study Area (6.28 acres)
- X Map Reference Point
- One-Foot Contours
- Data Point

- Potential Waters of the United States**
- Wetlands**
- Seasonal Wetland
- Other Waters**
- Intermittent Stream
 - Ordinary High Water Mark

0 100 200 Feet
(At original document size of 11x17)
1:1,200



Project Location
T21N, R06E, S15
Glenn County, CA

Prepared by TH on 2019-09-24
TR by CF on 2019-09-24
IR Review by MEW on 2019-09-26

Client/Project
County of Glenn Public Works Agency
County Road 305 over Watson Creek
Bridge Replacement Project

Figure No.
3

Title
Potential Waters of the United States

COUNTY ROAD 305 OVER WATSON CREEK BRIDGE REPLACEMENT PROJECT

County Road 305 over Watson Creek Bridge Replacement Project
December 2, 2019

5.0 CONCLUSION

Potential waters of the United States delineated within the study area occupy a total of 0.557 acre (255 linear feet) and occur as intermittent stream and seasonal wetland.

Determinations of waters of the United States, including wetlands, are based on current conditions, (i.e., normal circumstances) and made in accordance with relevant U.S. Environmental Protection Agency and Corps guidance. Determinations are subject to verification by the Corps. Stantec advises all interested parties to treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the Corps.

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County Road 305 over Watson Creek Bridge Replacement Project
December 2, 2019

6.0 REFERENCES

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- U.S. Army Corps of Engineers. 2008. Regional supplement to the Corps of Engineers wetland delineation manual: arid west region (version 2.0): U.S. Army Engineer Research and Development Center.
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- Western Regional Climate Center. 2019. Stony Gorge Reservoir, California (048587) Period of Record Monthly Climate Summary, Period of Record: 11/01/1926 to 06/10/2016. Accessed July 25, 2019.

APPENDIX A
ROUTINE WETLAND DETERMINATION
DATA FORMS



North State Resources, Inc. now



Stantec

Wetland Determination Data Form-Arid West Region

Data Point DPI
Feature Type wetland

Project/Site: CR 305 @ Watson Creek City/County: Glenn County Date: 6/14/19
 Applicant/Owner: Glenn County State: CA
 Investigator(s): Chariss, Femido Section, Township, Range S15, T21N, R06E
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none) Concave Slope % 0
 Subregion (LRR): C Lat: 39.6799165 Long: -122.530720 Datum: NAD 83
 Soil Map Unit Name: Riverwash NWI Classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? (Y)N (If no, explain in Remarks.)Are vegetation Y (N), soil Y (N) or hydrology Y (N) significantly disturbed? Are normal circumstances present? (Y)NAre vegetation Y (N), soil Y (N) or hydrology Y (N) naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? (Y)N Hydric soil? (Y)N Wetland hydrology? (Y)N Is sampled area a wetland? (Y)N Other waters? Y (N)

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks

Point taken @ edge of large depression feature.
 No soil pit dug because of potential underground cable - hydrology
 and hydrophytic veg indicators are strong. Within mapped hydric soil unit.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size:)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			

50%= 20%= Total Cover: Sapling/Shrub Stratum (Plot:)

	% Cover	Species?	Status
1.			
2.			
3.			
4.			

50%= 20%= Total Cover: Herb Stratum (Plot Size:)

	% Cover	Species?	Status
1. <u>Xanthium strumarium</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2. <u>Polypogon monspeliensis</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
3. <u>Typha angustifolia</u>	<u>4</u>	<u>Y</u>	<u>OBL</u>
4. <u>Rumex crispus</u>	<u>1</u>	<u>N</u>	<u>FAC</u>
5.			
6.			
7.			
8.			

50%= 20%= Total Cover: 95Woody/Vine Stratum (Plot:)

	% Cover	Species?	Status
1.			
2.			

50%= 20%= Total Cover: % Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 100

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)Total number of dominant species across all strata: 2 (B)Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

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 =

Hydrophytic Vegetation Indicators

X Dominance Test is >50%
 Prevalence Index is ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? (Y)N

Remarks

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type ¹	Loc ²	Texture	Remarks

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)****Indicators for Problematic Hydric Soils³**

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vetric (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Materials (TF21)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Vegetated Sand/Gravel Bars
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	☐ 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.Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y N**Remarks** no soil pit dug - underground cable markers nearby soil is within a mapped hydric soil unit.**Hydrology****Wetland Indicators**

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

☐ 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 (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 Plowed 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

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y N

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, and previous inspections), if available:**Remarks**aerial photos



North State Resources, Inc. now



Stantec

Wetland Determination Data Form-Arid West Region

Data Point

DP 2

Feature Type

upland

Project/Site: AR 305 @ Watson Creek

City/County: Glenn County

Date: 6/14/19

Applicant/Owner:

Glenn County

State:

CA

Investigator(s):

Chariss Feminio

Section, Township, Range

S15, T21N, R06E

Landform (hillslope, terrace, etc.):

hillslope

Local relief (concave, convex, none)

convex

Slope %

5

Subregion (LRR):

C

Lat:

39.680018

Long:

-122.530717

Datum:

NAD 83

Soil Map Unit Name:

Riverwash

NWI Classification:

N/A

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Y ☐ N (If no, explain in Remarks.)Are vegetation ☒ Y ☐ N, soil ☒ Y ☐ N, or hydrology ☒ Y ☐ N significantly disturbed? Are normal circumstances present? ☒ Y ☐ NAre vegetation ☒ Y ☐ N, soil ☒ Y ☐ N, or hydrology ☒ Y ☐ N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? ☒ Y ☐ N Hydric soil? ☒ Y ☐ N Wetland hydrology? ☒ Y ☐ N Is sampled area a wetland? ☒ Y ☐ N Other waters? ☒ Y ☐ N

Evaluation of features designated "Other Waters of the United States"

Indicators:

Defined bed and bank

Scour

Ordinary High Water Mark Mapped

Stream Width

Feature Designation: Perennial

Intermittent

Ephemeral

Blue-line on USGS Quad

Substrate

Natural Drainage

Artificial Drainage

Navigable Water

Remarks

upland point to DPL. Taken upslope from DPL and outside of depressional feature boundaries.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size:)

1. Q. lobata

Absolute % Cover

25

Dominant Species?

yes

Indicator Status

FACU

2. _____

3. _____

4. _____

50%=

20%=

Total Cover:

Sapling/Shrub Stratum (Plot:)

1. Sambucus nigra

% Cover

5

Species?

no

Status

FACU

2. _____

3. _____

4. _____

50%=

20%=

Total Cover:

Herb Stratum (Plot Size:)

1. Arena fatua

% Cover

25

Species?

yes

Status

UPL

2. Zizyus caput-medusae

5

no

UPL

3. Galium californicum

20

yes

UPL

4. Gnaphalium luteo-album

3

no

UPL

5. _____

6. _____

7. _____

8. _____

50%=

20%=

Total Cover:

53

Woody/Vine Stratum (Plot:)

1. _____

% Cover

Species?

Status

2. _____

50%=

20%=

Total Cover:

% Bare Ground in Herb Stratum 30

% Cover of Biotic Crust

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 6 (A)

Total number of dominant species across all strata: 3 (B)

Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

Total % Cover of: Multiply by

OBL Species 0 x 1 =

FACW Species 0 x 2 =

FAC Species 0 x 3 =

FACU Species 30 x 4 = 120

UPL Species 53 x 5 = 265

Column Totals 83 (A) 385 (B)

Prevalence Index = B/A = 4.64

Hydrophytic Vegetation Indicators

Dominance Test is >50%

Prevalence Index is ≤ 3.0¹Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)Problematic Hydrophytic Vegetation¹ (Explain)¹Indicators of hydric soil and wetland hydrology must be present.Hydrophytic Vegetation? ☒ Y ☐ N

Remarks

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type ¹	Loc ²	Texture	Remarks

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)****Indicators for Problematic Hydric Soils³**

_____ Histosol (A1)	_____ Sandy Redox (S5)	_____ 1 cm Muck (A9) (LRR C)
_____ Histic Epipedon (A2)	_____ Stripped Matrix (S6)	_____ 2 cm Muck (A10) (LRR B)
_____ Black Histic (A3)	_____ Loamy Mucky Mineral (F1)	_____ Reduced Vertic (F18)
_____ Hydrogen Sulfide (A4)	_____ Loamy Gleyed Matrix (F2)	_____ Red Parent Materials (TF21)
_____ Stratified Layers (A5) (LRR C)	_____ Depleted Matrix (F3)	_____ Vegetated Sand/Gravel Bars
_____ 1 cm Muck (A9) (LRR D)	_____ Redox Dark Surface (F6)	_____ 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.Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y / N**Remarks**no soil pit - underground cable nearby - no 811**Hydrology****Wetland Indicators****Primary Indicators (Any one indicator is sufficient.)****Secondary Indicators (2 or more required)**

_____ 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 (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 Plowed 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

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y / N

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, and previous inspections), if available:aerial photos**Remarks**Upland pt taken upslope on terrace - outside of wetland depression

Wetland Determination Data Form-Arid West Region

Data Point DP 3
Feature Type int. stream

Project/Site: CR 305 @ Watson Creek City/County: Glenn County Date: 6/14/19
Applicant/Owner: Glenn County State: CA
Investigator(s): Chariss Ferdino Section, Township, Range S15, T21N, R06E
Landform (hillslope, terrace, etc.) streambed Local relief (concave, convex, none) concave Slope %
Subregion (LRR): C Lat: 39.680224 Long: -122.530180 Datum: NAD 83
Soil Map Unit Name: Orland-Cortina Complex NWI Classification: R43BC

Are climatic/hydrologic conditions on the site typical for this time of year? Y/N (If no, explain in Remarks.)

Are vegetation Y/N, soil Y/N, or hydrology Y/N significantly disturbed? Are normal circumstances present? Y/N

Are vegetation Y/N, soil Y/N, or hydrology Y/N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y/N Hydric soil? Y/N Wetland hydrology? Y/N Is sampled area a wetland? Y/N Other waters? Y/N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank X Scour X Ordinary High Water Mark Mapped X Stream Width 30'
Feature Designation: Perennial X Intermittent X Ephemeral X Blue-line on USGS Quad X Substrate gravel
Natural Drainage X Artificial Drainage X Navigable Water X

Remarks

pt taken @ OTHM - algal overgrowth in water gravel substrate
small fish ~ 2-3" swimming in water

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____			
2. _____			
3. _____			
4. _____			
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____			
2. _____			
50%= _____ 20%= _____ Total Cover: _____			

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

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: _____ (AB)

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 = _____

Hydrophytic Vegetation Indicators

_____ Dominance Test is >50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y/N

Remarks

Tamarix parviflora growing nearby on creek bank above OTHM.

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type ¹	Loc ²	Texture	Remarks

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)****Indicators for Problematic Hydric Soils³**

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vetric (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Materials (TF21)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Vegetated Sand/Gravel Bars
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	☐ 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.

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y / N

RemarksN/A - OHWM pt**Hydrology****Wetland Indicators****Primary Indicators (Any one indicator is sufficient.)****Secondary Indicators (2 or more required)**

☒ 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 (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 Plowed 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

Surface Water Present? Yes ☒ No ☐ Depth (inches) 16" Wetland Hydrology? ☒ Y ☐ N

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

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

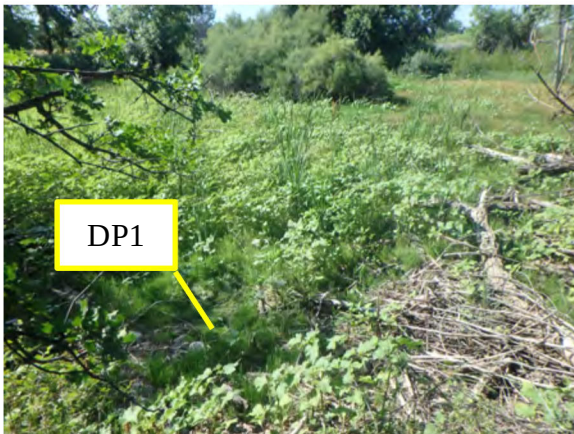
Describe Recorded Data (stream gauge, monitoring well, aerial photos, and previous inspections), if available:aerial photos**Remarks**surface water present @ time of survey. Small fish swimming in water.

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

County Road 305 over Watson Creek Bridge Replacement Project Delineation of Waters of the United States

Photographs Taken June 14, 2019



Photograph 1. Seasonal Wetland (SW)-1. Data point (DP) 1 documents the wetland boundary. Orientation: southeast.



Photograph 2. DP2 documents the uplands adjacent to SW-1. Orientation: northwest.



Photograph 3. IS-1. DP3 documents the OHWM of the feature. Orientation: southeast.



Photograph 4. SW-1 looking south towards riparian habitat outside of BSA. No obvious surface water connection from SW-1 to Watson Creek or Grindstone Creek. Orientation: south.