Appendix B

Biological Resource Documentation

SHN Biological and Wetland Assessment, August 2019

CDFW Consultation Response Letter-Public Utility Exemption

U.S. Fish and Wildlife Service List of Threatened and Endangered Species

National Marine Fisheries Service List of Threatened and Endangered Species, Critical Habitat, and Essential Fish Habitat

California Natural Diversity Database Summary

California Native Plant Society Summary

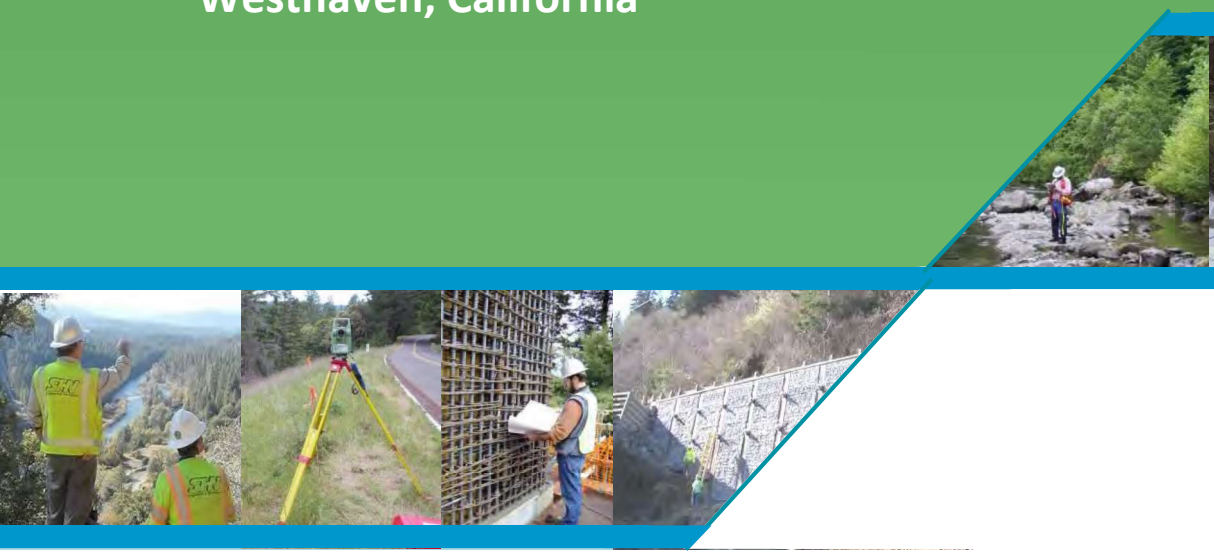
ENPLAN Summary Report: Potential for Special-Status Species to Occur on the Project Site

List of Vascular Plants Observed: May 14 and 15, 2021; September 24 and 25, 2021

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Biological and Wetland Assessment

Assessor's Parcel Numbers:
514-133-001 514-132-007
514-132-008 513-181-014
Westhaven, California



Prepared for:
Westhaven Community Services District

August 2019
018193.100

Reference: 018193.100

Biological and Wetland Assessment

Assessor's Parcel Numbers:

514-133-001 514-132-007

514-132-008 513-181-014

Westhaven, California

Prepared for:
Westhaven Community Services District

Prepared by:

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August 2019

QA/QC:SEC

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Table of Contents

Page

List of Illustrations ii

Abbreviations and Acronyms iii

1.0 Introduction 1
- 1.1 Purpose 1
- 1.2 Project Location 1

2.0 Project Description 1

3.0 Environmental Setting 1
- 3.1 Site Uses 1
- 3.2 Site Hydrology 2
- 3.3 National Wetlands Inventory 2

4.0 Vegetation 3

5.0 Geologic and Soil Composition 4

6.0 Regulatory Setting 7
- 6.1 Federal Laws 7
  - 6.1.1 Section 401 and 404 of the Clean Water Act 7
  - 6.1.2 Fish and Wildlife Coordination Act 8
  - 6.1.3 Rivers and Harbors Appropriation Act of 1899 8
  - 6.1.4 Federal Endangered Species Act 8
  - 6.1.5 Migratory Bird Treaty Act 9
- 6.2 State Laws 9
  - 6.2.1 California Coastal Act 9
  - 6.2.2 Porter-Cologne Water Quality Control Act 10
  - 6.2.3 California Endangered Species Act 11
  - 6.2.4 California Environmental Quality Act 11
  - 6.2.5 California Fish and Game Code Section 1600 12
  - 6.2.6 California Fish and Game Code Sections 3503 and 3513 13
  - 6.2.7 Fully Protected Species and Species of Special Concern 13
  - 6.2.8 Native Plant Protection Act of 1973 13
  - 6.2.9 Natural Community Conservation Planning Act 14
- 6.3 Local Regulations 14
  - 6.3.1 Humboldt County General Plan 14
  - 6.3.2 Humboldt County General Plan Volume II Trinidad Area Plan of the Humboldt County Local Coastal Program 14

7.0 Methodology 14
- 7.1 Biological Assessment Methodology 14
  - 7.1.1 Biological Investigation 15
- 7.2 Wetland Assessment Methodology 15
- 7.3 Vegetation Methodology 16
- 7.4 Soils Methodology 17
- 7.5 Hydrology Methodology 17
- 7.6 Ordinary High Water Mark Methodology 18

8.0 Discussion and Results 18

Table of Contents, Continued

Page

8.1 Biological Results and Discussion....18
8.1.1 Natural Communities....19
8.1.2 Special-status Plant Species....19
8.1.3 Special-status Animal Species....22
8.2 Wetland Results and Discussion....23
8.2.1 TP1 (Wetland #1-CCC)....24
8.2.2 TP2....24
8.2.3 TP3....25
8.2.4 TP4....25
8.2.5 TP5....25
8.2.6 TP6....26
8.2.7 TP7....26
8.2.8 TP8....26
8.2.9 TP9, TP10, TP11 paired plots (Wetland #2-USACE)....27
8.3 Ordinary High Water Mark (OHWM)....28

9.0 Conclusions....28
9.1 Biological results....28
9.2 Wetland and OHWM Results....29

10.0 Limitations....30

11.0 Recommendations....30

12.0 References Cited....31

Appendices

1. Site Photographs
2. National Wetlands Inventory
3. Species List
4. Wetland Determination Data Forms

List of Illustrations

Figures **Follows Page**

1. Project Location....1
2. Study Area - Well Site....1
3. Study Area - Water Treatment Site....1

Tables **On Page**

1. WETS Rainfall Data....2
2. TP Parameter Results, April 3, April 10, and April 18, 2019....29
3. Wetland Delineation Results, April 3, April 10, and April 18, 2019....30

Abbreviations and Acronyms

C	Celsius
ft	feet
ft^2	square feet
km	kilometer
mi	mile
ppt	parts per thousand
APN	Assessor's parcel number
BCC	bird of conservation concern
C	candidate
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDEC	California Data Exchange Center
CDFW	California Department of Fish & Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
CT	control point
CWA	Clean Water Act
D	delisted
DPS	distinct population segment
E	endangered
EPA	United States Environmental Protection Agency
ERDC/CRREL	United States Army Engineer Research and Development Center/Cold Regions Research and Engineering Laboratory
ESHA	Environmentally sensitive habitat area
ESU	evolutionary significant unit
FAC	facultative wetland plant species
FACU	facultative-upland plant species
FACW	facultative-wet wetland plant species
FESA	Federal Endangered Species Act
FP	fully protected
G1/S1	critically imperiled species heritage rank
G2/S2	imperiled species heritage rank
G3/S3	vulnerable species heritage rank
G4/S4	apparently secure species heritage rank
G5/S5	secure species heritage rank
GIS	geographic information system
GPS	global positioning system
IM	imperiled
IPaC	Information for Planning and Conservation
LCP	Local Coastal Program
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NEPA	National Environmental Policy Act
NL	not listed wetland plant species
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NT	near threatened
NPPA	Native Plant Protection Act
NWI	National Wetlands Inventory
OBL	obligate wetland plant species
OHWM	ordinary high water mark
PEM1C	Palustrine emergent persistent seasonally flooded/saturated
PEM2C	Palustrine emergent nonpersistent seasonally flooded /saturated
PT	proposed threatened
Redox	redoximorphic
RWQCB	Regional Water Quality Control Board
S	sensitive

Abbreviations and Acronyms, Continued

SAA	Streambed Alteration Agreement
SSC	species of special concern
SWRCB	State Water Resources Control Board
T	threatened
TP	test pit
UCB	University of California, Berkeley
UPL	upland plant species
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
VU	vulnerable
WCSD	Westhaven Community Services District
WDR	Waste Discharge Requirement
WETS	Climate Analysis for Wetlands Tables
WL	watch list
WoS	waters of the State
WoUS	waters of the United States
WTP	water treatment plant

1.0 Introduction

SHN has prepared this combined biological resource assessment and wetland and other waters delineation for Westhaven Community Services District (WCSD) in Westhaven, California. The project study area addresses two sites: the well site and the water treatment site. The well site study area is in the "local" portion of the coastal zone while the water treatment site study area is outside the coastal zone (Figure 1). Fieldwork was performed by SHN staff soil scientists, botanists, and biologist.

1.1 Purpose

The purpose of this report is to evaluate the potential for special-status biological resources and potential jurisdictional wetlands and other waters at the project sites. The results of this study will be used to determine suitable locations for proposed groundwater wells and geotechnical borings and avoid or minimize impacts to special-status biological resources and potential jurisdictional wetlands and other waters.

1.2 Project Location

The project location is in the unincorporated community of Westhaven, California (Figure 1; United States Geological Survey [USGS] Crannell 7.5-minute Quadrangle (USGS, 2018); Township 08 north, Range 01 east, Sections 31 and 32 (in the Humboldt Meridian). The Assessor's parcel numbers (APNs) are 514-132-007, 514-132-008, and 514-133-001 at the well site, with a 0.81-acre study area (Figure 2). The APN is 513-181-014 at the water treatment plant site with a 2.3-acre study area (Figure 3). The well site is approximately 1,200 feet east of US 101, while the water treatment site is 3,150 feet east of US 101 at the nearest point.

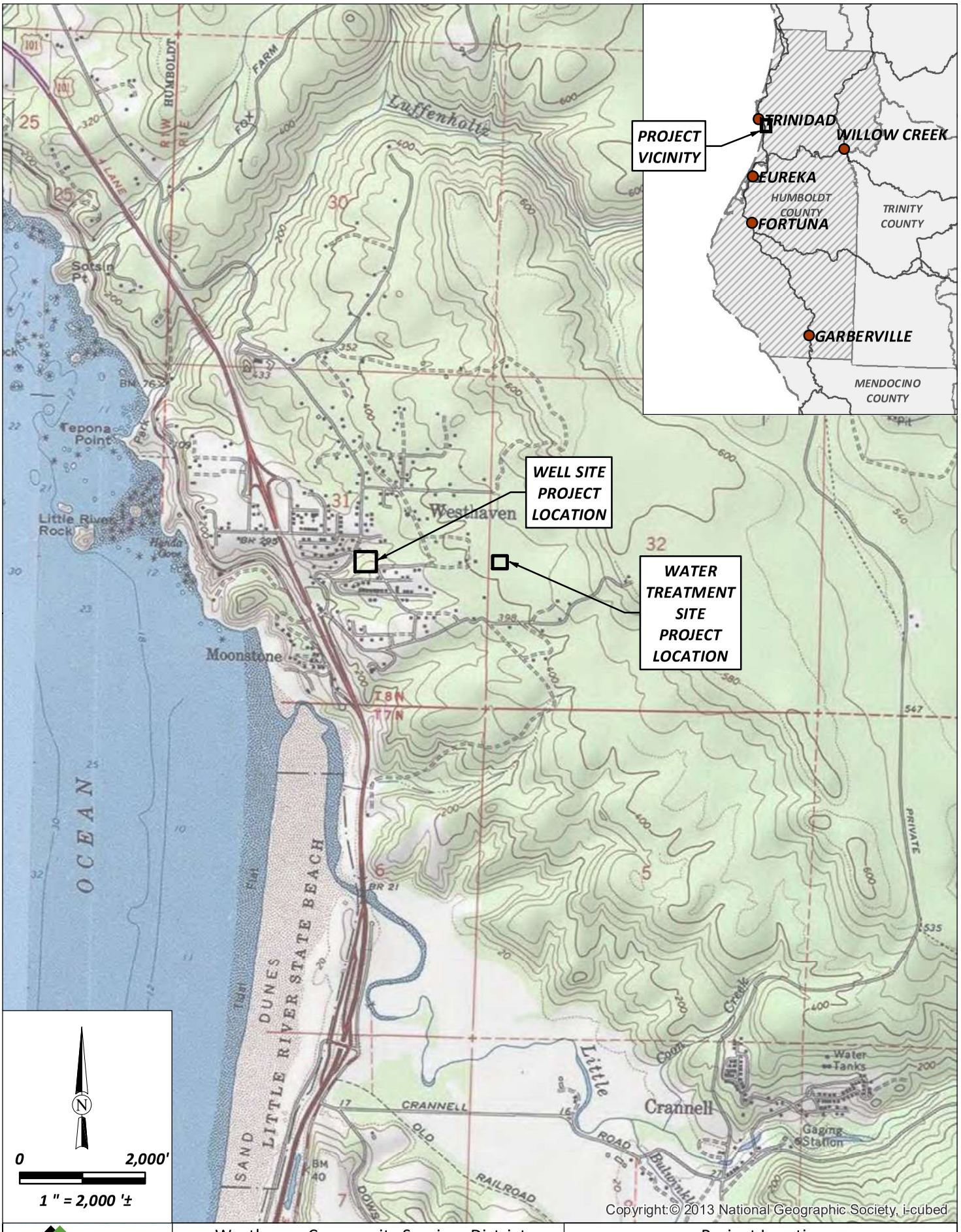
2.0 Project Description

WCSD is a community water system serving approximately 467 people and 228 service connections, and has both groundwater and surface water as raw water sources. In December 2017, WCSD was issued a Compliance Order by the State Water Resources Control Board (SWRCB) for consistently exceeding maximum contamination levels of disinfection byproducts. The District is in the planning phase of determining the best solution to the exceedances. Potential solutions being considered at this time include 1) establishing additional groundwater wells to dilute the disinfection byproducts with additional groundwater, or 2) making improvements to the existing water treatment plant (WTP). To that end, the planning phase of the project proposes 1) the installation of several water wells on APNs 514-132-007, 514-132-008, and 514-133-001 (Appendix 1, Photo 1), and several geotechnical borings at the WTP (APN 513-181-014 [Appendix 1, Photo 2]) for potential WTP improvements that may be evaluated. Minor grading may be required on APNs 514-132-007, 514-132-008, and 514-133-001 to provide temporary access so that a drill rig can install the wells. No grading efforts are anticipated in order to facilitate the installation of the geotechnical borings.

3.0 Environmental Setting

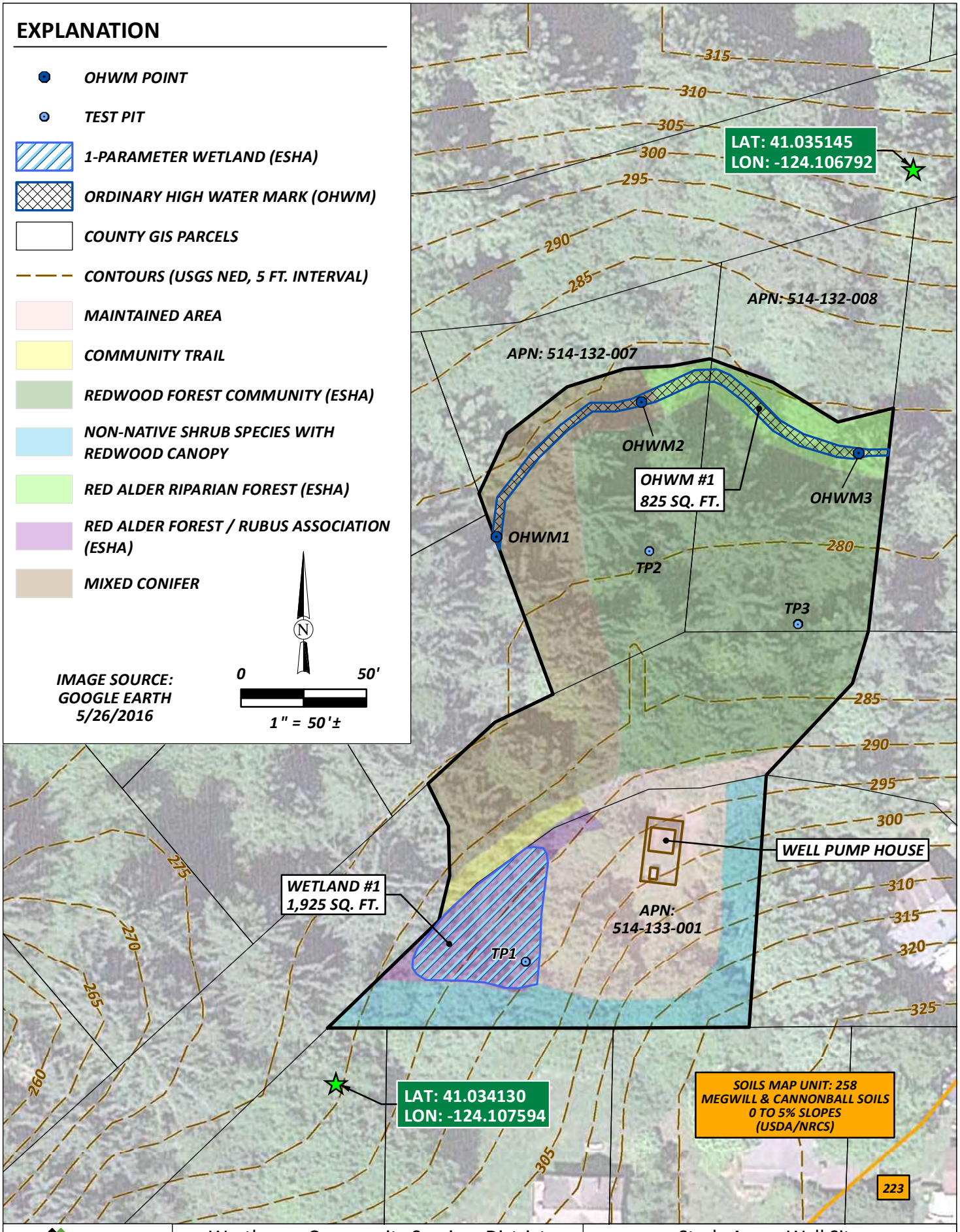
3.1 Site Uses

These sites are current locations of an existing well and water tanks with a water treatment facility for the WCSD (Appendix 1, Photos 1 and 2).



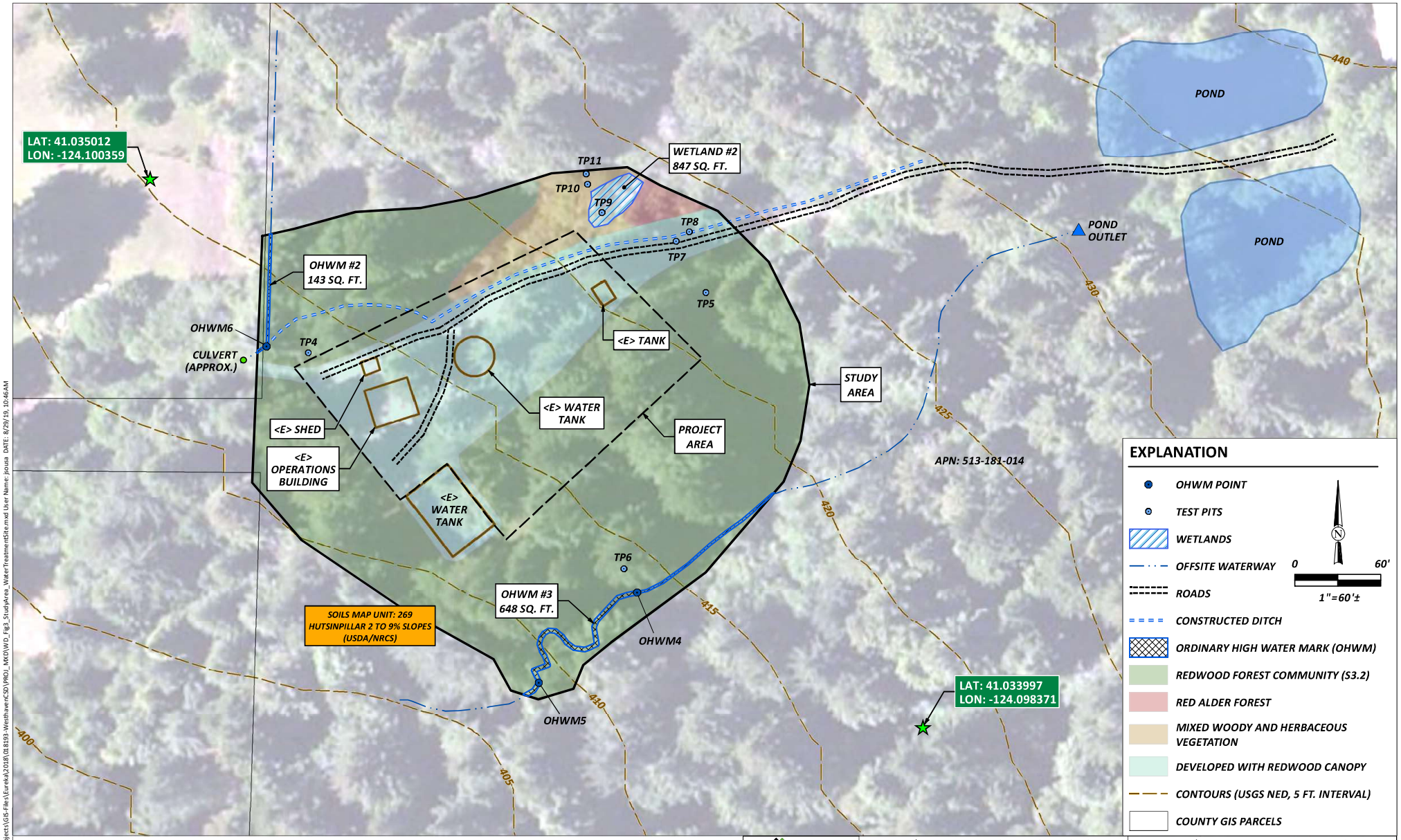
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SHN	Westhaven Community Services District Biological and Wetland Assessment Westhaven, Humboldt County, California	Project Location SHN 018193.100
	August 2019 | WD_Fig1_ProjectLocation	Figure 1



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SHN	Westhaven Community Services District Biological and Wetland Assessment Westhaven, Humboldt County, California	Study Area - Well Site SHN 018193.100
August 2019	WD_Fig2_StudyArea_WellSite	Figure 2



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Westhaven Community Services District Biological and Wetland Assessment Westhaven, Humboldt County, California		Study Area - Water Treatment Site SHN 018193.100
August 2019	WD_Fig3_StudyArea_WaterTreatmentSite	Figure 3

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3.2 Site Hydrology

The United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Climate Analysis for Wetlands Table (WETS) method was used to determine the precipitation pattern prior to the wetland assessment compared to long-term precipitation records to establish norms. Certain aspects of the delineation are guided by using the WETS dataset. These norms can be compared with recent rainfall data records (Woodley Island, Eureka) to determine whether the field work was performed during a "below normal," "normal," or "above normal" rainfall period. The WETS method reviews current rainfall conditions for the previous three months prior to the initial site and test pit (TP) investigations (or the same month and two months prior if after the 15th; Table 1; USDA-NRCS, 2019a). The initial TP investigations occurred on April 3 and April 10, 2019. The 2019 rainfall data for January, February, and March were compared to the 30-year rainfall average at the Eureka Woodley Island weather station (1981-2010). If the current rainfall of each month is between 30% and 70% of the 1981-2010 precipitation average, it is a "normal" rainfall; if above 70%, it's ranked "above normal"; if below 30%, it's ranked "below normal." The rainfall for this time period is considered "normal" (Table 1). The secondary TP investigation on April 18, 2019 uses 30-year data for the months February, March, and April, and was also conducted during a "normal" rainfall period (CDEC, 2019; USDA-NRCS, 2019a).

Table 1. WETS Rainfall Data
Westhaven CSD, Westhaven, CA

Month	WETS data	Rank	Weight	Value
April 3 and April 10, 2019: TP Excavation				
March 2019	Normal	2	3	6
February 2019	Above Normal	3	2	6
January 2019	Normal	2	1	2
Total[1]				**14**
April 18, 2019: TP Excavation				
April 2019	Normal	2	3	6
March 2019	Normal	2	2	4
February 2019	Above Normal	3	1	3
Total[1]				**13**

1. A sum of 6-9 prior to site investigation is considered a drier than normal rainfall.
10-14 prior to site investigation is considered a normal rainfall.
15-18 prior to site investigation is considered above normal rainfall.

Sources: CDEC, 2019; USDA-NRCS, 2019a

In addition to using the WETS information, current and historical rainfall amounts can be compared starting at the beginning of the hydrologic year (starting October 1). The historical 1981-2010, 30-year average from October 1 through March is 33.40 inches compared to current 2018-2019 data of 36.63 inches. Comparing these two data sets shows the rainfall year starting from October 1 is 110% of normal. However, the WETS data indicates that the 2019 spring season, just prior to the delineation, experienced normal rainfall for the early April site visits.

3.3 National Wetlands Inventory

The United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) website has no wetlands inventoried within the study area (Appendix 2). This general categorization by the NWI is not intended for planning purposes because of the lack of ground-truthing. In their "Data Limitations, Exclusions and Precaution" disclaimer, it states that:

> *The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high-altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.*
> (USFWS, 2019a)

The intention of this wetland and other waters delineation is to clarify original general NWI boundaries with the addition of onsite soils, hydrology, and vegetation mapping investigations.

4.0 Vegetation

The study area consists of two sites, the well site and the water treatment site. The well site is located on an elevated terrace with predominantly non-native grass and forb species including sweet vernal grass (*Anthoxanthum odoratum* [FACU]), rough bluegrass (*Poa trivialis* [FAC]), hairy cats ear (*Hypochaeris radicata* [FACU]), and redwood violet (*Viola sempervirens* [NL]) immediately adjacent to the well pump house. The northern portion of the well site slopes steeply to a perennial stream. The slope is dominated by coast redwood (*Sequoia sempervirens* [NL]), Douglas fir (*Pseudotsuga menziesii* [FACU]), Sitka spruce (*Picea sitchensis* [FAC]), western hemlock (*Tsuga heterophylla* [FACU]), western sword fern (*Polystichum munitum* [FACU]), and English ivy (*Hedera helix* [FACU]). Three environmentally sensitive habitat areas (ESHAs) were identified at the well site (Figure 2). The northeastern section of the well site terrace contains Red Alder Forest Vegetation Community (*Alnus rubra*/*Rubus* spp. Association [NL]) supporting salmonberry (*Rubus spectabilis* [FAC]), California blackberry (*Rubus ursinus* [FACU]), and Himalayan blackberry (*Rubus armeniacus* [FAC]).The forested slope consists of Redwood Forest Community (*Sequoia sempervirens- Pseudotsuga menziesii/ Polystichum munitum* association [G3/S3.2]) and the eastern portion of the ordinary high water mark (OHWM) consists of a Red alder riparian forest (*Alnus rubra* Forest Alliance [G3/S2.2]). The southeast area of the well site is not considered ESHA and consists of a narrow band of redwood canopy with non-native shrub and vine species dominating the understory. This is due to the impacts associated with existing development, adjacent residential development, and invasive species composition. The understory was observed to be predominantly English ivy and Himalayan blackberry. The northwestern and northern area of the well site supports mixed conifer forest, consisting of 35% Douglas fir, 35% Sitka spruce, 20% redwood, 5% western hemlock, and 5% red alder.

The water treatment site is located on an uplifted coastal terrace, and includes facilities to treat water for domestic use. Features specifically investigated for wetland conditions at this site included a man-made ditch, a localized depression within the terrace, and a sloped drainage. The vegetated man-made drainage ditch runs northeast-southwest along the access road on the main terrace, supporting sword fern alongside the project area. Vegetation observed alongside the drainage ditch was recently managed and string-trimmed. A depression to the northeast of the WTP study area on the main terrace supports red alder (*Alnus rubra* [FAC]), deer fern (*Struthiopteris spicant* [FAC]), salmonberry [FAC], and sword fern. The southern section of the WTP parcel on the sloped drainageway predominantly consists of coast redwood and sword fern. Figure 3 shows the location of the forested slope consisting of redwood forest (*Sequoia sempervirens* / *Polystichum munitum* Association [G3/S3.2]) in the study area. The area northeast of the project area consists of non-riparian red alder forest (*Alnus rubra*/ *Struthiopteris spicant* Association [G5/S4]). The main portion of the terrace has been graded and compacted with a graveled surface (Appendix 1, Photo 3). The

area adjacent to the non-riparian red alder forest consists of mixed woody and herbaceous vegetation and supports a mix of Semi-Natural Shrubland Stands and a non-classified herbaceous stand, predominantly supporting deer fern and western sword fern.

A complete list of plants observed within the study area is compiled in Table 3 in Appendix 3.

5.0 Geologic and Soil Composition

The project site is set on an uplifted Pleistocene-aged marine terrace, overlying the Franciscan Complex (Figure 1).

The underlying soils in the study areas have the USDA-NRCS classification for the well site Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes (map unit 258), and for the water treatment site Hutsinpillar, 2-9 percent slopes, which are described below and mapped on Figures 2 and 3. The Hutsinpillar soils are rated as hydric. The actual soil description at each exploratory soil TP is included in the wetland determination data forms found in Appendix 4 with photos in Appendix 1.

258—Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes

Map Unit Composition
Lepoil and similar soils: 35 percent
Espa and similar soils: 30 percent
Candymountain and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lepoil
Setting
Landform: Marine terraces
Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile
A - 0 to 8 inches: loam
AB - 8 to 19 inches: loam
Bt1 - 19 to 35 inches: loam
Bt2 - 35 to 67 inches: clay loam

Properties and qualities
Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 49 to 59 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.2 inches)

Interpretive Groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam an (F004BX121CA)
Hydric soil rating: No

Description of Espa
Setting
Landform: Marine terraces
Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile
A - 0 to 16 inches: loam
BA - 16 to 22 inches: loam
Bt - 22 to 41 inches: loam
BC - 41 to 60 inches: fine sandy loam

Properties and qualities
Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 39 to 49 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive Groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam an (F004BX121CA)
Custom Soil Resource Report 13
Hydric soil rating: No

Description of Candymountain
Setting
Landform: Marine terraces
Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile
Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 11 inches: fine sandy loam
Bw - 11 to 54 inches: fine sandy loam
C - 54 to 68 inches: fine sand

Properties and qualities
Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces,
marine deposits, sandy loam an (F004BX121CA)
Hydric soil rating: No

269—Hutsinpillar, 2 to 9 percent slopes

Map Unit Composition
Hutsinpillar and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hutsinpillar
Setting
Landform: Drainageways, marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Alluvium derived from sedimentary rock

Typical profile
Oi - 0 to 0 inches: slightly decomposed plant material
A - 0 to 13 inches: clay loam
Bg1 - 13 to 36 inches: clay loam
Bg2 - 36 to 62 inches: clay

Properties and qualities
Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.1 inches)

Interpretive groups
Land capability classification (irrigated): 6w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes
(USDA-NRCS, 2019b)

6.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of legislative acts. The following section summarizes the federal, State, and local regulations for special-status species, jurisdictional Waters of the U.S. and State of California, and other sensitive biological resources. This section provides a listing and overview of these federal, State and local laws; only select regulations will be applicable to this project.

6.1 Federal Laws

6.1.1 Section 401 and 404 of the Clean Water Act

Under Section 404 of the Clean Water Act (CWA; 33 U.S. Code [USC] 1344), as amended, the United States Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) retain primary responsibility for regulating discharge of dredged or fill material into "navigable waters of the United States." All discharges of dredged or fill material into jurisdictional waters of the United States (WoUS) that result in permanent or temporary losses of WoUS are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other WoUS, unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities; EPA, 1948).

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE Environmental Laboratory, 1987). In other words, the USACE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetlands hydrology.

Waters of the U.S. are defined at 33 Code of Federal Regulations (CFR) Part 328 (USC, 1986). They include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters, and certain wetlands. Following recent court cases, the EPA and USACE published a memorandum entitled "Clean Water Act Jurisdiction" (USACE/EPA, 2008) to guide the determination of jurisdiction over WoUS, especially for wetlands. The applicability of Section 404 permitting over discharges to wetlands is therefore, a two-step process: 1) determining the areas that are wetlands, and 2) where a wetland is present, assessing

the wetland's connection to traditional navigable waters and non-navigable tributaries to determine whether the wetland is jurisdictional under the CWA. A wetland is considered jurisdictional if it meets certain specified criteria.

The USACE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the Federal Endangered Species Act (FESA) if the action subject to CWA permitting could result in "Take" of federally listed species or an adverse effect to designated critical habitat. The project is within the jurisdiction of the Sacramento District of the USACE.

Section 401 of the CWA (33 USC 1341; EPA, 1977) requires that applicants for a federal license or permit obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The certification is obtained from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate. The responsibility for the protection of water quality in California rests with the SWRCB and its nine Regional Water Quality Control Boards (RWQCBs).

6.1.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, March 10, 1934, as amended 1936, 1946, 1947, 1948, 1949, 1958, 1965, 1978, and 1995; USFWS, 1934) requires that whenever waters or channel of a stream or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NMFS and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur (in this case the CDFW), with a view to conservation of birds, fish, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent.

If direct permanent impacts will occur to WoUS from a proposed project, then a permit from USACE under CWA Section 404 is required for the construction of the proposed project. USACE is required to consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally-listed species under FESA. Such action may prompt consultation with CDFW, which would review the project pursuant to California Endangered Species Act (CESA) and issue a consistency letter with USFWS and/or NMFS, if required.

6.1.3 Rivers and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water. Placing obstructions to navigation outside established federal lines and excavating from or depositing material in such waters require permits from the USACE. Section 10 of the Rivers and Harbors Appropriation Act (33 USC 403; USC, 2006) prohibits the unauthorized obstruction or alteration of any navigable WoUS.

6.1.4 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend and within which they live. The USFWS and the NMFS are the designated federal agencies responsible for administering the FESA.

The FESA prohibits the "Take" of endangered or threatened wildlife species. A "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting,

wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1531, 50 CFR 17.3; USACE/EPA, 1973). An activity can be defined as a "Take" even if it is unintentional or accidental. Taking can result in civil or criminal penalties. Activities that could result in "Take" of a federally-listed species require an incidental "Take" authorization resulting from FESA Section 7 consultation or FESA Section 10 consultation. Plants are legally protected under the FESA only if "Take" occurs on federal land or from federal actions, such as, issuing a wetland fill permit.

A federal endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A federal threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing as threatened or endangered. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the Federal Register. In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule.

Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed endangered or threatened species may be present in the study area and determine whether the proposed project will have a potentially significant impact on such a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat designated or proposed to be designated for such species (16 USC 1536[3], [4]; USACE/EPA, 1973). Project-related impacts to species on the FESA endangered or threatened list would be considered significant and thus, would require mitigation.

6.1.5 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feather or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21; USFWS, 1918). The MBTA also prohibits disturbance and harassment of nesting migratory birds at any time during their breeding season. The USFWS is responsible for enforcing the MBTA (16 USC 703; USFWS, 1918). The migratory bird nesting season is generally considered to be between March 15 and August 15 within the study region.

6.2 State Laws

6.2.1 California Coastal Act

The California Coastal Act (CCA; California Public Resources Code Sections 30000 et seq.; CCC, 1976) was enacted by the State Legislature in 1976 to provide long-term protection of California's 1,100-mile coastline. The mission of the California Coastal Commission (CCC), as the lead agency responsible for carrying out California's coastal management program, is to plan for and regulate development in the coastal zone consistent with the policies of the CCA. The CCC has the same authority over federal activities and federally licensed or assisted activities in the coastal zone.

The CCA includes specific policies that address issues such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works. The policies of the CCA constitute the statutory standards applied to planning and regulatory decisions made by the CCC and by local governments, pursuant to the CCA.

The CCC regulates the alteration of wetlands within the Coastal Zone under jurisdiction of the CCA. The California Coastal Zone is broken into local coastal program (LCP) units that specifically oversee land use and management of resources within local government jurisdictions. CCC has delegated responsibility of regulating the CCA to the County of Humboldt through the approval of their LCP. However, the CCC has oversight authority over the LCP.

The California Public Resources Code, Division 20, CCA (2013), Section 30121 broadly defines wetlands as, *"*lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens*"* (CCC, 1976).

However, the CCC Administrative Regulations (Title 14 California Code of Regulations [CCR] Section 13577 (b)) provides a more explicit definition:

> *Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of water surface levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitat* (CCC, 1989).

The 1994 CCC Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone provides the following information:

> *Although the U. S. Fish & Wildlife Service (FWS) classification system is complex, it does provide an objective method for identifying virtually any wetland landscape. Relative to the USACE definition, the FWS definition is generally regarded as being more inclusive in the classification and subsequent delineation of a wetland. This is because the FWS classification system defines a wetland by the presence of the proper hydrology and either the presence of hydric soils or hydrophytic vegetation, except in nonsoil areas, such as rocky intertidal areas, where only the presence of proper hydrology is required* (CCC, 1994).

For purposes of delineation, a location with any of the three wetland parameters (hydrophytic vegetation, hydrology, or hydric soils) is considered a wetland as defined by the Coastal Act.

6.2.2 Porter-Cologne Water Quality Control Act

The State maintains independent regulatory authority over the placement of waste, including fill, into waters of the State (WoS) under the Porter-Cologne Water Quality Control Act (SWRCB, 1969). WoS are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope,

but has special responsibility for isolated wetlands and headwaters. WoS are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact WoS are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge to WoS, then the local RWQCB has the option to regulate such activities under its state authority in the form of waste discharge requirements (WDRs) or certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredge or fill discharges to waters deemed by the USACE to be outside of federal jurisdiction under Section 404 of the CWA.

6.2.3 California Endangered Species Act

The State of California enacted the CESA in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened and endangered species designated under state law (California Fish and Game Code [CFGC] 2070). Section 2080 of the CFGC prohibits "Take" of any species that the commission determines to be an endangered or threatened species. "Take" is defined in Section 86 of the CFGC as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The State and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the State regulations included threatened, endangered, and candidate plants on non-federal lands within the definition of "Take." CESA allows for "Take" incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the study area and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFW as a "Species of Special Concern," which is a level below threatened or endangered status) would be considered significant and would require mitigation.

6.2.4 California Environmental Quality Act

California Environmental Quality Act (CEQA) Guidelines Sections 15125(c) and 15380(d) provide that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

The CNPS maintains a list of plant species native to California whose populations that are significantly reduced from historical levels, occur in limited distribution, or are otherwise rare or threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS, 2019). Taxa with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, and 3 in the CNPS inventory consist of plants that meet the definitions of the CESA of the CFGC, are eligible for state listing, and meet the definition of Rare or Endangered under CEQA Guidelines Sections 15125(c) and 15380(d). Some taxa with a

CRPR 4 may meet the definitions of the CESA of the CFGC. CRPR 4 populations may qualify for consideration under CEQA if they are peripheral or disjunct populations; represent the type locality of the species; or exhibit unusual morphology and/or occur on unusual substrates.

Additionally, CDFW maintains lists of special animals and plants. These lists include a species conservation ranking status from multiple sources, including FESA, CESA, and federal departments with unique jurisdictions, CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank. Species with state ranks of S1-S3 are also considered highly imperiled.

CEQA Guidelines checklist IV(b) calls for the consideration of riparian habitats and sensitive natural communities. Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by CDFW (i.e., the CNDDB and VegCAMP programs) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under CEQA (California Code of Regulations [CCR]: Title 14, Div. 6, Chap. 3, Appendix G; CNRA, 1970).

Although sensitive natural communities do not (at present) have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. High-quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents (such as general plans) often identify these resources as well. Avoidance, minimizations, or mitigation measures should be implemented if project-affected stands of rare vegetation types or natural communities are considered high-quality occurrences of the given community.

As a trustee agency under CEQA, CDFW reviews potential project impacts to biological resources, including wetlands. In accordance with the CEQA thresholds of significance for biological resources, areas that meet the state criteria of wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFW defines wet areas as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools."

6.2.5 California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC (CDFW, 1994). Any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake, generally requires a Streambed Alteration Agreement (SAA).

The term "stream," which includes creeks and rivers, is defined in the CCR as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life." This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72; CNRA, 1987).

In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFW, 1994). Removal of riparian vegetation also requires an SAA from the CDFW.

6.2.6 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows [*Passer domesticus*] and European starlings [*Sturnus vulgaris*]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the "Take" or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "Take" by the CDFW (CDFW, 1998).

6.2.7 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibian and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW, 1998) although "Take" may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "Take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize "Take" resulting from recovery activities for state-listed species.

Species of special concern (SSC) are broadly defined as animals not listed under the CESA, but that are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation is also intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although the SSC designation provides no special legal status, they are given special consideration under CEQA during project review.

Table 2 in Appendix 3 includes potentially-occurring federal and State-listed species and SSC animals that may occur in the study area.

6.2.8 Native Plant Protection Act of 1973

The Native Plant Protection Act (NPPA) of 1973 (Sec.1900-1913 of the CFGC, CDFW, 1998) includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage requirement for landowners. The CDFW administers the NPPA and generally regards as "rare" many plant species included on Lists 1A, 1B, 2A, 2B, 3, and 4 of the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2019).

Table 1 in Appendix 3 includes potentially-occurring endangered or rare native plants that may occur in the study area (including CNPS lists).

6.2.9 Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) Act of 1991 is an effort by the State of California, and numerous private and public partners that is broader in its orientation and objectives than the CESA and FESA (refer to discussions above). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP Act seeks to anticipate and prevent the controversies and gridlock caused by species listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process (CDFW, 1998).

6.3 Local Regulations

6.3.1 Humboldt County General Plan

The Humboldt County General Plan for Areas Outside the Coastal Zone (Humboldt County, 2017) includes policies and standards regarding sensitive and critical habitats, stream channels, streamside management areas, wetlands and other areas, and other sensitive and critical habitats for areas outside the coastal zone (at the WTP site).

6.3.2 Humboldt County General Plan Volume II Trinidad Area Plan of the Humboldt County Local Coastal Program

The Trinidad Area Plan (Humboldt County, 2007) includes policies for identification of ESHAs, permitted uses in wetlands, wetland buffers, road construction within watersheds containing wetlands, and coastal streams, riparian vegetation and marine resources.

7.0 Methodology

7.1 Biological Assessment Methodology

A search of the California Natural Diversity Database (CDFW, 2019), California Native Plant Society (CNPS, 2019) rare plant inventory, and the USFWS Information for Planning and Conservation (IPaC) (USFWS, 2019b) for known special-status plant and animal species within the Crannell and adjacent 7.5-minute quadrangles, resulted in 65 special-status plant species and 53 special-status animal species. Of these, 17 special-status plant species, and 7 special-status animal species have a moderate or higher potential of occurring within the study area and one (1) animal species was present (*Accipiter cooperii*; See Appendix 3, Tables 1 and 2 for special-status plant and animal species potentially occurring within the survey area). The remaining species have limited or no suitable habitat within the study area.

Each species was evaluated for its potential to occur within the study area according to the following criteria:

1) **None**. Species listed as having "none" with regard to their potential to occur within the study area are those species for which:
   - there is no suitable habitat present in the study area. (Habitats in the study area are unsuitable for the species requirements [e.g., elevation, hydrology, plant community, disturbance regime, etc.])

2) **Low**. Species listed as having a "low" potential to occur within the study area are those for which:
   - there is no known record of occurrence in the vicinity of the study area; and
   - there is marginal or very limited suitable habitat present in the study area.

3) **Moderate**. Species listed as having a "moderate" potential to occur within the study area are those species for which:
   - there is a known record of occurrence in the vicinity of the study area; and
   - there is suitable habitat present in the study area.

4) **High**. Species listed as having a "high" potential to occur within the study area are those species for which:
   - there is a known record of occurrence in the vicinity of the study area (there are many records and/or records in close proximity); and
   - there is highly suitable habitat present in the study area.

5) **Present**. Species listed as "present" in the study area are those species for which:
   - the species was observed in the study area during the investigations.

Using information about sensitive species potentially present in the project area, SHN undertook botanical and biological surveys in an attempt to determine if any of these species were located, or have the potential to be located within or adjacent to the project area, and if project activities would have any adverse impacts to individuals or habitat.

7.1.1 Biological Investigation

Field surveys were conducted on March 29, April 10, May 10, and June 28, 2019 for all special-status species potentially present (Appendix 3, Table 1 and Table 2) in the study area. Each survey was conducted over the course of two hours and covered the entire project area and associated study areas. (See Figure 2 and Figure 3).

In addition to surveying for target species, a list of all botanical and animal species encountered was compiled. Plants were identified to the lowest taxonomic level possible to distinguish special-status species from others. A list of observed botanical species is attached as Appendix 3, Table 3. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012), and subsequent online revisions (UCB, 2019). A list of observed animal species is attached as Appendix 3, Table 4.

7.2 Wetland Assessment Methodology

Wetland delineation methods described in *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE, 2010) were used to identify potential wetlands and other waters. The routine method for wetland delineation described in the USACE 1987 manual was used to identify potential wetlands within the study area. The USACE method relies on a three-parameter approach, in which criteria for hydrophytic vegetation, hydric soils, and wetland hydrology must each be met (present at the point of field investigation) to conclude that an area qualifies as a wetland. Additionally, the CCC requires only one of the three wetland parameters to be met to qualify as a wetland as defined by the Coastal Act. Therefore, mapping at the well study area (in the coastal zone) reflects both CCC and USACE requirements by showing areas meeting one, two, and three parameters. Wetland mapping at the WTP site (outside the coastal zone) is based on the USACE three-parameter approach.

Hydrophytic vegetation refers to plant species known to be adapted to wetland sites. To classify the hydrophytic plants onsite, the most recent *Western Mountains, Valleys, and Coast 2016 Regional Wetland*

Plant List was used (USACE, 2016). Hydric soils are those formed under saturated conditions, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, 2018). Wetland hydrology is demonstrated through direct evidence (primary indicators) or indirect evidence (secondary indicators) of flooding, ponding, or saturation for a significant portion of the growing season (USACE, 2010).

Prior to conducting the field investigation, SHN staff reviewed the USGS topographic quadrangle map (Figure 1); Google Earth (Google Earth, 2016); USDA-NRCS Web Soil Survey website (USDA, 2019b); and NWI map (USFWS, 2019a; Appendix 2). Prior to the TP investigation, a preliminary site investigation was performed to view existing hydrology. During the subsequent TP subsurface investigation, sample points were characterized at each pit for the aforementioned botanical, hydrological, and soil parameters.

Wetland TP locations were selected to:

- achieve appropriate coverage and characterization of wetland and upland habitats,
- document potential changes in the vegetative community (such as, a shift in the dominant species), and
- determine the approximate boundary line between wetlands and uplands by evaluating the extent of key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation).

At the well study area, sub-meter accuracy was obtained for test pits and ordinary highwater mark (OHWM)using a Galaxy Tablet Active 2 SM-T390 with a Trimble global positioning system (GPS) R1 antenna with an external antenna booster. Due to closed canopy in areas, we were unable to obtain sub-meter accuracy for the wetland boundary using GPS equipment. The wetland boundary was delineated using a survey tape-off of two fixed points of the well shed and triangulated to establish the eastern edge of the wetland boundary. The western edge was determined by a community trail which passes along the western boundary of the study area.

At the WTP study area, however, due to heavier redwood overstory, we were unable to obtain sub-meter accuracy for all the test pit, OHWM, and wetland boundary points. Two GPS with sub-meter accuracy were used on different days to attempt sub-meter accuracy: the Trimble Pro 6t GPS antenna connected to a Panasonic Toughbook CF-19 with geographic information system (GIS) software and the Galaxy Tablet Active 2 SM-T390 with a Trimble GPS R1 antenna with an external antenna booster. The accuracy ranged from three to seven feet. Several fixed locations (for example fence angles and buildings) were marked as control points (CTs), but were not used because of limited visibility on aerial imagery. A few GPS point locations were corrected by using on the ground knowledge and measurements of the area and matching these up with locations visible on aerial imagery. As recommended by San Francisco USACE staff, approximate, less than sub-meter points of wetland and OHWM boundaries are acceptable if sub-meter accuracy GPS equipment or survey tape triangulations are not feasible (USACE, 2019), if the alternative methods are discussed in the wetland report.

7.3 Vegetation Methodology

Prior to the field investigation, a review of plant species reported to be within the project area was performed by querying the “Consortium of California Herbaria” (Consortium of California Herbaria, 2019) database records and “Calflora” (Calflora, 2019) observations. Absolute percent cover of each plant species was visually estimated within the sample point and within each vegetation stratum. The tree stratum was inspected at a 30-foot radius centered on the sample point, and the herb and sapling/shrub strata at a 5-

foot radius. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) in addition to the online Jepson Interchange (University of California, Berkeley, 2019) for verification of species whose taxonomy may have changed since its publication. For plant species classification, see Section 4.0 Vegetation.

The wetland indicator status of plant species for this investigation was based on the USACE *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* (USACE, 2016). Synonyms were checked for species that did not appear on the USACE wetland plant list. Plant species were classified as:

- Obligate (OBL)–almost always occurs in wetlands
- Facultative-wet (FACW)–usually occurs in wetlands, but may occur in non-wetlands
- Facultative (FAC)–occurs in wetlands and non-wetlands
- Facultative-upland (FACU)–usually occurs in non-wetlands, but may occur in wetlands
- Upland (UPL)–almost never occurs in wetlands
- Not listed (NL)–scored as an upland plant and calculated as such on wetland determination forms.

The 50/20 method[1] was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. If hydric soils and wetland hydrology were present, the prevalence index[2] was applied. The occurrence and type of plant cover determine whether jurisdictional areas are identified as satisfying the vegetation criteria of a wetland or other waters. Those sites with little or no hydrophytic plant cover, or other sites not capable of supporting hydrophytic plant communities in normal circumstances, are identified as other waters, provided they have an OHWM.

7.4 Soils Methodology

Soils were field verified for the presence or absence of hydric conditions. All TPs were dug to a minimum depth of 17 inches, and the thickness of each soil horizon was measured. The Munsell Soil Color Chart (Kollmorgen Instruments Corporation, 1998) was referenced to determine the colors of the moist soil matrix and redoximorphic (redox) features (if present). Soils were closely inspected for hydric soil indicators, as defined by the NRCS "Field Indicators of Hydric Soils in the United States" (Version 8.2; USDA-NRCS, 2018). Once a three-parameter wetland zone was established, its boundary was determined using a soil probe and the use of alpha, alpha-dipyridyl reagent.

7.5 Hydrology Methodology

The presence (or lack) of wetland hydrology indicators was determined by direct observations for surface and groundwater during TP excavations on April 3, 10, and 18, 2019, in addition to indirect hydrologic indicators (such as, water marks, drift deposits, sediment deposits, alpha, alpha-dipyridyl reaction, drainage patterns, geomorphic placement, water-stained leaves, and similar features). Indicators of extended period saturation would include oxidized rhizospheres surrounding living roots or the presence of reduced iron or sulfur in the soil profile. A site location must contain at least one primary indicator or two secondary indicators to qualify for the hydrology parameter.

[1] The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that (when ranked in descending order of abundance and cumulatively totaled) immediately exceed 50% of total dominance measure for the stratum, plus any additional species that individually comprise 20% or more of the total dominance measure for the stratum (USACE, 2010).

[2] The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (absolute percent cover).

7.6 Ordinary High Water Mark Methodology

For purposes of Section 404 of the CWA, the lateral limits of federal jurisdiction over non-tidal water bodies, in the absence of adjacent wetlands, extend to the OHWM. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. For purposes of Sections 9 and 10 of the Rivers and Harbors Act of 1899, the lateral extent of federal jurisdiction, which is limited to the traditional navigable waters of the United States, extends to the OHWM, whether or not adjacent wetlands extend landward of the OHWM (USACE, 2014).

USACE regulations define the term OHWM for the purposes of the CWA lateral jurisdiction as follows:

> *The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas at 33 CFR 328.3(e).*

The OHWM in non-perennial streams corresponds with the boundaries of the active channel, which are typically expressed by some combination of three primary indicators: a topographic break in slope, change in sediment characteristics, and change in vegetation characteristics (USACE, 2014). The following supporting features should be considered when making an OHWM determination, to the extent that they can be identified and are deemed reasonably reliable (USACE, 2014):

- Drift/wrack
- Erosion/scour
- Bank undercutting
- Root exposure
- Point bars
- Water staining
- Litter removal
- Silt deposits
- Shelving
- Headcut/knickpoint
- Macroinvertebrates

Not all drainageways with OHWM features are considered to be jurisdictional, as noted in the Code of Federal Regulations 33 CFR Section 328.3, which states *"For clarification it should be noted that we generally do not consider the following waters to be "Waters of the United States"…a) Non-tidal drainage and irrigation ditches excavated on dry land."* This statement was used for reference on OHWM determination on a man-made constructed ditch found in the water treatment site.

8.0 Discussion and Results

8.1 Biological Results and Discussion

The habitat adjacent to the WTP site and within the study area at the well site consists of an undeveloped but previously logged stand of second- and third-growth coat redwood and Sitka spruce forest surrounded by suburban development (see Appendix 1, Photos 1-8). A depressed, somewhat linear channel running along the center of the flat slough area at the WTP site was dominated by hydrophytic vegetation (see wetland delineation results). The habitat surrounding the study area is generally similar to and contiguous with the study area habitat. During the survey, 74 plant species and 11 animal species were observed within the project area and surrounding buffer (See Appendix 3, Table 3 and 4). Of the plant species observed, 64% were native, reflecting the past land use of the study area for water infrastructure development, and the

surrounding development. The study area is dominated by coast redwood, sword fern, English ivy, deer fern, red alder, salmon berry, and thimble berry (*Rubus parviflorus* [FACU]), among others. All dominant species within the study area are upland, Facultative-upland, or Facultative-wetland plants, designated as Facultative (FAC) or drier species.

Animal species typical of a redwood forest were present within the study area. The habitat within the study area could support a variety of animal species for nesting and foraging, although it is not considered unique or critical habitat. A few large stumps remain from mature trees that may provide habitat for bats and other small mammals.

8.1.1 Natural Communities

Several special-status natural communities exist within and surrounding the study area. Three special-status natural communities were identified at the well site: Red alder forest (*Alnus rubra*/*Rubus* spp. Association [G5/S4, CDFW Sensitive Association]), Red alder riparian forest Community (Alnus rubra Forest alliance [G3/S2.2], and Redwood Forest Community (Figure 2). Red alder forest is ranked G5/S4 and is not considered a sensitive community, however the red alder/*Rubus* Association observed adjacent to the well site is considered a sensitive natural community association by CDFW.

One special-status natural community was identified at the treatment site - Redwood Forest Community. Red alder forest (*Alnus rubra* Forest Alliance [G5/S4]) was observed at the WTP site, but is not considered to be a sensitive natural community because it does meet the criteria for sensitive associations, nor is it located within a riparian area. The main portion of the terrace at the water treatment site has been graded and compacted with a graveled surface (Appendix 1, Photo 2; Figure 3).

8.1.2 Special-status Plant Species

Based on a review for special-status plant species, 65 special-status plant species have been reported from the region consisting of the Crannell quadrangle and surrounding quadrangles (Rodgers Peak, Bald Hills, Trinidad, Panther Creek, Tyee City, Arcata North, and Blue Lake). Of the special-status plant species reported for the region, 48 plant species are considered to have low or no potential to occur within the study area and 17 plant species have a moderate or high potential of occurring within the study area. Species with a moderate or high potential for occurrence within the study area are described below.

Twisted horsehair lichen (*Bryoria spiralifera*) is a lichen in the Parmeliaceae family. It is neither State nor federally listed, but has a California Rare Plant Rank (CRPR) of 3.2 and a heritage rank of G3/S1S2. Its elevation range is reported from 0 to 30 meters above sea level. This species is reported from north coast coniferous forests and usually on conifers. Although suitable habitat may exist within the study area for this species, it was not detected.

Northern clustered sedge (*Carex arcta*) is a perennial herb in the Cyperaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S1. Its elevation range is reported from 60 to 1,405 meters above sea level. Within its range state-wide, its blooming period is reported as June through September. This species is reported from bogs and fens and north coast coniferous forests. Within the nine-quad search, the closest Rarefind occurrence is approximately 4 miles to the south. Although suitable habitat may exist within the study area for this species, it was not detected.

Bristle-stalked sedge (*Carex leptalea*) is a perennial herb in the Cyperaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S1. Its elevation range is reported from 3

to 1,395 meters above sea level. Within its range state-wide, its blooming period is reported as March through July. This species is reported from bogs and fens, meadows and seeps, marshes and swamps, but is primarily found in bogs and wet meadows. The closest Rarefind occurrence reported is from 2 miles to the north near Trinidad. Although suitable habitat may exist within the study area for this species, it was not detected.

Lyngbye's sedge (*Carex lyngbyei*) is a perennial herb in the Cyperaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S3. Its elevation range is reported from 0 to 200 meters above sea level. Within its range state-wide, its blooming period is reported as April through August. This species is reported from brackish or freshwater marshes and swamps. Although suitable habitat may exist within the study area for this species, it was not detected.

Green yellow sedge (*Carex viridula*) is a perennial herb in the Cyperaceae family. It is neither State nor federally listed, but has a CRPR of 2B.3 and a heritage rank of G5T5/S2. Its elevation range is reported from 0 to 1,705 meters above sea level. Within its range state-wide, its blooming period is reported as June through July. This species is reported from bogs, fens, marshes, freshwater swamps, and north coast coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.

Pacific golden saxifrage (*Chrysosplenium glechomifolium*) is a perennial herb in the Saxifragaceae family. It is neither State nor federally listed, but has a CRPR of 4.3 and a heritage rank of G5/S3. Its elevation range is reported from 10 to 220 meters above sea level. Within its range state-wide, its blooming period is reported as February through June. This species is reported from north coast coniferous forest and riparian forest along streambanks, sometimes seeps, and sometimes roadsides. Although suitable habitat may exist within the study area for this species, it was not detected.

Oregon goldthread (*Coptis laciniata*) is a perennial herb in the Ranunculaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G4/S3. Its elevation range is reported from 0 to 1,000 meters above sea level. This species is reported from north coast conifer forests, meadows and seeps, and on mesic sites such as moist streambanks. Although suitable habitat may exist within the study area for this species, it was not detected.

Coast fawn lily (*Erythronium revolutum*) is a perennial herb in the Liliaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G4G5/S3. Its elevation range is reported from 0 to 1,600 meters above sea level. Within its range state-wide, its blooming period is reported as March through July. This species is reported from bogs, fens, broadleaved upland forests, north coast coniferous forests, and mesic streambanks. Although suitable habitat may exist within the study area for this species, it was not detected.

Harlequin lotus (*Hosackia gracilis*) is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G4/S3. Its elevation range is reported from 0 to 700 meters above sea level. Within its range state-wide, its blooming period is reported as March through July. This species is reported from broadleaved upland forests, coastal bluff scrub, coastal prairie, coastal scrub, meadows, seeps, marshes and swamps, north coast coniferous forests, and valley and foothill grassland habitats. Although suitable habitat may exist within the study area for this species, it was not detected.

Western lily (*Lilium occidentale*) is a perennial bulbiferous herb in the Liliaceae family. It is both State and federally listed as endangered, and has a CRPR of 1B.1 and a heritage rank of G1/S1. Its elevation range is

reported from 2 to 185 meters above sea level. Within its range state-wide, its blooming period is reported as June and July. This species is reported from bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marshes and swamps, and from north coast coniferous forest openings. Within these habitat types, it is most common on well-drained old beach washes overlain with windblown alluvium and organic topsoil, usually near margins of Sitka spruce. This species is very susceptible to soil compaction and texture and is extremely susceptible to herbivory and encroachment by invasive species. Within the nine-quad search, the closest Rarefind occurrence is approximately 5 miles to the southeast. Although suitable habitat may exist within the study area for this species, it was not detected.

Heart-leaved twayblade (*Listera cordata*) is a perennial herb in the Orchidaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G5/S4. Its elevation range is reported from 5 to 1,370 meters above sea level. Within its range state-wide, its blooming period is reported as February through July. This species is reported from lower montane coniferous forests, north coast coniferous forests, bogs, and fens. Although suitable habitat may exist within the study area for this species, it was not detected.

Running-pine (Lycopodium clavatum) is a fern in the Lycopodiaceae family. It is neither State nor federally listed, but has a CRPR of 4.3 and a heritage rank of G5/S3. Its elevation range is reported from 45 to 1,225 meters above sea level. Within its range state-wide, its blooming period is reported as July through September. This species is reported from bogs, fens, marshes, swamps, and wetlands. Within the nine-quad search, there are numerous Rarefind occurrences with the closest located 1.5 miles to the east. Although suitable habitat may exist within the study area for this species, it was not detected.

Marshall's saxifrage (*Micranthes marshallii*) is a perennial herb in the Saxifragaceae family. It is neither State nor federally listed, but has a CRPR of 4.3 and a heritage rank of G5/S3. Its elevation range is reported from 90 to 2,130 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from riparian forests and rocky streambanks. Although suitable habitat may exist within the study area for this species, it was not detected.

Leafy-stemmed mitrewort (*Mitellastra caulescens*) is a perennial herb in the Saxifragaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G5/S4. Its elevation range is reported from 5 to 1,700 meters above sea level. Within its range state-wide, its blooming period is reported as March through October. This species is reported from broadleaved upland forest, lower montane coniferous forests, meadows, seeps, and north coast coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.

Howell's montia (*Montia howellii*) is an annual herb in the Montiaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G3G4/S2. Its elevation range is reported from 0 to 835 meters above sea level. Within its range state-wide, its blooming period is reported as March through May. This species is reported from vernally mesic meadows and seeps, north coast coniferous forests, and sometimes roadside habitats. Although suitable habitat may exist within the study area for this species, it was not detected.

Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T2/S2. Its elevation range is reported from 5 to 1,255 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from coastal bluff scrub, coastal prairie, north

coast coniferous forests, and roadcuts. Within the nine-quad search, numerous Rarefind occurrences are reported, with the nearest close to the town of McKinleyville, 5.5 miles south of the study area. Although suitable habitat may exist within the study area for this species, it was not detected.

Alpine marsh violet (*Viola palustris*) is a perennial herb in the Violaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S1S2. Its elevation range is reported from 0 to 150 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from swampy and shrubby places in coastal scrub or coastal bogs. Although suitable habitat may exist within the study area for this species, it was not detected.

Surveys were conducted at a seasonally-appropriate time for all of the plant species expected to potentially occur within the study area. Surveys of the study area did not locate sensitive botanical species within the study area. It is unlikely that any species were missed; however, the findings in this report represent a "snapshot in time" and it is possible that false negative surveys for rare plant species could occur. This report documents the 2019 field investigations, and the findings presented here are based on best professional judgment.

8.1.3 Special-status Animal Species

Based on a review of special-status animal species, 53 special-status animal species have been reported with the potential to occur in the project region. Of the special-status animal species potentially occurring in the region, 45 animal species are considered to have a no or low potential to occur at the project site, 7 species have a moderate to high potential to occur at the project site, and one (1) species was present (*Accipiter cooperii*). Species with a moderate or high potential for occurrence within the study area are described below.

8.1.3.1 Amphibians

The northern red-legged frog (*Rana aurora*) inhabits humid forests, woodlands, grasslands, and streamsides usually near dense riparian cover. They are generally near permanent water, but can be found far from water in damp woods and meadows during the non-breeding season. Habitat does exist within the study area for this species, although it was not detected. If it were to occur, this species would be expected to be near the riparian areas and associated vegetation.

The Southern torrent salamander (*Rhyacotriton variegatus*) occupies lower montane coniferous and riparian forest, old-growth, and coastal redwood habitats in cold well-shaded permanent streams, particularly with splash zones with moss-covered rocks within trickling water. Some habitat does exist for this species within the study area, although it was not detected.

8.1.3.2 Birds

The Cooper's hawk (*Accipiter cooperii*) builds stick platform nests in crotches of riparian deciduous trees and second-growth conifers near streams. Of all the raptors, it's most associated with urbanized landscapes. Habitat does exist within the study area for this species, and it was detected within the study area.

The olive-sided flycatcher (*Contopus cooperi*) is found in Montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds. Their nest is an open cup of twigs, rootlets, and lichens, placed near the tip of a horizontal branch of a tree. Habitat does exist within the study area for this species, although it was not detected.

The northern spotted owl (*Strix occidentalis caurina*) nests in tree cavities or broken off tops of trees in dense sections of old forest, well protected from open sky by a dense tree canopy. This species can travel over a mile from the nest site for foraging. Some suitable foraging habitat exists for this species in the vicinity of the study area. The nearest known activity center is approximately 1.8 miles to the northeast of the study area.

The osprey (*Pandion haliaetus*) is found near ocean shores, bays, freshwater lakes, and larger streams. Their nests are built in treetops within 15 miles of a good fish-producing body of water. Although habitat does exist within the study area for this species, it was not detected.

8.1.3.3 Fishes

No special-status fish species are considered to have moderate or high probability to occur within the vicinity of the project area.

8.1.3.4 Insects

No special-status insect species are considered to have moderate or high probability to occur within the vicinity of the project area.

8.1.3.5 Mammals

The silver-haired bat (*Lasionycteris noctivagans*) is primarily a coastal and montane forest dweller, feeding over streams, ponds, and open brushy areas. It roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Habitat does exist within the study area for this species, although it was not detected.

The long-eared myotis (*Myotis evotis*) can be found in all woodland and forested habitats from sea level to about 9,000 feet. Nursery colonies are often in buildings, crevices, spaces under bark, and snags. Some habitat does exist for this species within the study area. The site visit was conducted mid-day and had a low probability of detecting this species if it was present. The snags and stumps within the study area offer the most likely habitat for this species.

8.1.3.6 Reptiles

No special-status reptile species are considered to have moderate or high probability to occur within the vicinity of the project area.

One special-status animal species was detected during the biological survey (March 29, 2019). It is possible that other special-status species could be found within the project area at some point. One nest structure within APN 514-132-008 was observed, identified as a probable American Crow (*Corvus brachyrhynchos*) nest, but not observed as active at the time. A Steller's jay (*Cyanocitta stelleri*) was observed carrying nest material to a secluded location adjacent to the project site, although no nest locations were identified at the time of the survey. Section 11.0 Recommendations may be used as guidance for protection of special-status species including nesting birds. This Assessment documents the 2019 field investigations, and the findings presented here are based on best professional judgment.

8.2 Wetland Results and Discussion

Wetland field investigations were conducted on April 3, 10, and 18, 2019. A total of three TPs were excavated at the well site to characterize the project area that was not already characterized with an OHWM. TP examination results were recorded for soils, vegetation, and hydrology on USACE Wetland

Determination Data Forms (Appendix 4). The well site is in the CCC jurisdiction, which considers only one-parameter to qualify as a wetland. TP1 was the only test pit at the well site within a wetland and is a one-parameter CCC wetland (Wetland #1, Figure 2). TP2 was excavated at a geomorphic low, thought to be the one likely spot on the terrace above the perennial stream to have wetland potential. TP3 was excavated within a location that represents typical conditions on the terrace.

Seven TPs were excavated on the water treatment project site, which is out of the CCC jurisdiction. TPs 4, 5, 6, 7, 8, and 9 were excavated in areas that had potential to be within wetlands either from the presence of hydrology, vegetation, or geomorphic depressions that were found within the project area. Only TP9 contained all three USACE wetland parameters (Wetland #2). TP10 and 11 were excavated as paired plots to TP9 to help determine the boundary of this wetland.

Tables 2 and 3 summarize the type, location, and descriptions of the TPs and wetlands. The discussion sections below for each TP describe the physical features and considerations of the site, followed by a data section that summarizes information from the completed Wetland Determination Data Forms located in Appendix 4. See Figures 2 and 3 for TP locations and Appendix 1 for photos of the study area.

8.2.1 TP1 (Wetland #1-CCC)

8.2.1.1 Discussion

TP1 was excavated on April 3, 2019 at the well site, on the hillslope west of the pump house. The vegetation suggested a possible one-parameter wetland and is also identified as an ESHA (See Figure 2 and Appendix 1, Photo 3). The hillslope has a soil fill layer that likely was placed when the wellhouse slab was constructed. Native soil was encountered at 18 inches. Only the hydrophytic vegetation parameter was met, and is, therefore, not considered a USACE wetland site, but it does qualify as a CCC one-parameter wetland.

8.2.1.2 Data TP1

The vegetation parameter contained the tree and sapling/shrub and woody vine stratums. The dominant tree stratum species was the red alder [FAC]. The dominant shrub stratum species was the salmonberry [FAC] and Himalayan blackberry [FAC]. The dominant woody vine stratum species was English Ivy [FACU]. Therefore, TP1 meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.2.2 TP2

8.2.2.1 Discussion

TP2 was excavated on April 3, 2019 within the well site study area, at a geographic low point contained in a flat area within the slope below the pump house and above the perennial stream. The localized depression appears to have been created by the rootball of a windthrown tree. (Appendix 1, Photo 4). No parameters were found at this location and therefore, it is not considered a USACE or CCC wetland.

8.2.2.2 Data TP2

The vegetation parameter contained the tree, sapling/shrub, herb, and woody vine stratums. The dominant tree species were the western hemlock [FACU] and the Douglas fir [FACU]. The dominant shrub species was red huckleberry (*Vaccinium parvifolium* [FACU]) and salal (*Gaultheria shallon* [FACU]. The dominant species in the herb stratum was western sword fern [FACU]. The dominant species in the woody vine stratum was English ivy [FACU]. Therefore, TP2 does not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.2.3 TP3

8.2.3.1 Discussion

TP3 was excavated on April 3, 2019 at the upper terrace where the existing well pumphouse is located and was chosen to typify the conditions of this terrace. No parameters were found at this pit and is, therefore, not considered a USACE or CCC wetland site.

8.2.3.2 Data TP3

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree species was the coast redwood [NL]. The dominant shrub stratum species was red huckleberry [FACU]. The dominant species in the herb stratum was western sword fern [FACU] and redwood sorrel (*Oxalis oregano* [FACU]). The dominant species in the woody vine stratum was English ivy [FACU]. Therefore, TP3 does not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.2.4 TP4

8.2.4.1 Discussion

TP4 was excavated on April 10, 2019 and is located at the water treatment site. TP4 is in a low spot that can overflow from the intermittent stream during high rainfall near OHWM Point #6. On April 10, surface water was observed, but not during an initial survey in January 2019 (See Figure 3; Appendix 1, Photo 5). Only two parameters were observed (hydrophytic vegetation and hydrology); therefore, TP4 is not considered to be a USACE wetland site. This site is not within the coastal zone.

8.2.4.2 Data TP4

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree species were the red alder [FAC] and the Douglas fir [FACU]. The dominant shrub species was the salmonberry [FAC] and Himalayan blackberry [FAC]. The herb stratum was dominated by the western sword fern [FACU] and the Pacific rush (*Juncus effusus ssp. pacificus* [FACW]). Therefore, TP4 meets the hydrophytic vegetation parameter.

The hydrology parameter was present due to two observed primary indicators: A2 (High Water Table at 1 inch), A3 (Saturation). Two secondary indicators were also observed: D2 (Geomorphic Position) and D5 (FAC-Neutral Test).

No hydric soil indicators were observed.

8.2.5 TP5

8.2.5.1 Discussion

TP5 was excavated on April 10, 2019 and is located at the water treatment site. TP5 is in a geomorphic depression thought to have been created by tree throw (See Figure 3; Appendix 1, Photo 6). This site was chosen as the most likely site on the upper terrace that could potentially contain a wetland due to its topographic depression. No parameters were observed, and therefore, TP5 is not considered to be a USACE wetland site. This site is not within the coastal zone.

8.2.5.2 Data

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree species were red alder [FAC] and coast redwood [NL]. The dominant shrub stratum species were the evergreen huckleberry (*Vaccinium ovatum* [FACU]) and salal [FACU]. The dominant species in the herb stratum was deer fern [FAC]. Therefore, TP5 does not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.2.6 TP6

8.2.6.1 Discussion

TP6 was excavated on June 10, 2019, in a geomorphic depression near a drainage culvert southeast of the water treatment facility. This site is below the water treatment site in the perennial stream flood plain (Appendix 1, Photo 7). No parameters were observed, and therefore, TP6 is not considered to be a USACE wetland site. This site is not within the coastal zone.

8.2.6.2 Data

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree stratum species was coast redwood [NL]. The dominant shrub stratum species was cascara (*Frangula purshiana* [FAC]). The herb stratum was dominated by redwood sorrel [FAC]. Therefore, TP6 does not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.2.7 TP7

8.2.7.1 Discussion

TP7 was excavated on April 18, 2019. This pit is located on the sidewall of the constructed ditch which runs along the northern side of the access road (See Figure 3 and Appendix 1, Photo 8). No parameters were observed, and therefore, TP7 is not considered to be a USACE wetland site. This site is not within the coastal zone.

8.2.7.2 Data

The vegetation parameter contained the tree and herb stratums. The dominant tree species were coast redwood [NL] and Douglas fir [FACU]. The herb stratum was predominately deer fern [FAC] and western sword fern [FACU]. Therefore, TP7 does not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.2.8 TP8

8.2.8.1 Discussion

TP8 was excavated 14 feet east of TP7 in a low spot in the constructed ditch on April 18, 2019 (Appendix 1, Photo 8). Only one parameter was observed (hydrology), and therefore, TP8 is not considered to be a USACE wetland site. This site is not within the coastal zone.

8.2.8.2 Data

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree species

were coast redwood [NL] and Douglas fir [FACU]. The dominant shrub species was salmonberry [FAC]. The herb stratum was dominated by deer fern [FAC]. Therefore, TP8 does not meet the hydrophytic vegetation parameter.

The hydrology parameter was present due to one primary indicator (A1-Surface water at 1-inch depth) and the secondary indicator (D2 -Geomorphic Position).

No hydric soil indicators were observed.

8.2.9 TP9, TP10, TP11 paired plots (Wetland #2-USACE)

8.2.9.1 Discussion

TP9, TP10, and TP11 were excavated on April 18, 2019. TP9 is approximately 45-feet northwest of TP7, north of the access road. This pit was excavated at the edge of a ponded area (Figure 3; Appendix 1, Photo 9). All three parameters were observed (hydrophytic vegetation, hydrology and hydric soils), and it is therefore considered a USACE wetland. These pits are not with the coastal zone. TP10 is approximately 18 feet northwest of TP9 and was excavated as a paired pit to find the edge of the upland/ wetland boundary. The vegetation parameter was not met, although the hydrology and hydric soil parameters were present. TP11 was excavated to more concisely find the edge of the boundary and is approximately five feet from TP10. No wetland parameters were found at TP11, and it is therefore out of the wetland boundary (Appendix 1, Photo 10).

8.2.9.2 TP9 Data

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree species was the Pacific wax myrtle (*Morella californica* [FACW]). The dominant shrub species were salmonberry [FAC] and salal [FACU]. The dominant species in the herb stratum was deer fern [FAC]. Therefore, TP9 meets the hydrophytic vegetation parameter.

The hydrology parameter was present due to two primary indicators: A1 (Surface Water 2-inches deep) and C4 (Presence of Reduced Iron-positive reaction to the alpha, alpha-dipyridyl). One secondary indicator was observed: D2 (Geomorphic Position).

The soil horizon did not meet the A12 indicator (Thick Dark Surface), because it was a half-color-chip off from the indicator value. The reaction to the alpha, alpha-dipyridyl within the top 12 inches is an “other” indicator of presence of reduced iron for a hydric soil indicator. Because of the combination of these two factors and the presence of surface water, it was determined that the hydric soil parameter was met.

8.2.9.3 TP10 Data

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree species were the Pacific wax myrtle [FACW] and coast redwood [NL]. The dominant shrub species were cascara [FAC] and salal [FACU]. The herb stratum was dominated by deer fern [FAC] and Pacific sword fern [FACU]. Therefore, TP10 does not meet the hydrophytic vegetation parameter.

The hydrology parameter was present due to two primary indicators: A2 (High Water at 7-inches deep) and A3 (Saturation to surface).

The hydric soil parameter was met with the following indicators: A11 (Depleted Dark Surface) and the F3 (Depleted Matrix).

8.2.9.4 TP11 Data

The vegetation parameter contained the tree, sapling/shrub, and herb stratums. The dominant tree stratum species was coast redwood [NL]. The dominant shrub stratum species was salal [FACU]. The herb stratum was dominated by deer fern [FAC]. Therefore, TP11 does not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.3 Ordinary High Water Mark (OHWM)

OHWM #1 was observed at the well site in the perennial stream 140 feet north of the well pump house (Figure 2). Three OHWM delineation data sheets were completed to describe this perennial stream: OHWM Point #1, OHWM Point #2, and OHWM Point #3 (Appendix 4). The cross-sections of these points were used to define the area for OHWM #1. The NWI map does not include this stream in its mapped riparian areas (Appendix 2).

At the water treatment site, there are three drainageways (Figure 3). One drainage is a man-made ditch (non-jurisdictional) and was constructed to prevent surface flow at the northern uphill section of the access road near the pond from flowing down the road. It directs this initial surface water along the north side of the road and into the second drainageway (OHWM #2), which is a natural drainage with intermittent flows documented by OHWM Point #6. The constructed ditch was not considered to have an OHWM, because it would not ordinarily support surface flow across the dry land (See discussion under Section 7.6 OHWM Methodology regarding non-tidal drainage ditches excavated on dry land).

The third drainageway at the water treatment site (OHWM #3) is a natural perennial stream, south of the treatment plant. The outflow of the two ponds east of the site connects into this stream. Two OHWM delineation sheets were completed (Appendix 4, OHWM Point #4 and OHWM Point #5) to describe the streams area.

9.0 Conclusions

9.1 Biological results

There are 65 special-status botanical species reported within the region consisting of the study area's quadrangle (Crannell) and the surrounding topographic quadrangles (CDFW, 2019; CNPS, 2019; USFWS, 2019b). This section summarizes conclusions based on the research and field investigations documented.

Of the 65 special-status botanical species, 17 species listed in Appendix 3, Table 1, are considered to have a moderate or higher potential to occur within the study area. A botanical survey was conducted on April 10, April 18, May 10, and June 28, 2019; however, no special-status botanical species were observed. The survey was conducted at a seasonally-appropriate time for all of the special-status botanical species expected to exist within the survey area (See Section 8.1.2 Special-Status Plant Species).

There are 53 special-status animal species reported within the region consisting of the study area's quadrangle (Crannell) and the surrounding topographic quadrangles (CDFW, 2019; USFWS, 2019b).
Of the 53 special-status animal species, 7 species listed in Appendix 3, Table 2, are considered to have a moderate or higher potential to occur within the study area and one species was present. A survey was conducted on April 10, 2019 and one special-status animal species was observed (*Accipiter cooperii*). Although potential habitat exists for a number of special-status species, they were not detected within the study area (See Section 8.1.3 Special-status Animal Species.

Three sensitive natural communities were identified at the well site - Red alder forest Rubus Association (*Alnus rubra*/*Rubus* spp. Association [G5S4, CDFW Sensitive]), Red alder riparian forest Community (*Alnus rubra* Forest alliance [G3/S2.2], and Redwood Forest Community (*Sequoia sempervirens-Pseudotsuga menziesii*/*Polystichum munitum* Association [G3 S3.2]) (Figure 2). One special-status natural community was identified at the water treatment site - Redwood Forest Community (*Sequoia sempervirens*/*Polystichum munitum* Association [G3 S3.2]).

See Section 11.0 Recommendations for measures to reduce potential impacts to special-status species, natural communities, and wetlands during implementation of the proposed project.

9.2 Wetland and OHWM Results

This region experienced an above-average winter rainfall, but a normal spring rainfall season (Section 3.2 Site Hydrology). The well site study area is within both the USACE and the CCC jurisdictions, and the water treatment site is only within the USACE jurisdiction. Because the CCC may consider 1, 2, or 3 parameters to identify a wetland, Table 2 describes the number and type of parameters for each TP. The USACE considers three-parameters as a wetland. Figures 2 and 3 indicate wetland and OHWM boundaries.

Table 2. TP Parameter Results, April 3, April 10, and April 18, 2019
Westhaven CSD, Westhaven, CA

TP Number	Parameters Met	Parameter Type	Latitude/Longitude	Jurisdiction
Well Site (within CCC Jurisdiction)				
TP1	1	Hydrophytic Vegetation	41.034274°/-124.107338°	CCC[1]
TP2	0	None	41.034726°/-124.107174°	None
TP3	0	None	41.034649°/-124.106957°	None
Water Treatment Site (not within CCC Jurisdiction)				
TP4	2	Hydrophytic Vegetation, Hydrology	41.034687°/-124.099947°	None
TP5	0	None	41.034820°/-124.098946°	None
TP6	0	None	41.034287°/-124.099137°	None
TP7	0	None	41.034917°/-124.099024°	None
TP8	1	Hydrology	41.034936°/-124.098991°	None
TP9	3	Hydrophytic Vegetation, Hydrology, Hydric Soils	41.034968°/-124.099214°	USACE[2]
TP10	2	Hydrology, Hydric Soils	41.035022°/-124.099252°	None
TP11	0	None	41.035042°/-124.099256°	None

1. CCC: California Coastal Commission
2. USACE: U.S. Army Corps of Engineers

Following the CCC one-, two-, and three-parameter guidelines for the well site, there is one wetland area found within the well site study area: Wetland #1 with 1,925 square feet (sf^2.; Figure 2; Table 3). It is based on the one-parameter hydrophytic vegetation dominance, associated with the Red alder/*Rubus* Association vegetation community.

There is one USACE wetland within the water treatment site study area: Wetland #2 with 847 sf^2 (Figure 3; Table 3). It is not within the CCC jurisdiction. Wetland #2 is a low depression that retains surface runoff. It appears that soil removed from the excavated drainage ditch was placed between the ditch and the

wetland, creating a berm that retains water runoff rather than allowing it to drain into the constructed ditch. Test pits were excavated to determine the northern extent of the boundary on April 18, 2019. The complete boundary of the wetland was refined during the June 28, 2019 site visit, when a 16-inch depth soil probe was used to investigate the subsurface soils. Alpha, alpha-dipyridyl reagent was applied to the upper soil horizons obtained from the probe to determine whether reduced iron was present, in addition to looking for other hydric soil indicators. Hydrophytic vegetation was also used to help refine the boundary. Elevation had a strong correlation to where reactive alpha, alpha-dipyridyl in the soils occurred and therefore, was indicative of the wetland boundary.

One 825 ft^2 OHWM was identified at the well study area (OHWM #1) in the perennial stream north of the well pump house (Figure 2, Table 3). Two OHWMs were identified at the water treatment study area (143 ft^2 OHWM #2 and 648 ft^2 OHWM #3; Figure 3, Table 3).

Table 3 describes the type, location, and size of the wetlands and OHWMs.

Table 3. Wetland Delineation Results, April 3, April 10, and April 18, 2019
Westhaven CSD, Westhaven, CA

Waterbodies	Test Pits	Cowardin Type	Latitude/Longitude	Area (square feet)
Wetland#1	TP1	PEM2C[1]	41.034291°/-124.107273°	1,925
Wetland#2	TP9	PEM1C[2]	41.034968°/-124.099214°	847
OHWM #1	OHWM Pt1-3	NA	41.034888°/-124.107190°	825
OHWM #2	OHWM Pt6	NA	41.034696°/-124.100054°	143
OHWM #3	OHWM Pt4-5	NA	41.034166°/-124.099202°	648
Total				**4,405**

1. PEM2C: Palustrine emergent nonpersistent seasonally flooded
2. PEM1C: Palustrine emergent persistent seasonally flooded

10.0 Limitations

The conclusions in this report represent a "snapshot in time" and it is possible that some species were not present at the time of the fieldwork. This report documents the investigation by using the best professional judgment of SHN's soil scientists, botanists, and biologist.

11.0 Recommendations

SHN recommends that the following measures be implemented at the project site to minimize the potential impacts to special-status plant and animal species, sensitive natural communities, and wetlands:

- Equipment and construction personnel should stay within the approved work area during construction;
- Temporary fencing should be installed around the permitted construction work area, to prevent accidental incursion into wetlands or streams;
- If impacts to special-status resources cannot be avoided while still accomplishing project objectives, these impacts should be mitigated at a ratio or in a manner to be determined by consultation with the appropriate regulatory agency;

- Minor impacts from project-related activities at the well site to the surrounding special-status natural communities could be mitigated through the removal of invasive species such as English ivy;
- Where project construction activities occur within close proximity, as defined in the Humboldt County General Plan and the Trinidad Area Plan to special-status resources, these resources should be demarcated by high visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts. If revegetation is needed as part of the project, native plant species should be used;
- Best management practices identified in the project description should be incorporated during construction to prevent runoff and potential discharge into wetland and OHWM areas;
- To avoid potential impacts to nesting birds, in accordance with the Migratory Bird Treaty Act, one of the following shall be implemented:
    - Conduct vegetation removal and other ground disturbance activities associated with any construction activities between late August and mid-March, when birds are not typically nesting, or
    - If vegetation removal or ground-disturbing activity is to take place during the nesting season (March 15 to August 15 for most birds), a qualified biologist shall conduct a pre-construction nesting bird survey. Pre-construction surveys for nesting pairs, nests, and eggs shall occur within the construction limits and within 100 feet (200 feet for raptors) of the construction limits. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the USFWS and CDFW and implemented to prevent abandonment of the active nest.
- Project activities near the riparian area at the WTP site that provides amphibian habitat should occur from July 15 through October 31, to minimize potential impacts to these species;
- If excavation that requires dewatering occurs as part of project activities, dewatering pump intakes should be fitted with a filter basket or screen to prevent impacts to aquatic wildlife that may have entered the excavated area; and
- Retain large stumps and snags for wildlife habitat (e.g. roosting bats).

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Site Photographs

1



Photo 1: Existing well pump house and potential well drilling location on APN 514-132-007.

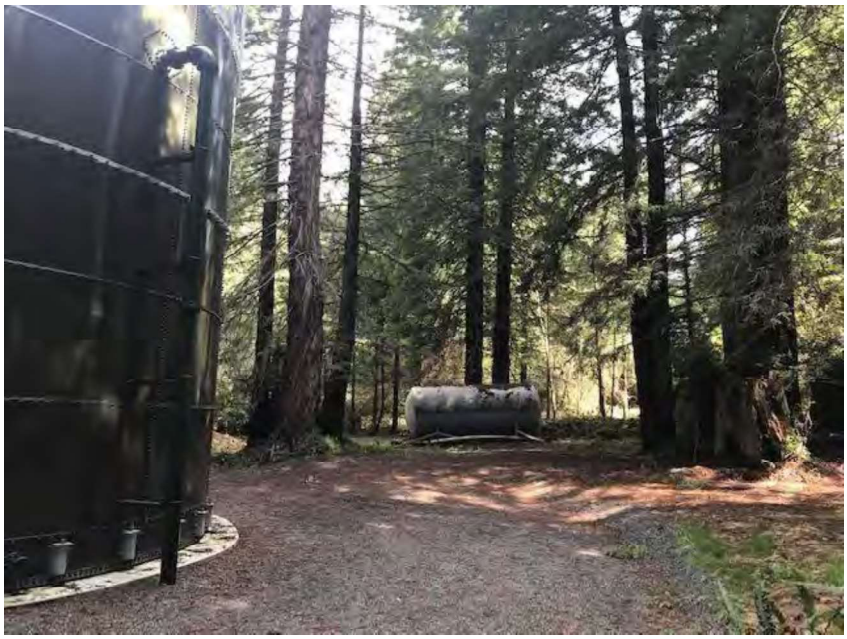


Photo 2: Existing water tank and vicinity of proposed geotechnical boring on APN 513-181-014.



Photo 3: TP1 on hillslope below the well pumphouse and Wetland #1/ESHA site location.

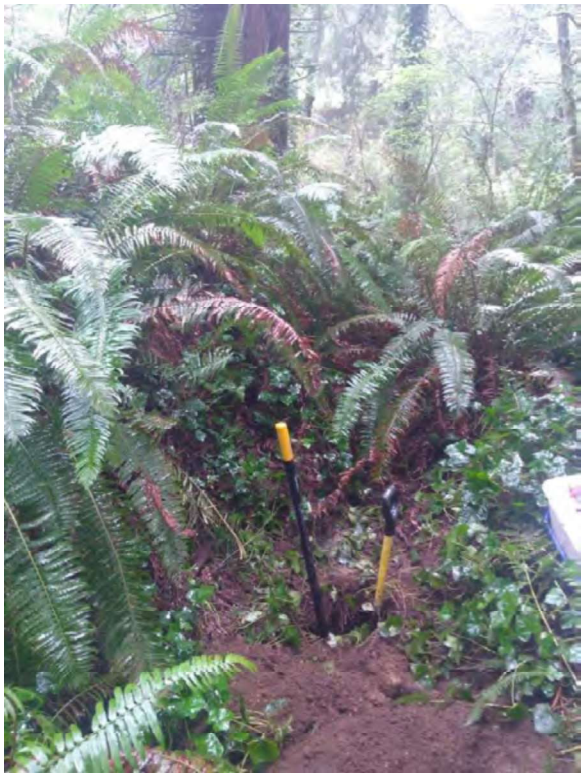


Photo 4: TP2 localized depression on lower bench above perennial stream at well study area.



Photo 5: TP4 surface water overflow at WTP site looking northwest towards OHWM Point #6.



Photo 6: TP5 on upper terrace at WTP in geomorphic depression looking towards existing water tank.



Photo 7: TP6 below culvert draining water treatment site.



Photo 8: TP7 (yellow handle) and TP8 (blue handle) looking west along constructed ditch at WTP site.



Photo 9: TP9 (Wetland #2) taken on 4-18-19 at WTP site.



Photo 10: TP11 (yellow handle in front) and TP10 (black handle in background) looking towards TP9-Wetland #2 at WTP. TP 10 is approximately two feet higher in elevation than TP 9.

National Wetlands Inventory

2

U.S. Fish and Wildlife Service
National Wetlands Inventory

Westhaven CSD



April 2, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Plant and Animal Species List

3

Table 1
Regionally-Occurring Special-Status Plant Species Scoping List CNDDB, CNPS, IPaC
Westhaven Community Services District 4/8/2019
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Abronia umbellata var. *breviflora*	pink sand-verbena	Nyctagi n-aceae	None	None	G4G5-T2	S1	1B.1	June-Oct.	Coastal dunes and coastal strand.	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-10 m.	None
Angelica lucida	sea-watch	Apiacea e	None	None	G5	S3	4.2	May-Sept.	Coastal strand	Coastal bluff scrub, coastal dunes, scrub, & salt marshes. 0-150 m	None
Astragalus rattanii var. *rattanii*	Rattan's milk-vetch	Fabacea e	None	None	G4T4	S4	4.3	April-July	Chaparral, cismontane woodland, lower montane conifer forest.	Open grassy hillsides, gravelly flats in valleys, and gravel bars of stream beds. 30-825 m.	Low
Astragalus umbraticus	Bald Mountain milk-vetch	Fabacea e	None	None	G4	S2	2B.3	May–Aug.	Cismontane woodland, Lower montane coniferous forest.	Sometimes roadside. 150-1,250 m.	None
Bryoria pseudocapillaris	false gray horsehair lichen	Parmeli-aceae	None	None	G3	S2	3.2	Lichen	Coastal dunes, No. Coast conif. forest (immediate coast).	Usually on conifers. 0-90 m.	None
Bryoria spiralifera	twisted horsehair lichen	Parmeli-aceae	None	None	G3	S1S2	1B.1	Lichen	No. coast coniferous forest.	Usually on conifers. 0-30 m.	Moderate
Calamagrostis bolanderi	Bolander's reed grass	Poaceae	None	None	G4	S4	4.2	May-August	Closed-cone & no. coast coniferous and broadleaved upland forest, coastal scrub, marshes, swamps, meadows and seeps, bogs and fens.	Mesic sites. 0-455 m.	Low

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Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Cardamine angulata	seaside bittercress	Brassic-aceae	None	None	G5	S1	2B.1	Jan.-July	Lower montane, conifer forest, N. coast conifer forest, wetland	Wet areas, streambanks. 90-155 m.	Low
Carex arcta	northern clustered sedge	Cyperac eae	None	None	G5	S1	2B.2	June–Sept.	Bogs and fens, No. Coast conifer forest.	Mesic sites. 0-3,200 m.	Moderate
Carex buxbaumii	Buxbaum's sedge	Cyperac eae	None	None	G5	S3	4.2	March-August	Bogs and fens, meadows and seeps, marshes and swamps.	Mesic sites. 3-3,300 m.	Low
Carex lenticularis var. limnophila	lagoon sedge	Cyperac eae	None	None	G5T5	S1	2B.2	June-August	Bogs and fens, marshes and swamps, north noast coniferous forest.	Lakeshores, beaches. Often in gravelly substrates. 0-6 m.	Low
Carex leptalea	bristle-stalked sedge	Cyperac eae	None	None	G5	S1	2B.2	March-July	Bogs and fens, meadows and seeps, marshes and swamps.	Mostly known from bogs and wet meadows. 3-1,395 m.	Moderate
Carex lyngbyei	Lyngbye's sedge	Cyperac eae	None	None	G5	S3	2B.2	April-August	Marsh & swamp (brackish or freshwater).	0-200 m.	Moderate
Carex saliniformis	deceiving sedge	Cyperac eae	None	None	G2	S2	1B.2	June	Coastal prairie & scrub, meadows, seeps, marshes, swamps (coastal salt).	Mesic sites. 2-230 m.	Low
Carex viridula ssp. viridula	green yellow sedge	Cyperac eae	None	None	G5T5	S2	2B.3	June-July	Bogs and fens, marshes and swamps (freshwater), north coast coniferous forest.	Mesic sites. 0-1,705 m.	Moderate

Table 1
Regionally-Occurring Special-Status Plant Species Scoping List CNDDB, CNPS, IPaC
Westhaven Community Services District 4/8/2019
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Castilleja ambigua var. *ambigua*	Johnny-nip	Orobanch-aceae	None	None	G4T5	S4	4.2	March-Aug	Coastal bluff scrub, coastal scrub, coastal prairie, marshes and swamps, valley and foothill grassland, vernal pool margins.	0-435 m.	Low
Castilleja litoralis	Oregon coast paintbrush	Orobanch-aceae	None	None	G3	S3	2B.2	June	Coastal bluff scrub, coastal dunes, coastal scrub.	Sandy sites. 5-255 m.	None
Castilleja mendocinensis	Mendocino Coast paintbrush	Orobanchaceae	None	None	G2	S2	1B.2	April-August	Coastal bluff scrub, coastal scrub, coastal prairie, closed-cone coniferous forest, coastal dunes.	Often on sea bluffs or cliffs in coastal bluff scrub or prairie. 3-70 m.	Low
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	Orobanch-aceae	None	None	G4?T2	S2	1B.2	June-Oct.	Coastal salt marsh.	Usually in coastal salt marsh with *Salicornia, Distichlis, Jaumea, Spartina*, etc. 0-10 m.	None
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifrag-aceae	None	None	G5	S3	4.3	Feb.-June	North Coast coniferous forest, riparian forest.	Streambanks, sometimes seeps, sometimes roadsides. 10-220 m.	Moderate
Coptis laciniata	Oregon goldthread	Ranunc ul-aceae	None	None	G4	S3	4.2	March-May	North coast conifer forest, meadows and seeps.	Mesic sites such as moist streambanks. 0-1,000 m.	Moderate

Table 1
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Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Discelium nudum	naked flag moss	Disceliaceae	None	None	G4G5	S1	2B.2	Moss	Coastal bluff scrub.	Moist silty clay to fine sandy banks in somewhat shaded sites. 10-50 m.	Low
Eleocharis parvula	small spikerush	Cyperaceae	None	None	G5	S4	4.3	July-August	Marsh & swamp, salt marsh, wetland	In coastal salt marshes. 1-3,020 m.	Low
Empetrum nigrum	black crowberry	Ericaceae	None	None	G5	S1?	2B.2	July-August	Coastal bluff scrub and coastal prairie.	3-15 m.	Low
Epilobium septentrionale	Humboldt County fuchsia	Onagraceae	None	None	G4	S4	4.3	July-Sept.	Broadleaved upland forest, North Coast coniferous forest.	Sandy or rocky. 45-1,800 m.	Low
Erigeron bloomeri var. nudatus	Waldo daisy	Asteraceae	None	None	G5T4	S3	2B.3	June-July	Lower montane coniferous forest, upper montane coniferous forest.	In open areas on dry rocky outcrops on serpentine. 730-1,740 m.	Low
Erysimum menziesii	Menzies' wallflower	Brassic-aceae	E	E	G1	S1	1B.1	March-Sept.	Coastal dunes.	Localized on dunes and coastal strand. 0-35 m.	None
Erythronium oregonum	giant fawn lily	Liliaceae	None	None	G4G5	S2	2B.2	March.-June	Cismontane woodland, Meadows and seeps.	Sometimes serpentinite, rocky, openings. 100-1,150 m.	Low
Erythronium revolutum	coast fawn lily	Liliaceae	None	None	G4G5	S3	2B.2	March-July	Bogs and fens, Broadleaved upland forest, North Coast coniferous forest.	Mesic streambanks. 0-1,600 m.	Moderate

Table 1
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Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Fissidens pauperculus	minute pocket moss	Fissident-aceae	None	None	G3?	S2	1B.2	Lichen	North coast coniferous forest, Redwood.	Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 10-1,024 m.	Low
Gilia capitata ssp. *pacifica*	Pacific gilia	Polemoni-aceae	None	None	G5T3	S2	1B.2	April-August	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland.	5-1,665 m.	None
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	None	None	G2	S2	1B.2	April-July	Coastal dunes.	1-60 m.	None
Glehnia littoralis ssp. *leiocarpa*	American glehnia	Apiaceae	None	None	G5T5	S3	4.2	May-August	Coastal Dunes	0-20 m.	None
Hosackia gracilis	harlequin lotus	Fabaceae	None	None	G4	S3	4.2	March-July	Broadleaf upland forest, coast bluff scrub, coast prairie, coast scrub, closed-cone conifer forest, meadow, seep, marsh & swamp, N. coast conifer forest, valley & foothill grassland.	Wetlands and roadsides. 0-700 m.	Moderate
Iliamna latibracteata	California globe mallow	Malvaceae	None	None	G2G3	S2	1B.2	June-August	Chaparral (montane), Lower montane and North Coast coniferous forest (mesic), Riparian scrub (streambanks).	Often in burned areas. 60-2,000m.	Low

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Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Juncus nevadensis var. inventus	Sierra rush	Juncaceae	None	None	G5T3T4	S1	2B.2	July-Nov.	Bogs and fens.	0-10 m.	Low
Kopsiopsis hookeri	small groundcone	Orobanchaceae	None	None	G4?	S1S2	2B.3	April-August	North Coast coniferous forest.	90-885 m.	None
Lathyrus gladulosus	sticky pea	Fabaceae	None	None	G3	S3	4.3	April-June	Cismontane woodland.	In oak woodlands upland from the coastal redwood forests, and along roadsides. 300-800 m.	Low
Lathyrus japonicus	seaside pea	Fabaceae	None	None	G5	S2	2B.1	May-August	Coastal dunes.	3-65 m.	None
Lathyrus palustris	marsh pea	Fabaceae	None	None	G5	S2	2B.2	March-August	Bogs, fens, lower montane conifer forest, marsh, swamp, no. coast conifer forest, coastal prairie and scrub.	Moist coastal areas. 2-140 m.	Low
Layia carnosa	beach layia	Asteraceae	E	E	G2	S2	1B.1	March-July	Coastal dunes, coastal scrub.	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes.0-30m.	None
Lilium occidentale	western lily	Liliaceae	E	E	G1	S1	1B.1	June-July	Coastal scrub, freshwater marsh, bogs & fens, coastal bluff scrub, coast prairie, N. coast conifer forest, marshes and swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m.	Moderate

Table 1
Regionally-Occurring Special-Status Plant Species Scoping List CNDDB, CNPS, IPaC
Westhaven Community Services District 4/8/2019
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Listera cordata	heart-leaved twayblade	Orchidaceae	None	None	G5	S4	4.2	Feb.-July	Lower montane conifer forest, north coast conifer forest.	Bogs and fens, 5-1,370 m.	Moderate
Lycopodium clavatum	running-pine	Lycopodi-aceae	None	None	G5	S3	4.1	June-Sept.	Lower montane conifer forest, north coast conifer forest, marsh &swamp.	Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1,225 m.	Moderate
Lycopus uniflorus	northern bugleweed	Lamiaceae	None	None	G5	S4	4.3	July-Sept.	Bogs and fens, marshes and swamps, wetlands.	Wet places. 5-2000 m.	Low
Micranthes marshallii	Marshall's saxifrage	Saxifragaceae	None	None	G5	S3	4.3	March-August	Riparian forest	Rocky streambanks. 90-2,130 m.	Moderate
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifrag-aceae	None	None	G5	S4	4.2	March-Oct.	Broadleaf upland forest, lower montane conifer forest, meadow & seep, N. coast conifer forest.	Mesic sites. 5-1,700 m.	Moderate
Moneses uniflora	woodnymph	Ericaceae	None	None	G5	S2	2B.2	May-July	Broadleaved upland forest, North Coast coniferous forest.	50-260 m.	Low
Montia howellii	Howell's montia	Montiaceae	None	None	G3G4	S2	1B.1	March-June	Meadows, seeps, No. Coast coniferous forest, Vernal pools.	Vernally mesic sites, sometimes roadsides.0-835m.	Moderate
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	None	None	G2	S1	1B.1	May-Oct.	Coastal bluff scrub, coastal dunes, coastal prairie, low montane conifer forest.	Sandy substrates; usually mesic sites. 3-800 m.	Low

Table 1
Regionally-Occurring Special-Status Plant Species Scoping List CNDDB, CNPS, IPaC
Westhaven Community Services District 4/8/2019
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Packera bolanderi var. bolanderi	seacoast ragwort	Asteraceae	None	None	G4T4	S2S3	2B.2	Jan.-August	Coastal scrub, north coast coniferous forest.	Often along roadsides. 30-915 m.	Low
Piperia candida	white-flowered rein orchid	Orchidaceae	None	None	G3	S3	1B.2	May-Sept.	North Coast and lower montane coniferous forest, broadleaved upland forest.	Sometimes serpentine. Forest duff, mossy banks, rock outcrops, muskeg. 45-1,615 m.	Low
Pityopus californicus	California pinefoot	Ericaceae	None	None	G4G5	S4	4.2	March-August	Broadleaved upland forest, upper montane and, North coast coniferous forest, low montane coniferous forest.	Deep shade with few understory species, often under layer of duff, in rocky to clay loam soil. 15-2,225 m.	Low
Pleuropogon refractus	nodding semaphore grass	Poaceae	None	None	G4	S4	4.2	March-August	Meadow & seep, low montane conifer forest, North coast coniferous forest, riparian forest.	Mesic sites along streams, grassy flats in shaded redwood groves. 0-1,600 m.	Low
Polemonium carneum	Oregon polemonium	Polemoniaceae	None	None	G3G4	S2	2B.2	April-Sept.	Coastal prairie, coastal scrub, lower montane coniferous forest.	0-1,830 m.	Low
Ribes laxiflorum	trailing black currant	Grossulariaceae	None	None	G5	S4	4.3	March-July	North Coast coniferous forest.	Sometimes roadsides. 5-1,395 m.	Low
Romanzoffia tracyi	Tracy's romanzoffia	Boraginaceae	None	None	G4	S2	2B.3	March-May	Coastal bluff scrub, coastal scrub.	Rocky sites. 15-300 m.	Low

Table 1
Regionally-Occurring Special-Status Plant Species Scoping List CNDDB, CNPS, IPaC
Westhaven Community Services District 4/8/2019
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	None	None	G3	S3	4.2	March-August	Broadleaved upland forest, coast prairie, coast scrub, North coast coniferous forest, riparian.	Woodlands and clearings near coast; often in disturbed areas. 0-730 m.	Low
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	Malvaceae	None	None	G5T2	S2	1B.2	March-August	Coastal bluff scrub, coastal prairie, north coast coniferous forest.	Open coastal forest; roadcuts. 5-1,255 m.	Moderate
Sidalcea oregana ssp. eximia	coast checkerbloom	Malvaceae	None	None	G5T1	S1	1B.2	June-August	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest.	5-1,340 m.	Low
Silene scouleri ssp. scouleri	Scoulers catchfly	Caryophylaceae	None	None	G5T4T5	S2S3	2B.2	June-August	Coastal bluff scrub, coastal prairie, valley and foothill grassland	0-600 m.	Low
Tiarella trifoliata var. *trifoliata*	trifoliate laceflower	Saxifragaceae	None	None	G5T5	S2S3	3.2	June-August	Lower montane coniferous forest, north coast coniferous forest.	Forest edge; moist shady banks. 170-1,500 m.	Low
Trichodon cylindricus	cylindrical trichodon	Ditrichaceae	None	None	G4	S2	2B.2	Moss	Broadleaved upland forest, upper montane coniferous forest.	Moss growing in openings on sandy or clay soils on roadsides, stream banks, trails or in fields. 50-1,500 m.	Low

Table 1
Regionally-Occurring Special-Status Plant Species Scoping List CNDDB, CNPS, IPaC
Westhaven Community Services District 4/8/2019
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Usnea longissima	Methuselah's beard lichen	Parmeliaceae	None	None	G4	S4	4.2	lichen	North coast coniferous forest, broadleaved upland forest.	Grows in the "redwood zone" on tree branches of a variety of trees, including big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1,465 m.	Low
Viola palustris	alpine marsh violet	Violaceae	None	None	G5	S1S2	2B.2	March-August	Coastal scrub, bogs and fens.	Swampy, shrubby places in coastal scrub or coastal bogs. 0-150 m.	Moderate

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate
CT: candidate threatened
D: delisted
DPS: distinct population segment
E: endangered
ESU: evolutionarily significant unit
FP: fully protected
PT: proposed threatened
SSC: species of special concern
T: threatened
WL: watch list

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled
G2/S2: imperiled
G3/S3: vulnerable
G4/S4: apparently secure
G5/S5: secure

Table 2
Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Amphibians								
Ascaphus truei	Pacific tailed frog	None	None	SSC	G4	S3S4	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	Low
Plethodon elongatus	Del Norte salamander	None	None	NT	G4	S3	Old-growth associated species with optimum conditions in the mixed conifer/hardwood ancient forest ecosystem. Cool, moist, stable microclimate, a deep litter layer, closed multi-storied canopy, dominated by large, old trees.	Low
Rana aurora	northern red-legged frog	None	None	SSC, S	G4	S3	Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Moderate
Rana boylii	foothill yellow-legged frog	None	CT	SSC, S, NT	G3	S3	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Low
Rhyacotriton variegatus	southern torrent salamander	None	None	SSC, S	G3G4	S2S3	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old-growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	Moderate
Birds								
Accipiter cooperii	Cooper's hawk	None	None	WL	G5	S4	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	**Present**
Accipiter striatus	sharp-shinned hawk	None	None	WL	G5	S4	Ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitat. Prefers riparian. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.	Low

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Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Ardea herodias	great blue heron	None	None	S	G5	S4	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites close to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Low
Asio flammeus	short-eared owl	None	None	SSC	G5	S3	Live in large, open areas with low vegetation, including prairie and coastal grasslands, heathlands, meadows, shrubsteppe, savanna, tundra, marshes, dunes, and agricultural areas.	None
Botaurus lentiginosus	American bittern	None	None	None	G4	S3S4	In winter they move to areas where water bodies don't freeze, especially near the coast, where they occasionally use brackish marshes. Usually build their nests among thick stands of cattails, bulrushes, and sedges that grow out of shallow water.	None
Brachyramphus marmoratus	marbled murrelet	T	E	S	G3G4	S1	Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	None
Cerorhinca monocerata	rhinoceros auklet	None	None	WL	G5	S3	Off-shore islands and rocks along the California coast. Nests in a burrow on undisturbed, forested and unforested islands, and probably in cliff caves on the mainland.	None
Charadrius alexandrinus nivosus	western snowy plover	T	None	SSC, BCC	G3T3	S2S3	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	None
Charadrius montanus	mountain plover	None	None	SSC	G3	S2S3	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground & flat topography. Prefers grazed areas & areas with burrowing rodents.	None
Coccyzus americanus	yellow-billed cuckoo	T	E	S, BCC	G5T2T3	S1	Use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.	None
Contopus cooperi	olive-sided flycatcher	None	None	SSC	G4	S4	Winters at forest edges and clearings where tall trees or snags are present. Nest is an open cup of twigs, rootlets, and lichens, placed out near tip of horizontal branch of a tree.	Moderate

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Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Egretta thula	snowy egret	None	None	None	G5	S4	Nest in colonies on thick vegetation in isolated places. During the breeding season, feed in estuaries, saltmarshes, tidal channels, shallow bays, and mangroves. They winter in mangroves, saltwater lagoons, freshwater swamps, grassy ponds, and temporary pools, and forage on beaches, shallow reefs, and wet fields.	None
Elanus leucurus	white-tailed kite	None	None	FP	G5	S3S4	Rolling foothills and valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Low
Falco peregrinus anatum	American peregrine falcon	D	D	FP	G4T4	S3S4	Elevations up to about 12,000 feet, as well as along rivers and coastlines or in cities. Any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains.	Low
Fratercula cirrhata	tufted puffin	None	None	SSC	G5	S1S2	Open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs. Requires sod or earth into which the birds can burrow, on island cliffs or grassy island slopes.	None
Haliaeetus leucocephalus	bald eagle	D	E	FP	G5	S3	Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water. Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.	Low
Nycticorax nycticorax	black-crowned night heron	None	None	None	G5	S4	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Low
Oceanodroma furcata	fork-tailed storm-petrel	None	None	SSC, S	G5	S1	Colonial nester on small, offshore islets. Forages over the open ocean, usually well offshore. Birds choose offshore islets which provide nesting crannies beneath rocks or sod for burrowing.	None
Pandion haliaetus	osprey	None	None	S, WL	G5	S4	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in treetops within 15 miles of a good fish-producing body of water.	Moderate

Table 2
Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Pelecanus occidentalis californicus	California brown pelican	D	D	FP	G4T3T4	S3	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None
Phalacrocorax auritus	double-crested cormorant	None	None	WL	G5	S4	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	None
Ptychoramphus aleuticus	Cassin's auklet	None	None	SSC, BCC	G4	S2S4	Pelagic species, nests in burrows on offshore islands.	None
Rallus obsoletus obsoletus	California Ridgway's rail	E	E	FP	G5T1	S1	Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	None
Riparia riparia	bank swallow	None	T	S	G5	S2	Colonial nester; primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None
Strix occidentalis caurina	northern spotted owl	T	T	S	G3T3	S2S3	Nests in tree cavities or broken off tops of trees in dense section of old forest, well protected from open sky by a dense tree canopy. This species can travel over a mile for foraging.	Moderate
Fish								
Entosphenus tridentatus	Pacific lamprey	None	None	VU, S, SSC	G4	S4	Found in Pacific Coast streams north of San Luis Obispo Co., however regular runs in Santa Clara River. Size of runs is declining. Swift-current gravel-bottomed areas for spawning with water temps 12-18 C. Ammocoetes need soft sand or mud.	Low
Eucyclogobius newberryi	tidewater goby	E	None	SSC, VU	G3	S3	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	None

Table 2
Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Oncorhynchus clarkii clarkii	coast cutthroat trout	None	None	VU, SSC, S	G4T4	S3	Small coastal streams from the Eel River to the Oregon border. Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	Low
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	T	T	None	G4T2Q	S2?	Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California.	Low
Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	T	None	None	G5T2T3Q	S2S3	Aquatic, California coastal river basins from Redwood Creek to and including the Gualala River. Below natural and manmade impassable barriers. Excavates in gravel for spawning.	Low
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	None	None	SSC	G5T4Q	S2	No. Calif coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS. Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer.	Low
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	T	None	None	G5	S1	South of the Klamath River to and including the Russian River.	Low
Oncorhynchus tshawytscha pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	None	None	SSC	G5	S1S2	Aquatic, upper Klamath and Trinity Rivers, Below natural and manmade impassable barriers. Cool, fast flowing water, deep with course gravel.	None
Spirinchus thaleichthys	longfin smelt	C	T	SSC	G5	S1	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	None

Table 2
Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Thaleichthys pacificus	eulachon	T	None	None	G5	S3	Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	None
Insects								
Bombus caliginosus	obscure bumble bee	None	None	VU	G4?	S1S2	Coastal areas from Santa Barabara county to north to Washington state. Food plant genera include *Baccharis, Cirsium, Lupinus, Lotus, Grindelia* and *Phacelia.*	Low
Bombus occidentalis	western bumble bee	None	None	S, IM	G2G3	S1	Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Low
Mammals								
Antrozous pallidus	pallid bat	None	None	SSC, S	G5	S3	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None	None	G5TNR	SNR	Coast Range in southwestern Del Norte County and northwestern Humboldt County. Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	Low
Arborimus albipes	white-footed vole	None	None	SSC	G3G4	S2	Mature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs. Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock.	Low
Arborimus pomo	Sonoma tree vole	None	None	SSC, NT	G3	S3	North coast fog belt from Oregon border to Somona County. In Douglas-fir, redwood & montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionaly take needles of grand fir, hemlock or spruce.	Low

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April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence
Erethizon dorsatum	North American porcupine	None	None	None	G5	S3	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. Wide variety of coniferous and mixed woodland habitat.	Low
Lasionycteris noctivagans	silver-haired bat	None	None	None	G5	S3S4	Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	Moderate
Martes caurina humboldtensis	Humboldt marten	None	CE	SSC, S	G5T1	S1	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	Low
Myotis evotis	long-eared myotis	None	None	S	G5	S3	Found in all brush, woodland and forest habitats from sea level to about 9,000 ft. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Moderate
Pekania pennanti	fisher - West Coast DPS	None	T	SSC, S	G5T2T3Q	S2S3	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	None
Mollusks								
Margaritifera falcata	western pearlshell	None	None	None	G4G5	S1S2	Aquatic. Prefers lower velocity waters.	Low
Reptiles								
Emys marmorata	western pond turtle	None	None	SSC, S, VU	G3G4	S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Low

Table 2
Westhaven Community Services District
April 2019
CNDDB, IPaC Animal scoping list
Crannell and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	FedList	CalList	Other Status	GRank	SRank	Habitats	Potential of Occurrence

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate	FP: fully protected	S: sensitive
CT: candidate threatened	PT: proposed threatened	VU: vulnerable
D: delisted	SSC: species of special concern	NT: near threatened
DPS: distinct population segment	T: threatened	BCC: bird of conservation concern
E: endangered	WL: watch list	IM: imperiled
ESU: evolutionarily significant unit		

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled

G2/S2: imperiled

G3/S3: vulnerable

G4/S4: apparently secure

G5/S5: secure

Table 3
Plants Observed at Study Site April 3, April 10, April 18, May 10, and June 28, 2019
Westhaven Community Services District
Westhaven, CA

Scientific Name	Common Name	Indicator 2016[1]	California Native?
Anthoxanthum odoratum	sweet vernal grass	NL	N[2]
Acer macrophyllum	big leaf maple	FACU	Y[3]
Agrostis stolonifera	creeping bentgrass	FAC	N
Alnus rubra	red alder	FAC	Y
Asarum caudatum	wild ginger	FACU	Y
Bromus diandrus	rip-gut brome	NL	N
Bromus hordeaceus	soft brome	FACU	N
Carex bolanderi	Bolander's Sedge	FAC	Y
Carex gracilior	slender sedge	NL	Y
Carex obnupta	slough sedge	OBL	Y
Crocosmia X crocosmiiflora	crocosmia	FAC	N
Cynosurus echinatus	dogtail grass	NL	N
Cynoglossum grande	Pacific hound's tongue	NL	Y
Cytisus scoparius	Scotch broom	NL	N
Dicentra formosa	Pacific bleeding hearts	FACU	Y
Epilobium ciliatum	fringed willow herb	FACW	Y
Equisetum arvense	field horsetail	FAC	Y
Festuca bromoides	brome fescue	FAC	N
Frangula purshiana ssp. *purshiana*	cascara	FAC	Y
Galium aparine	cleavers	FACU	Y
Galium divaricatum	Lamarck's bedstraw	FACU	N
Gaultheria shallon	salal	FACU	Y
Geranium dissectum	cut leaf geranium	NL	N
Hedera helix	English ivy	FACU	N
Heuchera micrantha	crevice alumroot	NL	Y
Hypochaeris radicata	hairy cat's ear	FACU	N
Ilex aquifolium	English holly	FACU	N
Iris douglasiana	Douglas iris	NL	Y
Juncus bufonius	toad rush	FACW	Y
Juncus occidentalis	western rush	FACW	Y
Juncus patens	gray rush	FACW	Y
Leontodon saxatilis	hawkbit	FACU	N
Lotus corniculatus	bird's foot trefoil	FAC	N
Luzula comosa	hairy woodrush	FAC	Y
Lysichiton americanus	skunk cabbage	OBL	Y
Lysimachia latifolia	pacific star flower	FACW	Y
Maianthemum racemosum	false Solomon's seal	FAC	Y

Table 3
Plants Observed at Study Site April 3, April 10, April 18, May 10, and June 28, 2019
Westhaven Community Services District
Westhaven, CA

Scientific Name	Common Name	Indicator 2016[1]	California Native?
Mentha pulegium	pennyroyal	OBL	N
Whipplea Modesta	modesty	NL	Y
Morella californica	Wax myrtle	FACW	Y
Oxalis oregana	redwood sorrel	FACU	Y
Pectiantia ovalis	coastal miterwort	FACW	Y
Picea sitchensis	Sitka spruce	FAC	Y
Poa annua	annual blue grass	FAC	N
Poa trivialis	rough blue grass	FAC	Y
Polystichum munitum	western sword fern	FACU	Y
Prosartes hookeri	Hooker's fairy bells	NL	Y
Pseudotsuga menziesii	Douglas Fir	FACU	Y
Pteridium aquilinum var. *pubescens*	western bracken fern	NL	Y
Ranunculus repens	creeping buttercup	FAC	N
Rhododendron occidentale var. occidentale	western azalea	FAC	Y
Rubus armeniacus	Himalayan blackberry	FAC	N
Rubus parviflorus	thimble berry	FACU	Y
Rubus spectabilis	salmon berry	FAC	Y
Rubus ursinus	California blackberry	FACU	Y
Sequoia sempervirens	coast redwood	NL	Y
Spergularia rubra	red sandspurry	FAC	N
Sonchus asper	spiny sowthistle	FACU	N
Sonchus oleraceus	common sowthistle	UPL	N
Stachys ajugoides	bugle hedgenettle	OBL	Y
Stellaria media	chickweed	FACU	N
Struthiopteris spicant	deer fern	FAC	Y
Taraxacum officinale	red-seeded dandelion	FACU	N
Tellima grandiflora	fragrant fringe cup	FACU	Y
Tolmiea menziesii	pig-a-back plant	FAC	Y
Trientalis latifolia	western starflower	FACW	Y
Trifolium repens	white clover	FAC	N
Trifolium hirtum	rose clover	NL	N
Trifolium subterraneum	subterranean clover	NL	N
Trillium ovatum	western trillium	FACU	Y
Tsuga heterophylla	western hemlock	FACU	Y
Vaccinium ovatum	evergreen huckleberry	FACU	Y
Vaccinium parvifolium	red huckleberry	FACU	Y
Viola sempervirens	redwood violet	NL	Y
Percent California Native			**64%**

Table 3

Plants Observed at Study Site April 3, April 10, April 18, May 10, and June 28, 2019

Westhaven Community Services District

Westhaven, CA

Scientific Name	Common Name	Indicator 2016[1]	California Native?

1. Indicators are abbreviated as follows:
   - OBL: Obligate
   - FACW: Facultative wet
   - FAC: Facultative
   - FACU: Facultative upland
   - UPL: Upland
   - NL: Not listed
2. N: No
3. Y: Yes

Table 4
Animal Species Observed 4/3 and 4/10/19
Westhaven Community Services District
Westhaven, CA

Scientific Name	Common Name	Family	Nesting Habit	Listed?
Birds				
Selasphorus sasin	Allen's Hummingbird	Trochilidae	Cup nest on horizontal branches, often near shady streams	NL[1]
Ixoreus naevius	Varied Thrush	Turdidae	Cup nest in small tree or shrub usually in mature forest understory	NL
Cyanocitta stelleri	Steller's jay	Corvidae	Bulky cup nest on a horizontal branch of conifer	NL
Poecile rufescens	Chestnut-backed Chickadee	Paridae	Cavity nester, variety of heights	NL
Corvus corax	Common raven	Corvidae	Basket nest of twigs on cliffs, trees, or human made structures	NL
Troglodytes hiemalis	Winter wren	Troglodytidae	Dome nests or inside natural cavities	NL
Regulus satrapa	Golden-crowned Kinglet	Regulidae	Cup nest near the top of a conifer tree.	NL
Corvus brachyrhynchos	American crow	Corvidae	Stick nest in the crotch of branches usually in the top third or quarter of the tree.	NL
Accipiter cooperii	Cooper's Hawk	Accipitridae	Stick nest in a crotch of branches or on horizontal branch about 2/3 up a tree.	WL[2]
Certhia americana	Brown creeper	Certhiidae	Cup nest wedged in a loose piece of bark on a tree trunk.	NL
Mollusks				
Ariolimax columbianus	Banana slug	Ariolimacidae	Lays eggs under logs or in leaves	NL

1. NL: Not Listed
2. WL: Watch List

Wetland and OHWM Delineation Data Forms

4

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Well Site City/County: Westhaven/Humboldt Sampling Date: April 3, 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP1

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15

Subregion (LRR): A, MLRA 4B Lat: 41.034274 Long: -124.107338 Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rhombifolia	90	Y	FAC
2. Sequoia sempervirens	5		NL
3.			
4.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Rubus spectabilis	10	Y	FAC
2. Rubus parviflorus	1		FACU
3. Rubus armeniacus	35	Y	FAC
4.			
5.			
	11	= Total Cover	

Herb Stratum (Plot size: ____)			
1. [illegible]		Y	FAC
2. [illegible]			FACU
3. [illegible]			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	52	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. Hedera helix	17	Y	FACU
2.			
	17	= Total Cover	

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

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:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Surrounding landscape has large amounts of H. helix.

SOIL

Sampling Point: TP1

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
(-1)-0	duff						L	
0-2	7.5YR2.5/1	100					L	fill material. zones of
2-17	7.5YR3/3	60	not redox-				SCL	different colors enveloped.
	10YR3/3	25	imported					
	5YR 4/6	15	material					old piece of brick?
	10YR 5/6	10						brought in from elsewhere
17-24+	7.5YR3/4	90	10YR 3/3	10	C	M	SCL	native soil burned above this layer

Fill

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: This is a fill layer pushed over from man-made slab for well placement. Encountered native @ 18" w/ burned material @ contact.

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Well Site City/County: Westhaven/Humboldt Sampling Date: April 3, 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP2

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A, MLRA 4B Lat: 41.03472.6 Long: -124.107174 Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga heterophylla	10		FACU
2. Sequoia sempervirens	50	X	NL
3. Pseudotsuga menziesii	20	X	FACU
4.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. [illegible]	[illegible]	[illegible]	[illegible]
2. Vaccinium parvifolium	2	Y	FACU
3. Gaultheria shallon	2	Y	FACU
4.			
5.			
	4	= Total Cover	

Herb Stratum (Plot size: 5)			
1. [illegible]	[illegible]	[illegible]	[illegible]
2. [illegible]	[illegible]	[illegible]	[illegible]
3. Claytonia sibirica	T		FAC
4. Viola sempervirens	T		NL
5. Trillium ovatum	T		FACU
6. Polystichum munitum	30	X	FACU
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. Hedera helix	73	Y	FACU
2.			
	73	= Total Cover	

% Bare Ground in Herb Stratum 68

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

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

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: Landscape has large amounts of H helix

SOIL

Sampling Point: TP2

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
~~0-5~~ 0	duff						L	faint contrast
0-7	10YR 7/2	80	10YR 3/3	20	C	M	SL	many roots w/small rounded gravel
7-24+	10YR 3/3	60	2.5Y 6/2	<1%	D	M	SL	w/ small rounded gravel
		40	10YR 5/4	40	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Tree throw depression, soil disturbed. Faint contrast 5-7" horizon (Δh=0, ΔV 1, ΔCHR ≤ 1)

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Well Site City/County: Westhaven/Humboldt Sampling Date: April 3, 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP3

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Slight depr. Slope (%): 10

Subregion (LRR): A, MLRA 4B Lat: 41.034649 Long: -124.106957 Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sequoia sempervirens	80	Y	NL
2. Pseudotsuga menziesii	15		FACU
3.			
4.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Vaccinium parvifolium	T	Y	FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Polystichum munitum	10	X	FACU
2. viola sempervirens	T		NL
3. Oxalis oregana	5	Y	FACU
4. Trillium ovatum	T		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. Hedera helix	40	Y	FACU
2.			
	40	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

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

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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Surrounding landscape has large amounts of H. helix

SOIL

Sampling Point: TP3

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
(+.5)-0	duff							
.5-4.5	10YR 2/2	45					L	faint contrast
	10YR 3/3	55						
4.5-9	7.5YR 2.5/3	100					SL	
9-16	7.5YR 3/3	90	7.5YR 4/4	10	C	M	SL	w/occ. charcoal & rounded pebble
				faint contrast				
16-21+	10YR 4/4	99	10YR 5/3	1	D	M	SCL	occ. 3/3 inclusions

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Upper terrace pit. native soils

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Site City/County: Westhaven/Humboldt Sampling Date: April 9 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP 4

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): drainage way (offchannel) Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): A, MLRA 4B Lat: 41.034711° Long: -124.100470° Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Recently weed whacked / string trimmed. Low spot that nearby OHWM can flow into during high rainfall.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	20	Y	FAC
2. Pseudotsuga menziesii	30	Y	FACU
3.			
4.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Rubus spectabilis	30	Y	FAC
2. Vaccinium ovatum	5	N	FACU
3. ? Rubus armeniacus	15	Y	FAC
4.			
5.			
	50	= Total Cover	

Herb Stratum (Plot size: 5)			
1. ~~Rubus armeniacus~~	~~15~~	~~Y~~	~~FAC~~
2. Polystichum munitum	10	Y	FACU
3. Juncus ethusus	22	Y	FACW
4. Osmanthe serrulata sen	7	N	OBL
5. Blechnum spicant	8	N	FAC
6. Athyrium filix-femina	1	N	NL
7.			
8.			
9.			
10.			
11.			
	48	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 52

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: TP 4/

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
0-18+	10YR 3/2	99	7.5YR 4/6	<1	C	M	SCL	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: AAD NO REACTION 2-8 inches

PUT IN DIRECT LIGHT, NO SIGNS OF REACTION TO OXYGEN

Let Sit for 1/2 hr

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Water Table Present? Yes ✓ No _____ Depth (inches): 11"

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

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Site City/County: Westhaven/Humboldt Sampling Date: April 02019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP5

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): A, MLRA 4B Lat: 41.034912° Long: -124.099964° Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Tree-throw pit next to tank.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	15	Y	FAC
2. Sequoia sempervirens	50	Y	NL
3.			
4.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5)			
1. Vaccinium ovatum	7	Y	FACU
2. Gaultheria shallon	5	Y	FACU
3.			
4.			
5.			
	12	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	3		FACU
2. Bromus spicatus	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	18	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 82

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Trace amounts of Bryum

SOIL

Sampling Point: TP 5

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
(-1)-0								DUFF OM
0-11	10YR 2/1	100					L	Many roots, wet
11-14	10YR 3/2	99	2.5Y 6/2	1	D	M	L	
14-24+	10YR 3/2	93	2.5Y 6/2	7	D	M	SCL	
			7.5YR 5/4	<1	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks: Below 12" depth positive NAF reaction (below 12" at soil horizon)

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Water Table Present? Yes ____ No / Depth (inches): 22"

Saturation Present? (includes capillary fringe) Yes ____ No / Depth (inches): 19"

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Site City/County: Westhaven/Humboldt Sampling Date: April 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP 6

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 8

Subregion (LRR): A, MLRA 4B Lat: _____ Long: _____ Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Below drainage culvert outflow from treatment facility

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sequoia sempervirens	90	X	NL
2.			
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5)			
1. Frangula purshiana	1	Y	FAC
2.			
3.			
4.			
5.			
	1 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Oxalis oregana	40	Y	FACU
2. Prosartes hookeri	1		NL
3. Polystichum munitum	5		FACU
4. Blechnum spicant	7		FAC
5. Stachys ajugoides	1		NL
6. Trillium ovatum	3		FACU
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 45%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: TP6

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
1" duff								Duff
0-7	10YR 3/2	100					CL	
7-20+	10YR 3/3	80	10YR 4/4	20			SiCL	FILL Material w/ charcoal
								FILL Material w/ charcoal

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

Charcoal & aggregates throughout. Appears to consist primarily of fill material
Coarse roots throughout

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Plant City/County: Westhaven/Humboldt Sampling Date: April 10 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP4

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): none Slope (%): 10

Subregion (LRR): A, MLRA 4B Lat: Long: Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Sidewall of constructed drainage ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	35	Y	FACU
2. Sequoia sempervirens	17	Y	NL
3. Alnus rubra	4		FAC
4.			
	56	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5)			
1. Blechnum spicant	13 %	Y	FAC
2. Rubus ursinus	3 %		FACU
3. Polystichum munitum	4 %	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 80 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 % (A/B)

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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: w/ Bryum ~15% ground cover Recently string trimmed

SOIL

Sampling Point: TP7

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
0-5	10YR 3/2	100					CL	
5-8	5YR 5/6	70	2.5Y 6/1	30	D	M	SCL	
8-22+	2.5Y 5/6	50	2.5Y 6/1	50	D	M	SCL	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Starting @ toe of bank on constructed ditch 20" deep. Surface water flowing @ 1" depth. Positive reaction to α,α,d below 12"

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Water Table Present? Yes _____ No ✓ Depth (inches): 20

Saturation Present? (includes capillary fringe) 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 – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Plant City/County: Westhaven/Humboldt Sampling Date: April 18 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP8

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): Concave Slope (%): 7

Subregion (LRR): A, MLRA 4B Lat: Long: Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: In constructed drainage ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	7		FAC
2. Pseudotsuga menziesii	15	y	FACU
3. Sequoia sempervirens	20	y	NL
4.			
	42	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Rubus spectabilis	1	x	FAC
2.			
3.			
4.			
5.			
	1	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Bromus sitchensis	12	y	FAC
2.			
3. Rubus ursinus	1		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	13	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 87%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

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:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes No ✓

Remarks: Recently stray trimmed

SOIL

Sampling Point: TP8

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
0-2	2.5YR 4/2	100					SL	
2-8	7.5YR 5/6	77	5YR 5/6	8	C	m	CL	
			10YR 3/1	5	C	m		
			2.5Y 6/3	10	D	m		
8-11	7.5YR 5/6	80	2.5Y 6/3	20	D	m	CL	
11-22	7.5YR 5/8	55	2.5Y 6/2	45	D	m	SCL	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

no a.a.d. reaction

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✓ No ____ Depth (inches): 1"

Water Table Present? Yes ____ No ____ Depth (inches): ____

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

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

no a.d.d reaction

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Plant City/County: Westhaven/Humboldt Sampling Date: April 18, 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP9

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 6

Subregion (LRR): A, MLRA 4B Lat: Long: Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Low depression

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Morella californica	75	Y	FACW
2. Pseudotsuga menziesii	2		
3.			
4.			
	77	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Ribes spectabilis	3	Y	FAC
2. Gaultheria shallon	2	Y	FACU
3.			
4.			
5.			
	5	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Ribes ursinus	1		FACU
2. Blechnum spicant	18	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	19	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 81 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: TP9

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
0-18"	2.5Y 3/1	100					L	w/ charcoal
18-24+	2.5Y 4/2	83	2.5Y 3/1	10	C	M	SiL	
			7.5YR 5/6	7	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- * ✓ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

* + aaD, 1 top layer w/in 12" . multiple positive reaction sites

No gleyed #12 - dk yellowish color in value & chroma

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2"

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment City/County: Westhaven/Humboldt Sampling Date: April 8, 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP 10

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): hillslope/terrace Local relief (concave, convex, none): none Slope (%): 8

Subregion (LRR): A, MLRA 4B Lat: 41.034608 Long: -124.106969 Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Morella californica	45	Y	FACW
2. Sequoia sempervirens	28	Y	NL
3.			
4.			
	73	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5)			
1. Gaultheria shallon	9	Y	FACU
2. Rubus spectabilis	T		FAC
3. Frangula purshiana	5	Y	FAC
4.			
5.			
	14	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Blechnum ~~spicata~~ spicant	9	Y	FAC
2. Rubus ursinus	1		FACU
3. Polystichum munitum	5	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 85 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	14	x 3 =	42
FACU species	15	x 4 =	60
UPL species	28	x 5 =	140
Column Totals:	102 (A)		332 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: TP10

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
(-1)-0								duff
0-5	10YR 3/2	100					L	
5-7	2.5Y 4/2	80	10YR 5/6	20	C	m	SiCL	
7-11	2.5Y 4/2	65	10YR 5/6	35	C	m	SiCL	
11-17+	10YR 6/8	70	10YR 4/2	30	D	m	SiCL	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✓ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

no a-a-d reaction

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Water Table Present? Yes ✓ No ____ Depth (inches): 7"

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): to surface

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Westhaven CSD Treatment Plant City/County: Westhaven/Humboldt Sampling Date: April 18 2019

Applicant/Owner: Westhaven CSD State: CA Sampling Point: TP11

Investigator(s): CW, SR Section, Township, Range: T 08N 001E SEC 31

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): A, MLRA 4B Lat: _____ Long: _____ Datum: WSG 84

Soil Map Unit Name: Lepoil-Espa-Candymountain Complex NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sequoia sempervirens	50	Y	NL
2. Alnus rubra	7	N	FAC
3. Pseudotsuga menziesii	10	N	FACU
4. Morella californica	8	N	FACW
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Sambucus mexicana	35	Y	FACU
2. Rubus spectabilis	2	N	FACW
3.			
4.			
5.			
	37	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Plectritis congesta	5	Y	FAC
2. Rubus ursinus	1	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	6	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 94 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: TP11

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
(-1)-0								Duff layer
0-12	10YR 3/2	100					L	
12-17+	2.5Y 5/4	94	10YR 5/6	6	C	M	SiCL	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

NO + reaction to acid w/in 12 inches

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

OHWM Delineation Cover Sheet Page 1 of 2

Project: Weshaven Wetland/Bio Report **Date:** 4/03/19

Location: OHWM 1 **Investigator(s):** SR

Project Description:

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

well shaded, perennial, some small wood debris in channel, gravel substrate

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

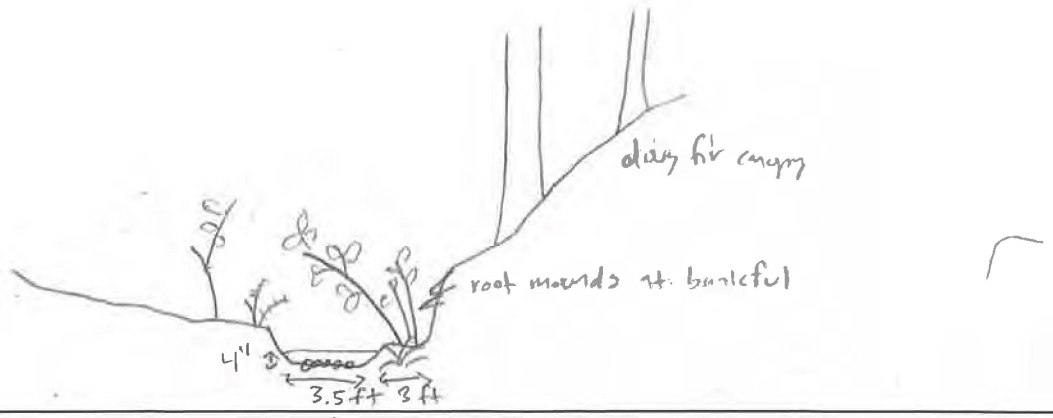
Hydrologic/hydraulic information acquired? ☐ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # _____ **OHWM Delineation Datasheet** Page 1 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☒ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

angles sharply to North downstream with legacy wood, debris / sediment forming structure

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM		5	40	55		
Below OHWM		5	20	75		

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	80	40	70	30
Below OHWM	90	30	85	15

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Delineation Cover Sheet Page 1 of 2

Project: Westhaven Wetland/Bio Report **Date:** 04/03/19

Location: OHWM #2 **Investigator(s):** SR

Project Description:

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Steep conditions on one side with some mature wood root structures.
No evidence of recent anthropogenic or alternate disturbance.

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # _____ **OHWM Delineation Datasheet** Page 2 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☑ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None
Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	10	20	20	48	2	
Below OHWM	—	5	15	40	40	

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	40	60	70	30
Below OHWM	70	25	85	15

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Delineation Cover Sheet

Project: Westhaven Wetland/Bio Report **Date:** 04/03/19

Location: OHWM # 3 **Investigator(s):** SR

Project Description:

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Numerous pieces of woody debris up and downstream (mostly small to large branches and fallen tree remnants)
Little to no evidence to record disturbance.

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

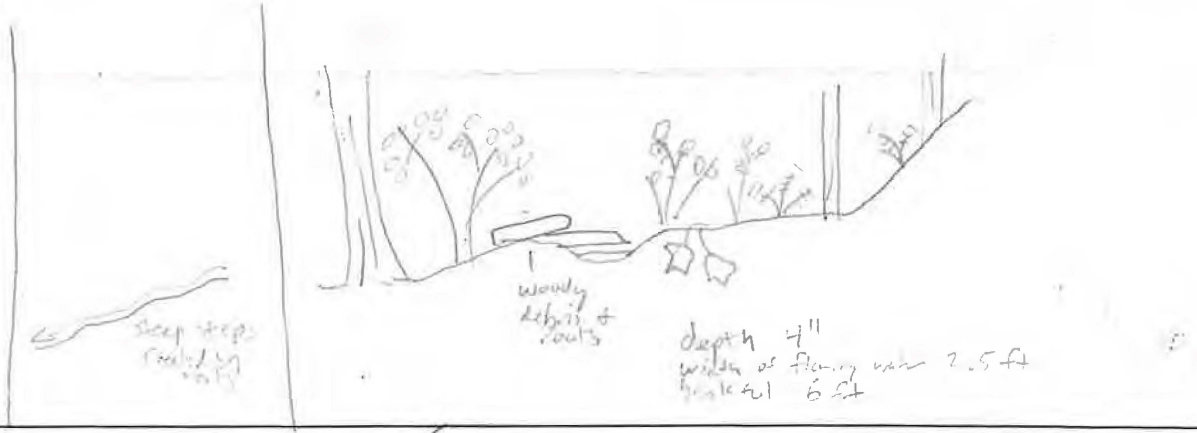
Hydrologic/hydraulic information acquired? ☐ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # _____ **OHWM Delineation Datasheet** Page 2 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☑ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None
Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	45	10	5	—	
Below OHWM	45	55				

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	90	70	70	30
Below OHWM	70	80	90	10

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM # 4

OHWM Delineation Cover Sheet Page ____ of ____

Project: Westhaven CSD **Date:** 4/10/19

Location: South of project bndry **Investigator(s):** Cindy Wilcox

Project Description:

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Native drainage in woodland area
Skunk Cabbage, Cascara, redwood, sword fern, false solomon's seal, fairy lantern, salal, deer fern, salmon berry, maiden fern trillium
some English ivy

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☒ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

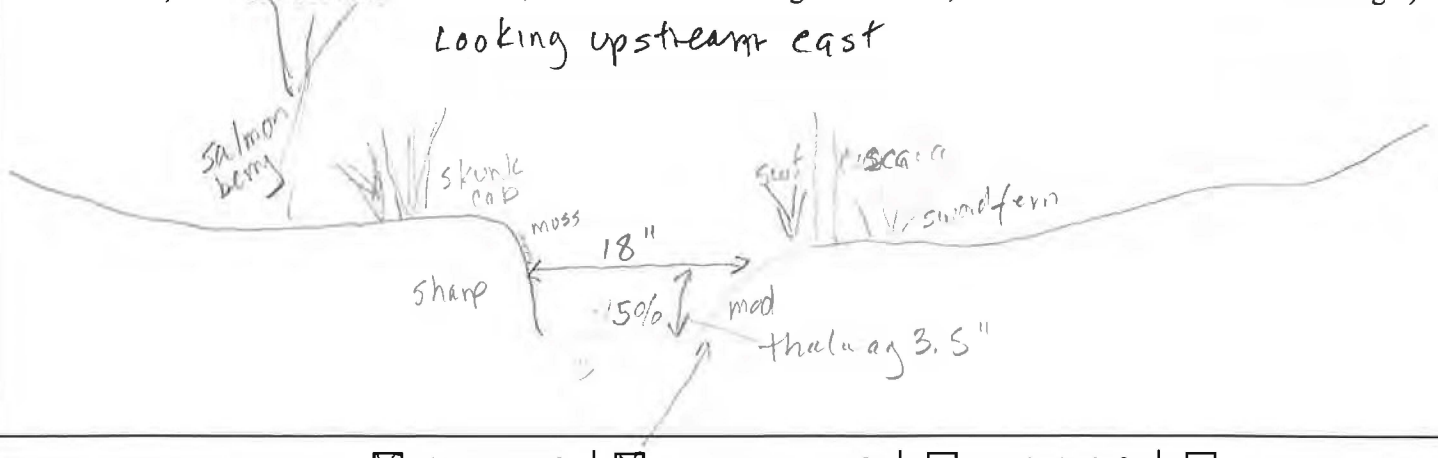
Hydrologic/hydraulic information acquired? ☐ **Yes** ☑ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # OHWM #4 **OHWM Delineation Datasheet** Page 2 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☒ Sharp (> 60°) | ☒ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:
Native stream channel south of project area

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	70	30	—	—	—	Y
Below OHWM	20	80	10	—	—	N

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	20	30	0	90
Below OHWM	30	15	55	10 (duff)

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Delineation Cover Sheet Page ____ of ____

Project: Westhaven CSD **Date:** 4/10/19

Location: OHWM #5 **Investigator(s):** SR

Project Description:

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Woody debris in stream, lots of cobbles, very well shaded. some undercutting near debris, Clear water running. No noticeable disturbances

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

DS, UP, ST, VEG

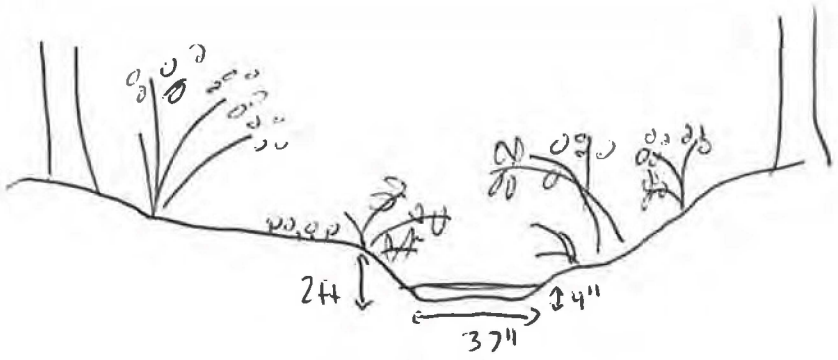
Hydrologic/hydraulic information acquired? ☐ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # _____ **OHWM Delineation Datasheet** Page ____ of ____

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☑ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	–	–	20	80	–	
Below OHWM	30	10	40	20	–	

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	30	70	80	20
Below OHWM	60	70	90	10

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM#6 **OHWM Delineation Cover Sheet** Page 1 of 2

Project: Westhaven CSD 018193 **Date:** 4/10/19.

Location: Treatment Plant **Investigator(s):** Cindy Wilcox

Project Description:

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Streamway along N property line. Excavated drainage ditch merges from east 10' upstream. TP4 where out flow pools. stream flows off property, under 4th St. & into wetland area ~ 200' west of prop. line. Joseph Saber saw no drainage in January 2019.

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

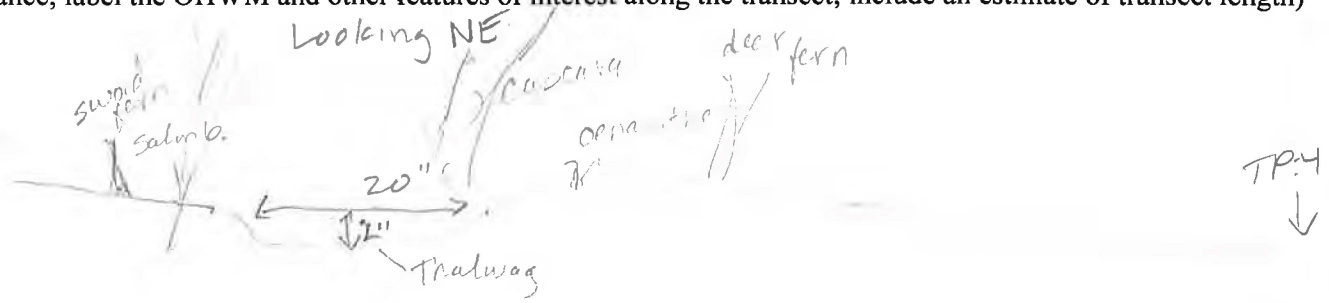
Hydrologic/hydraulic information acquired? ☐ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # OHWM #6 **OHWM Delineation Datasheet** Page ____ of ____

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☑ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	70	30	0	1	0	N
Below OHWM	35	55	9	2	0	N

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	60	5	20	15
Below OHWM	40	10	3	97

Notes/Description:

Salal, oenanthes, deer fern, sword fern, cascara

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation



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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1 – Northern
619 Second Street
Eureka, CA 95501
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

October 11, 2021

Paul Rosenblatt
Westhaven Community Services District
446B Sixth Avenue
Trinidad, CA 95570

Subject: California Department of Fish and Wildlife (CDFW) consultation for proposed Public Utility Exemption harvest in Watercourse Lake and Protection Zones on Westhaven Community Services District's (WCSD) ownership.

Dear Mr. Rosenblatt:

This memorandum responds to a request by you for a consultation with CDFW to evaluate a proposed exemption in association with Class II and III WLPZ's. The exemption and CDFW points of interest occur on tributaries to a major watercourse draining to Trinidad Bay, Pacific Ocean (Figure 1). California Code of Regulation Title 14 § 916.9 (s)(6) requires consultation with CDFW if proposed harvest or timber operations in association with an exemption will occur within a WLPZ with anadromous salmonids. The project proposes to harvest hardwood and conifer in Class II and III watercourses in association with protection of a drinking water storage tank and treatment facility. On September 9, 2021, Senior Environmental Scientist Specialist, Nick Simpson, attended a site inspection with you to evaluate multiple Class II and III tributaries proposed for WLPZ operations.

In addition to the proposed exemption inspection, existing watercourse crossings on and adjacent to WCSD property (See CDFW Points 2 through 5) were evaluated to asses the risk of imminent failure and check compliance with Fish and Game Code § 5650 which states in part: "*it is unlawful to deposit in, permit to pass into, or place where it can pass into the waters of this state any of the following (in part): (6) Any substance or material deleterious to fish, plant life, mammals, or bird life.*"

Class II tributaries in this watershed contain habitat for tailed frog (*Ascaphus trueii*) and southern torrent salamander (*Rhyacotriton variegatus*), California state species of concern. In addition, Class II tributaries provide habitat for Pacific giant salamander (*Dicamptodon tenebrosus*). Downstream of Highway 101, an unconfirmed population of coastal cutthroat trout (*Oncorhynchus clarki clarki*) is believed to exist. WLPZ's are also utilized by rare and sensitive wildlife species, though California Natural Diversity Database results indicate no nests or denning sites of sensitive or endangered species have been identified within 0.25 miles of the project.

CDFW Point 1 (Proposed Exemption Harvest): The project proposes to harvest multiple hardwood and conifer in Class II and III watercourses in association with protection of a drinking water storage tank and treatment facility. Potential impacts from harvesting in the Class II and III WLPZ to these species include increased water temperatures due to riparian canopy removal, fine sediment deposition due to heavy equipment and tree felling related soil disturbance and direct impact due to heavy equipment and tree felling operations. Sediment deposition reduces interstitial habitat and aquatic macroinvertebrate food production for amphibians and fish downstream.

The following recommendations are included to minimize impacts to sensitive species, while potentially restoring properly functioning riparian conditions over the long term.

1. No operations in the winter period shall occur except during extended dry periods and where saturated soil conditions do not exist.

2. Any disturbed areas within Equipment Limitation Zone or WLPZ exceeding 100 square feet shall be treated with erosion control.

3. No trees shall be removed within the channel of a Class II or III watercourse.

4. Overstory canopy retention in Class II watercourses shall be a minimum of 50%.

5. The largest conifers shall be prioritized for retention in all WLPZ's.

6. Trees shall be felled away from Class II and III watercourse channels where feasible.

7. To minimize the delivery of fine sediment from appurtenant roads to adjacent streams due to surface erosion and road related landslides during the winter period, roads shall be monitored and maintained concurrent with operations.

CDFW Point 2 (Road Point): An existing Class II watercourse Humboldt crossing within the vicinity of the proposed exemption harvest. Given the absence of a culvert within the crossing, CDFW considers this site prone to failure in the future and in potential violation of Fish and Game Code 5650 (a). CDFW recommends this site be remediated in a timely manner.

Immediately upstream of CDFW Point 2, there was an existing 24-inch culvert crossing draining a pond to a Class II watercourse. If the pond inlet were to plug during a large storm event, flow could be diverted down the road resulting in major gully erosion. CDFW recommends a critical dip be installed at this crossing.

CDFW Points 3 and 4 (Road Points): Existing Class II 30-inch culvert crossings constructed over Humboldt crossings. These sites occur on WCSD's property, but is not appurtenant to the proposed exemption harvest. More than 1/3 of the culvert was

showing signs of rusting through and imminent failure. CDFW recommends these crossing be pulled and reconstructed to pass the 100-year flow and associated debris.

CDFW Point 5 (Road Point): Two existing Class II 36-inch culvert crossings on major Humboldt County roads, not appurtenant to the proposed exemption. WCSD requested CDFW evaluate the crossing due to concerns with public access and right of way if the crossing was to fail. The upstream (Second Avenue) crossing outlet was observed to be completely buried in fill. The drop inlet of the downstream (Westhaven Drive) crossing is heavily encroached upon by sediment and vegetation despite the presence of temporary trash rack. This crossing complex shows signs of imminent failure and should be prioritized for remediation as soon as possible.

Please direct questions or correspondence regarding this letter to Senior Environmental Scientist (Specialist) Nicholas Simpson at (707) 445-6512 or nicholas.simpson@wildlife.ca.gov.

Sincerely,

Rich Klug
Senior Environmental Scientist (Supervisor)

ec:

Westhaven Community Services District
Paul Rosenblatt
prosenblatt.wcsd@suddenlinkmail.com

California Department of Forestry and Fire Protection
Jay Fazio, Santa Rosa Review Team
jay.fazio@fire.ca.gov ; santarosareviewteam@fire.ca.gov

North Coast Regional Water Quality Control Board
Forest Fortescue
forest.fortescue@waterboards.ca.gov

California Department of Fish and Wildlife
Rich Klug, Nicholas Simpson, Steven Criss, Bianca Hayashi, Steven Baumgartner; David Haynes, Merissa Hanisko
richard.klug@wildlife.ca.gov; nicholas.simpson@wildlife.ca.gov; steven.criss@wildlife.ca.gov; bianca.hayashi@wildlife.ca.gov; steven.baumgartner@wildlife.ca.gov; david.haynes@wildlife.ca.gov; merissa.hanisko@wildlife.ca.gov;



Figure 1. Overview of CDFW road and exemption points of interest during the October 7, 2021 inspection.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To: 06/18/2024 22:48:46 UTC
Project Code: 2024-0105958
Project Name: Westhaven Community Services District Disinfection Byproduct Reduction Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

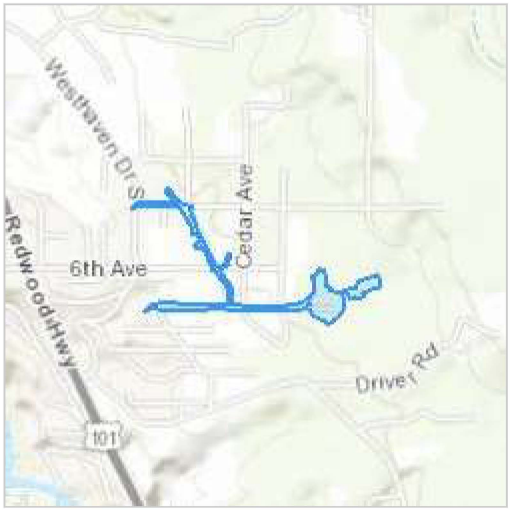
This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

PROJECT SUMMARY

Project Code: 2024-0105958
Project Name: Westhaven Community Services District Disinfection Byproduct Reduction Project
Project Type: Water Supply Facility - Maintenance / Modification
Project Description: Water system improvements (treatment, storage, and distribution).
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.036071250000006,-124.1043590106616,14z



Counties: Humboldt County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment *Martes caurina* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

BIRDS

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

FISHES

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

NAME	STATUS

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Lassics Lupine *Lupinus constancei*	Endangered

Population:
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7976

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

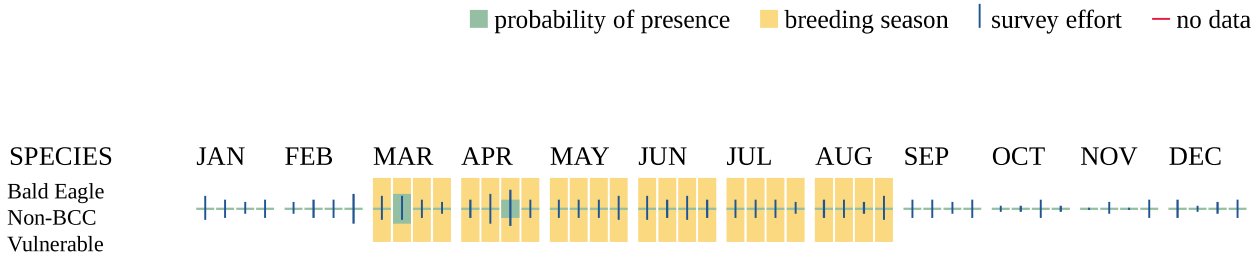
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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1. The Migratory Birds Treaty Act of 1918.
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3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Ancient Murrelet *Synthliboramphus antiquus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11929	Breeds Mar 10 to Sep 10

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 1 to Aug 31
Black Oystercatcher *Haematopus bachmani* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black Turnstone *Arenaria melanocephala* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10557	Breeds elsewhere
Brandt's Cormorant *Urile penicillatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11903	Breeds Apr 15 to Sep 15
California Gull *Larus californicus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10955	Breeds Mar 1 to Jul 31
Cassin's Auklet *Ptychoramphus aleuticus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6967	Breeds Mar 21 to Sep 21
Chestnut-backed Chickadee *Poecile rufescens rufescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11913	Breeds Mar 1 to Jul 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10575	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9465	Breeds May 15 to Aug 10

NAME	BREEDING SEASON
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Oregon Vesper Sparrow *Pooecetes gramineus affinis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5141	Breeds Apr 21 to Aug 31
Red Knot *Calidris canutus roselaari* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8880	Breeds elsewhere
Rufous Hummingbird *Selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds Jun 1 to Aug 10
Tufted Puffin *Fratercula cirrhata* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/430	Breeds May 5 to Oct 5
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Western Gull *Larus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11969	Breeds Apr 21 to Aug 25

NAME	BREEDING SEASON
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds elsewhere
Wrentit *Chamaea fasciata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10668	Breeds Mar 15 to Aug 10

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

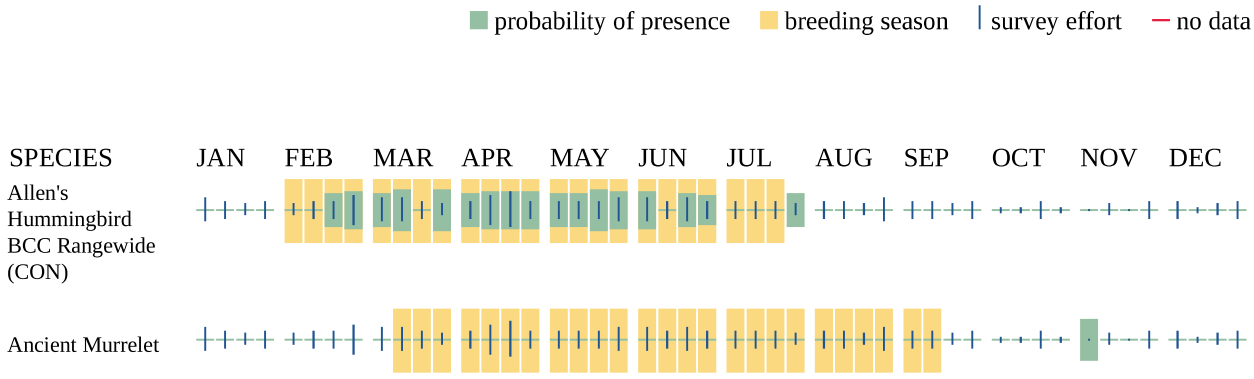
Probability of Presence (▪)

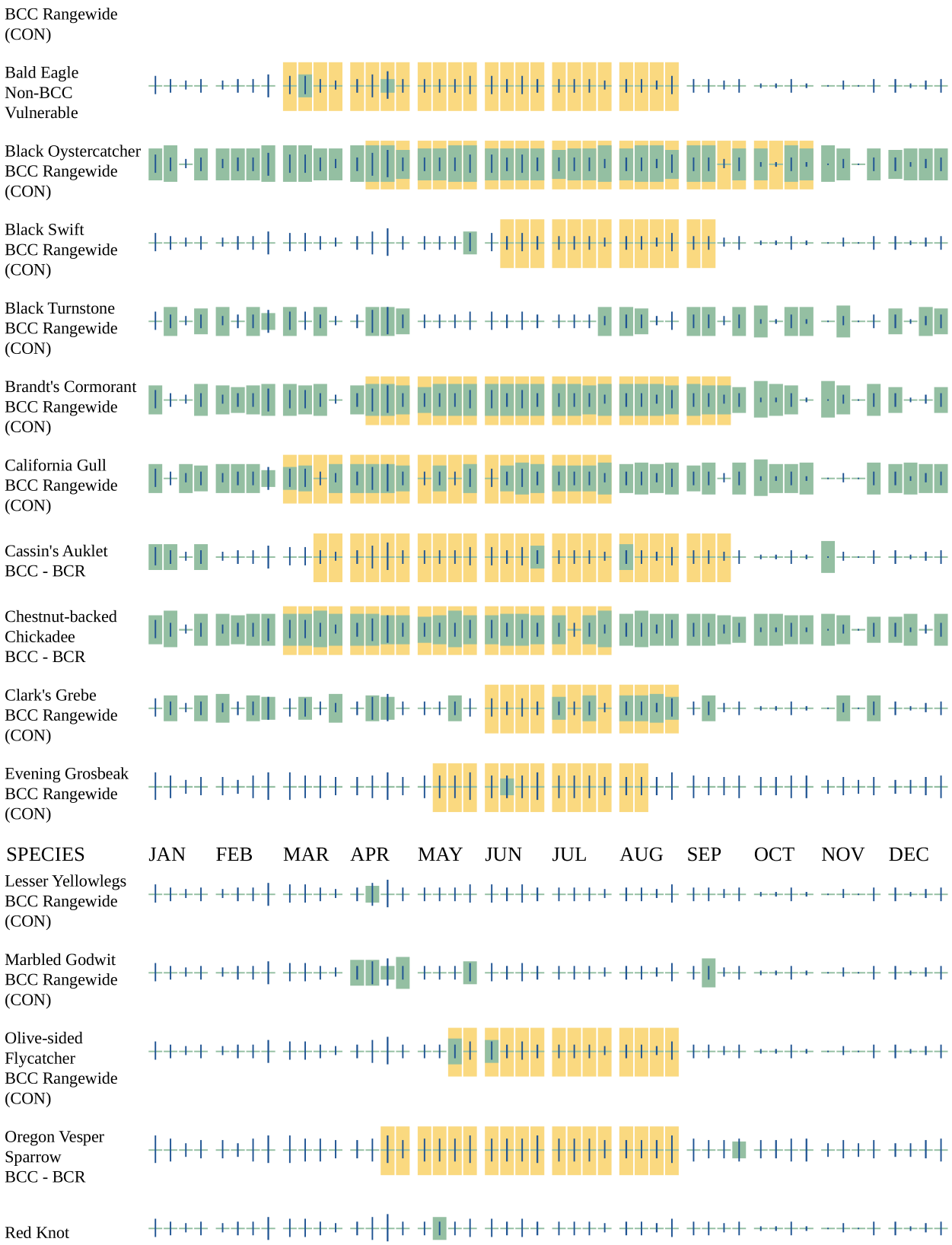
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

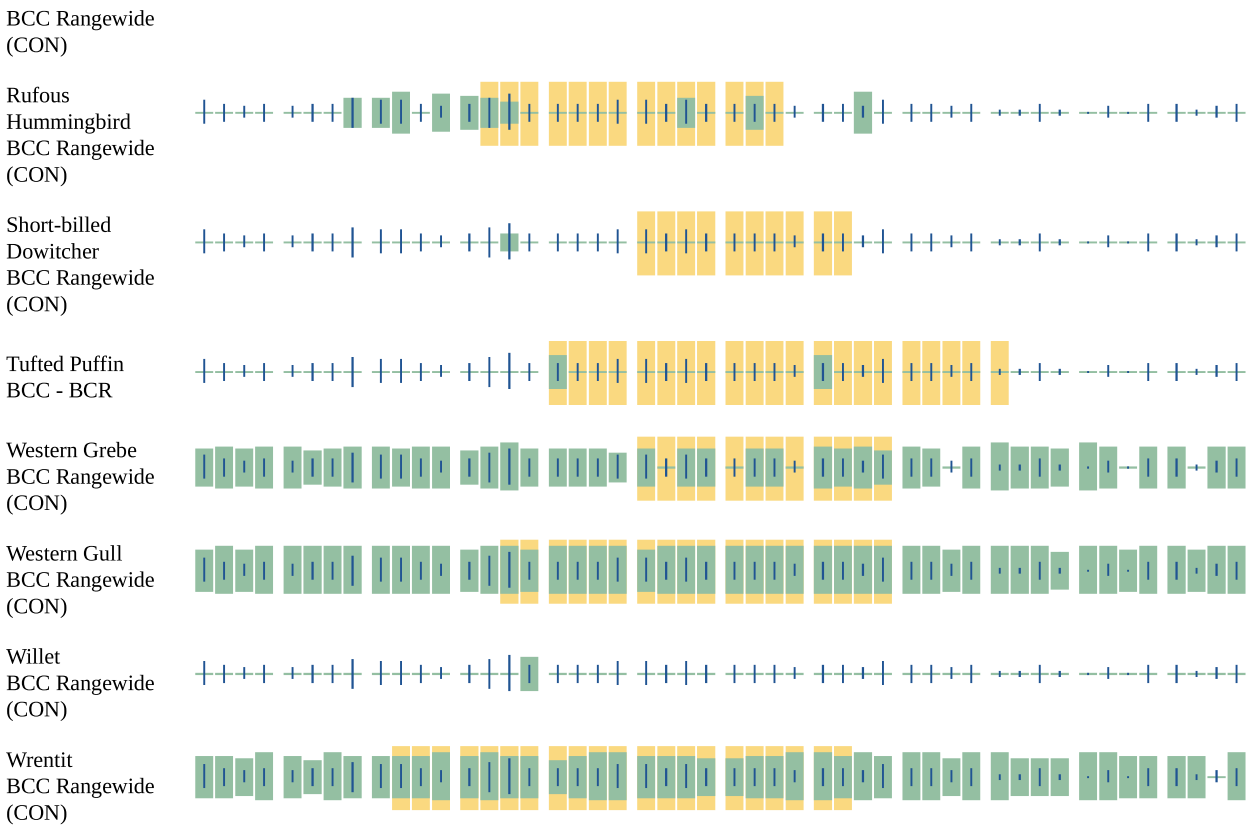
Breeding Season (▪)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.




BCC Rangewide (CON)
Bald Eagle Non-BCC Vulnerable
Black Oystercatcher BCC Rangewide (CON)
Black Swift BCC Rangewide (CON)
Black Turnstone BCC Rangewide (CON)
Brandt's Cormorant BCC Rangewide (CON)
California Gull BCC Rangewide (CON)
Cassin's Auklet BCC - BCR
Chestnut-backed Chickadee BCC - BCR
Clark's Grebe BCC Rangewide (CON)
Evening Grosbeak BCC Rangewide (CON)
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Lesser Yellowlegs BCC Rangewide (CON)
Marbled Godwit BCC Rangewide (CON)
Olive-sided Flycatcher BCC Rangewide (CON)
Oregon Vesper Sparrow BCC - BCR
Red Knot



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

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

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

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: ENPLAN
Name: Carla Thompson
Address: 3179 Bechelli Ln
City: Redding
State: CA
Zip: 96002
Email cthompson@enplan.com
Phone: 5302210440

National Marine Fisheries Service Species List
June 2024

Quad Name: Crannell **Quad Number: 41124-A1**

ESA Anadromous Fish

SONCC Coho ESU (T)
CC Chinook Salmon ESU (T)
NC Steelhead DPS (T)
Eulachon (T)
sDPS Green Sturgeon (T)

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat
CC Chinook Salmon Critical Habitat
NC Steelhead Critical Habitat
sDPS Green Sturgeon Critical Habitat

ESA Sea Turtles

East Pacific Green Sea Turtle (T)
Olive Ridley Sea Turtle (T/E)
Leatherback Sea Turtle (E)

ESA Whales

Blue Whale (E)
Fin Whale (E)
Humpback Whale (E)
Southern Resident Killer Whale (E)
North Pacific Right Whale (E)
Sei Whale (E)
Sperm Whale (E)

Essential Fish Habitat

Coho EFH
Chinook Salmon EFH
Groundfish EFH
Coastal Pelagics EFH

ESA and MMPA Cetaceans/Pinnipeds

MMPA Cetaceans
MMPA Pinnipeds

TABLE 1
Rarefind (CNDDB) Report Summary

Five-Mile Radius around Project Area
June 2024

Listed Element	Quadrangle[1]					Status[2]
	AN	BL	CR	PC	TR	
ANIMALS						
American peregrine falcon	•				•	FD, SD
Bank swallow	•		•			ST
Coast cutthroat trout	•	•	•		•	SSSC
Double-crested cormorant			•		•	WL
Fisher – west coast DPS	•					SSSC
Foothill yellow-legged frog – north coast DPS			•			SSSC
Fork-tailed storm petrel			•		•	SSSC
Humboldt mountain beaver	•		•		•	None
Long-eared myotis	•					None
Longfin smelt					•	FP, ST
North American porcupine					•	None
Northern red-legged frog	•		•		•	SSSC
Obscure bumble bee			•		•	None
Osprey			•			WL
Pacific tailed frog			•		•	SSSC
Rhinoceros auklet			•		•	WL
Southern torrent salamander			•		•	SSSC
Steelhead – northern California DPS winter-run	•		•			FT
Steller sea lion					•	FD
Tufted puffin			•		•	SSSC
Western bumble bee	•					SCE
Western pearlshell			•			None
Western pond turtle			•			FP, SSSC
White-footed vole					•	SSSC
PLANTS						
Beach layia			•			FT, SE, 1B.1
Black crowberry					•	2B.2
Bristle-stalked sedge			•		•	2B.2
Coast checkerbloom	•					1B.2
Cylindrical trichodon					•	2B.2
Dark-eyed gilia			•			1B.2
Humboldt Bay owl's-clover	•					1B.2
Lyngbye's sedge	•		•			2B.2
Northern clustered sedge	•					2B.2

Oregon coast paintbrush			•		•	2B.2
Pacifica gilia			•			1B.2
Pink sand-verbana	•		•			1B.1
Running-pine	•		•	•	•	4.1
Seacoast ragwort			•			2B.2
Seaside pea	•		•			2B.1
Siskiyou checkerbloom	•					1B.2
Tracy's romanzoffia					•	2B.3
Twisted horsehair lichen			•		•	1B.2
Western lily	•					FE, SE, 1B.1
Wolf's evening-primrose	•		•			1B.1

Highlighting denotes the quadrangle in which the project site is located

[1]QUADRANGLE CODE

AN = Arcata North BL = Blue Lake TR = Trinidad
CR = Crannell PC = Panther Creek

[2]STATUS CODES

Federal

FE	Federally Listed – Endangered
FT	Federally Listed – Threatened
FC	Federal Candidate Species
FP	Federal Proposed Species
FDR	Federally Delisted Recovered
FSC	Federal Species of Concern

State

SFP	State Fully Protected
SR	State Rare
SE	State Listed – Endangered
ST	State Listed – Threatened
SC	State Candidate Species
SDR	State Delisted Recovered
SSSC	State Species of Special Concern
WL	Watch List

Rare Plant Rank

1A Plants Presumed Extinct in California
1B Plants Rare, Threatened or Endangered in California and Elsewhere
2 Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3 Plants About Which We Need More Information *(A Review List)*
(generally not considered special-status, unless unusual circumstances warrant)
4 Plants of Limited Distribution *(A Watch List)*
(generally not considered special-status, unless unusual circumstances warrant)

Rare Plant Threat Ranks

0.1 Seriously Threatened in California
0.2 Fairly Threatened in California
0.3 Not Very Threatened in California

TABLE 2
California Native Plant Society
Inventory of Rare and Endangered Plants
U.S. Geological Survey's Crannell 7.5-minute Quadrangle

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
American glehnia	*Glehnia littoralis* ssp. leiocarpa	4.2	May-Aug	None	None
Beach layia	*Layia carnosa*	1B.1	Mar-Jul	CE	FE
Bolander's reed grass	*Calamagrostis bolanderi*	4.2	May-Aug	None	None
Bristle-stalked sedge	*Carex leptalea*	2B.2	Mar-Jul	None	None
California pinefoot	*Piptyopus californicus*	4.2	(Mar-Apr) May-Aug	None	None
Dark-eyed gilia	*Gilia millefoliata*	1B.2	Apr-Jul	None	None
Heart-leaved twayblade	*Listeria cordata*	4.2	Feb-Jul	None	None
Leafy-stemmed mitrewort	*Mistellastra caulescens*	4.2	(Mar)Apr-Aug	None	None
Lynbye's sedge	*Carex lyngbyei*	2B.2	Apr-Aug	None	None
Methuselah's beard lichen	*Usnea longissimi*	4.2	N/A	None	None
Nodding semaphore grass	*Pleuropogon refractus*	4.2	(Mar) Apr-Aug	None	None
Oregon coast paintbrush	*Castilleja litoralis*	2B.2	Jun-Jul	None	None
Pacific gilia	*Gilia capitate* ssp. *pacifica*	1B.2	Apr-Aug	None	None
Pacific golden saxifrage	*Chrysosplenium glechomifolium*	4.3	Feb-Jun (Jul)	None	None
Pink sand-verbena	*Abronia umbellata* var. *breviflora*	1B.1	Jun-Oct	None	None
Running-pine	*Lycopodium clavatum*	4.1	Jun-Aug (Sep)	None	None
Seacoast ragwort	*Packera bolanderi* var. *bolanderi*	2B.2	(Jan-Apr) May-Jul (Aug)	None	None
Seaside pea	*Lathyrus japonicus*	2B.1	May-Aug	None	None
Sea-watch	*Angelica lucida*	4.2	Apr-Sep	None	None
Siskyou checkerbloom	*Sidalcea malviflora ssp. patula*	1B.2	(Mar-Apr) May-Aug	None	None
Trailing black currant	*Lathyrus laxiflorum*	4.3	Mar-Jul (Aug)	None	None
Twisted horsehair lichen	*Sulcaria spiralifera*	1B.2	N/A	None	None
White-flowered rein orchid	*Piperia candida*	1B.2	(Mar) May-Sep	None	None
Wolf's evening-primrose	*Oenothera wolfii*	1B.1	May-Oct	None	None

Rare Plant Rank	
1A	Plants Presumed Extinct in California and either Rare or Extinct Elsewhere
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2A	Plants Presumed Extinct in California but Common Elsewhere
2B	Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3	Review List: Plants About Which More Information is Needed
4	Watch List: Plants of Limited Distribution
Rare Plant Threat Rank	
0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

Source: *California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). http://www.rareplants.cnps.org. Accessed June 14, 2024.*

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
PLANTS							
Beach layia	*Layia carnosa*	FT, SE, 1B.1	Beach layia occurs on coastal scrub and on sparsely vegetated, semi-stabilized coastal dunes, usually behind foredunes. The species is reported between sea level and 230 feet in elevation. The flowering period is March to July.	No	No	No	According to CNNDB records, beach layia was reported near the mouth of the Little River in 1937; however, the habitat was destroyed with construction of Highway 101, and the species is extirpated from the reported location. No potentially suitable habitat for beach layia occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Black crowberry	*Empetrum nigrum*	1B.2	Black crowberry occurs in wetlands and non-wetlands within northern coastal shrub and coastal prairie communities. The species is reported between sea level and 650 feet in elevation. The flowering period is June to August.	No	No	No	No potentially suitable habitat for black crowberry occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Bristle-stalked sedge	*Carex leptalea*	2B.2	Bristle-stalked sedge, otherwise known as flaccid sedge, occurs in freshwater wetlands, meadows, marshes, and bogs/fens. The species is reported between sea level and 2,300 feet in elevation. The flowering period is March to July.	Yes	No	No	Potentially suitable habitat for bristle-stalked sedge is present near the on-site ponds. However, the species was not observed during the botanical surveys and is not expected to be present.
Coast checkerbloom	*Sidalcea oregana* ssp. *eximia*	1B.2	Coast checkerbloom occurs in wetlands and meadows within North Coast coniferous forest, yellow pine forest, and wetland-riparian communities. The species is reported between sea level and 4,000 feet in elevation. The flowering period is June to August.	Yes	No	No	Although potentially suitable habitat for coast checkerbloom occurs on the project site, the species was not observed during the botanical surveys and is not expected to be present.

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Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Coast fawn lily	*Erythronium revolutum*	2B.2	Coast fawn lily inhabits mesic sites in wetland habitats as well as broadleaved upland forests and North Coast coniferous forests. The species ranges from approximately 60 to 1400 meters above sea level. The species blooms between March and July.	No	No	No	No potentially suitable habitat for coast fawn lily occurs in the project site. Most occurrences are further inland and higher in elevation than the project site. The species was not observed during the botanical surveys and is not expected to be present.
Cylindrical trichodon	*Trichodon cylindricus*	2B.2	Cylindrical trichodon is a moss that inhabits broadleaved upland forests, meadows, seeps, and upper montane coniferous forests. The species ranges from 50 to 2050 meters above sea level.	No	No	No	No potentially suitable habitat for cylindrical trichodon occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Dark-eyed gilia	*Gilia millefoliata*	1B.2	Dark-eyed gilia, also known as manyleaf gilia, occurs in coastal habitat and coastal strand communities. The species is reported between sea level and 30 feet in elevation. The flowering period is March to July.	No	No	No	No potentially suitable habitat for dark-eyed gilia occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Humboldt Bay owl's-clover	*Castilleja ambigua* var. *humboldtiensis*	1B.2	Humboldt Bay owl's clover occurs in coastal salt marsh and wetland-riparian communities. The species is reported at sea level and the flowering period is between May to June.	No	No	No	No potentially suitable habitat for Humboldt Bay owl's-clover occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.

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June 2024

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Lassics lupine	*Lupinus constancei*	FE, SE, 1B.1	Lassics lupine is an herbaceous perennial plant of the legume family found only near the summits of the Lassics peaks, which have unique serpentine-influenced soils. The Lassics are located in Humboldt and Trinity Counties within the Six Rivers National Forest. There are two known populations of Lassics lupine occupying a combined area of approximately 4 acres. The smaller of the two populations is found on a southwest-facing slope of Red Lassic. The larger population is located on the adjoining peaks of Mt. Lassic (Signal Peak). The flowering period is typically July, but the species may bloom as early as late May.	No	No	No	The project site is well outside of the range for Lassics lupine. The species was not observed during the botanical survey and is not expected to be present.
Lyngbye's sedge	*Carex lyngbyei*	2B.2	Lyngbye's sedge occurs in wetlands and coastal salt marshes, in brackish habitats. The species is reported at sea level and the flowering period is between May and July.	No	No	No	No potentially suitable habitat for Lyngbye's sedge occurs on the project site. The species was not observed during the botanical surveys and is not expected to be present.
Northern clustered sedge	*Carex arcta*	2B.2	Northern clustered sedge, also known as bear sedge, occurs in wetlands, North Coast coniferous forest, and Douglas-fir forest. The species is reported between sea level and 4,600 feet in elevation. The flowering period is between June and August.	Yes	No	No	According to CNDDB records, northern clustered sedge was reported approximately 4 miles south of the project site in 1934. Although potentially suitable habitat for northern clustered sedge is present in the project site, the species was not observed during the botanical surveys and is not expected to be present.

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Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Oregon coast paintbrush	*Castilleja litoralis*	2B.2	Oregon coast paintbrush occurs in coastal bluff scrub, coastal dunes, and coastal scrub, and is generally found on dry sea bluffs. The species is reported between sea level and 850 feet in elevation. The flowering period is May to August.	No	No	No	No potentially suitable habitat for the Oregon coast paintbrush occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Pacific gilia	*Gilia capitata* ssp. *pacifica*	1B.2	Pacific gilia occurs in coastal scrub, chaparral, coastal prairie, and valley and foothill grassland. The species is reported between 15 and 5,500 feet in elevation. The flowering period is April to August.	No	No	No	No potentially suitable habitat for Pacific gilia occurs the project site. The species was not observed during the botanical surveys and is not expected to be present.
Pink sand-verbena	*Abronia umbellata* var. *breviflora*	1B.1	Pink sand-verbena occurs on coastal dunes and coastal strands. The species is usually the plant closest to the ocean. The species is reported between sea level and 330 feet in elevation. The flowering period is June to October.	No	No	No	No potentially suitable habitat for pink sand-verbena occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Seacoast ragwort	*Packera bolanderi* var. *bolanderi*	2B.2	Seacoast ragwort occurs in coastal scrub and North Coast coniferous forest, occasionally along roadsides. The species is reported between 100 feet and 2,135 feet in elevation. The flowering period is January to August.	Yes	No	No	Although potentially suitable habitat for seacoast ragwort occurs in the project site, the species was not observed during the botanical surveys and is not expected to be present.
Seaside pea	*Lathyrus japonicus*	2B.1	Seaside pea occurs on coastal beaches and dunes. The species is reported between sea level and 100 feet in elevation. The flowering period is June to August.	No	No	No	No potentially suitable habitat for seaside pea occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.

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June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Siskiyou checkerbloom	*Sidalcea malviflora* ssp. *patula*	1B.2	Siskiyou checkerbloom occurs in coastal bluff scrub, coastal prairie, and North Coast coniferous forest, often in roadcuts. The species is reported 50 feet and 3,000 feet in elevation. The flowering period is April to August.	Yes	No	No	According to CNNDB records, the closest reported occurrence of Siskiyou checkerbloom is approximately 4 miles south of the project site. Although potentially suitable habitat for Siskiyou checkerbloom occurs in the project site, the species was not observed during the botanical surveys and is not expected to be present.
Tracy's romanzoffia	*Romanzoffia tracyi*	2B.3	Tracy's romanzoffia occurs in rocky areas in coastal bluff scrub and coastal scrub. The species is reported between 50 feet and 100 feet in elevation. The flowering period is March to May.	No	No	No	No potentially suitable habitat for Tracy's romanzoffia occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Twisted horsehair lichen	*Sulcaria (Bryoria) spiralifera*	1B.2	Twisted horsehair lichen occurs in coastal dune forests and shublands. The species is reported between sea level and 300 feet in elevation.	No	No	No	No potentially suitable habitat for twisted horsehair lichen occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
Western lily	*Lilium occidentale*	FE, SE, 1B.1	Western lily occurs in bogs and fens; coastal bluff scrub, coastal prairie, and coastal shrub; freshwater marshes and swamps; and North Coast coniferous forest. The species is reported between near sea level and 600 feet in elevation. The flowering period is June to July.	Yes	No	No	Potentially suitable habitat for western lily occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.

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June 2024

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White-flowered rein orchid	*Piperia candida*	1B.2	White-flowered rein orchid occurs in broadleafed upland forest, lower montane coniferous forest, and North Coast coniferous forest. The species is reported between 100 feet and 4,300 feet in elevation. The flowering period is March to September.	Yes	No	No	Although potentially suitable habitat for the white-flowered rein orchid occurs in the project site, the species was not observed during the botanical surveys and is not expected to be present.
Wolf's evening-primrose	*Oenothera wolfii*	1B.1	Wolf's evening primrose typically inhabits dry, sandy areas in coastal bluff scrub, coastal dune, coastal prairie, and lower montane coniferous forest. The species is reported between sea level and 2,600 feet in elevation. The flowering period is May to October.	No	No	No	No potentially suitable habitat for Wolf's evening-primrose occurs in the project site. The species was not observed during the botanical surveys and is not expected to be present.
BIRDS							
Bank swallow	*Riparia riparia*	ST	Bank swallows are found in riparian and other lowland habitats in California during the spring-fall period. In the summer, bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	No	No	No	According to CNDDB records, the closest reported occurrence of bank swallow is approximately 0.6 miles northwest of the 4th Avenue well site. However, no vertical banks or cliffs are present in the project site; thus, the bank swallow would not nest on-site.
Fork-tailed storm petrel	*Hydrobates furcatus*	SSSC	Fork-tailed storm petrels are located along the coast and nests in burrows, natural cavities, or rock crevices on islands. Fork-tailed storm petrels are known to breed on six small islets off Del Norte and Humboldt counties.	No	No	No	According to CNDDB records, the closest reported occurrences of fork-tailed storm petrel are approximately 0.8 miles northwest of the project site. No suitable habitat for the fork-tailed storm petrel is present in the project site. The fork-tailed storm petrel would thus not be present in the project site.

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Marbled murrelet	*Brachyramphus marmoratus*	FT, SE	Marbled murrelets forage in coastal waters and nest in mature redwood or Douglas fir forests. Murrelet nests have been found in inland forests from marine waters up to a distance of 53 miles; however, in non-forests locations, such as portion of the Alaskan coast, nest may be placed on the ground or in rock cavities.	No	No	No	According to eBird records, marbled murrelets have been observed on several occasions to the west of the Westhaven area. However, the nearest known nest sites are over 12 miles from the project site. Marbled murrelets are not expected to nest in the project area.
Northern spotted owl	*Strix occidentalis caurina*	FT, ST, SSSC	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snags. The nesting season is March through June.	Yes	No	No	Potentially suitable foraging habitat for the northern spotted owl is present in the project area. However, the nearest known activity center for the northern spotted owl is ±1.8 miles northeast of the project area. Northern spotted owls are not expected to nest on the project site.
Tufted puffin	*Fratercula cirrhata*	SSSC	Tufted puffins occur sparsely along the California coast and nest in burrows on island cliffs or on grassy island slopes. Tufted puffins required islands free from human disturbance, with soil suitable for digging burrows, or with natural rock cavities.	No	No	No	No island cliffs, natural rock cavities, or potentially suitable nesting habitat is present in the project site or vicinity. Thus, the tufted puffin is not expected to nest in the project site.

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June 2024

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Western snowy plover	*Charadrius nivosus nivosus*	FT	Western snowy plovers inhabit sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, salt pond levees and gravel bars. Nests typically occur in flat, open areas with sandy or saline substrates. Vegetation and driftwood are usually sparse or absent.	No	No	No	No sandy coastal beaches or potentially suitable nesting habitat is present in the project site or vicinity. Thus, the western snowy plover is not expected to nest in the project site.
Yellow-billed cuckoo	*Coccyzus americanus*	FT	Yellow-billed cuckoos inhabit and nest in extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut slow-moving watercourses, backwaters, or seeps. Willows are almost always a dominant component of the vegetation. In the Sacramento Valley, yellow-billed cuckoo also utilizes adjacent orchards, especially of walnut, for nesting.	No	No	No	According to CNDDB records, yellow-billed cuckoo has been reported in two locations in Humboldt County. The closest reported occurrence is approximately 30 miles south of the project area. No suitable nesting habitat for the yellow-billed cuckoo is present in the project site. Thus, yellow-billed cuckoo would not nest in the project site.
AMPHIBIANS							
Foothill yellow-legged frog	*Rana boylii*	SSSC	Foothill yellow-legged frogs are typically found in shallow, partly shaded, perennial streams in areas with riffles and rocky substrates. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	No	No	No	According to CNDDB records, the closest reported occurrence of foothill yellow-legged frog is in the Little River, approximately 2 miles south of the project site in 2011. However, no suitable habitat for the foothill yellow-legged frog is present in the project site. The foothill yellow-legged frog would thus not be present in the project site.

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COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Northern red-legged frog	*Rana aurora*	SSSC	Northern red-legged frog breeding habitat typically consists of permanent or temporary water bordered by dense grassy or shrubby vegetation. Habitat used by post-metamorphic frogs consists of patches of dense grassy or shrubby vegetation (e.g., willow thickets and dense sedge swales) that maintain significant substrate moisture. In California, the dense undergrowth created by sword ferns and sedges along streamside flats in coastal redwood forest is often used by adults and sub-adults.	Yes	No	Yes	According to CNDDB records, multiple occurrences of northern red-legged frogs have been reported in the surrounding area. Two Creek and two ponds within the project site provides suitable habitat for northern red-legged frogs. A single northern red-legged frog was observed adjacent to one of the ponds during a field survey.
Pacific tailed frog	*Ascaphus truei*	SSSC	In California, the Pacific tailed frog occurs in permanent streams of low temperatures in conifer-dominated habitats, including coast redwood, Douglas-fir, Klamath mixed-conifer, and ponderosa pine habitats. This frog also occurs in montane hardwood-conifer habitats. Pacific tailed frogs occur more often in mature or late-successional stands than in younger stands. During the day, adults seek cover under submerged rocks and logs in the stream or occasionally under similar surface objects close to the stream.	Yes	No	Pot.	Marginally suitable habitat for the Pacific tailed frog is present in Two Creek within the project site. The Pacific tailed frog has a low potential to be present in the project site.

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June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Southern torrent salamander	*Rhyacotriton variegatus*	SSSC	In California, southern torrent salamanders generally associate with cold, perennial headwater streams or seeps in old-growth coniferous forests in the northern part of the Coast Ranges and in the western portion of the Klamath Mountains. Preferred streams are well shaded and often have a steep gradient. Larvae are often found in rocky portions of such streams, while adults are generally found among moss-covered rocks in or near the splash zone.	Yes	No	Pot.	Marginally suitable habitat for the southern torrent salamander is present in Two Creek within the project site. The southern torrent salamander has a low potential to be present in the project site.
FISH							
Coast cutthroat trout	*Oncorhynchus clarkii clarkii*	SSSC	Coast cutthroat trout prefer small, low gradient coastal streams and estuarine habitats. Optimal streams are cool (<18°C), well shaded, and with an abundance of in-stream cover. In northern California, coastal cutthroat trout begin the spawning migration up streams in August-October. Stream sections with small or moderate-sized gravel substrates are essential for spawning. Cutthroat trout usually choose the tails of pools in small streams to spawn in, preferring the headwater tributaries of larger streams. Adults that spend the winter in streams inhabit pools with fallen logs or undercut banks.	No	No	No	According to CDFW, coast cutthroat trout is believed to exist in Two Creek downstream of Highway 101; however, this is unconfirmed. The segment of Two Creek in the project site has been identified as a Class II watercourse by CDFW. Class II watercourses are not fish-bearing streams. Coast cutthroat trout are not expected to be present at the project site.

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California Coast chinook salmon	*Oncorhynchus tshawytscha*	FT	California coastal Chinook salmon migrate up and spawn in rivers/streams that flow directly into the ocean and in tributaries to rivers. Spawning and rearing streams typically are perennial, flow swiftly (riffles predominate over pools), and have clear water, cool water temperatures, undercut banks, riparian shading, and a diverse assemblage of invertebrates. Spawning migrations begin in late summer and early fall. Redds are constructed in clean gravel substrates. After hatching, alevins remain in gravel for approximately 12 weeks. Fry emerge from gravel in the spring and rear in freshwater streams for one year before migrating to the ocean. Adults spend between 1-7 years in the ocean before returning to spawn in freshwater streams.	No	No	No	The segment of Two Creek in the project site has been identified as a Class II watercourse by CDFW. Class II watercourses are not fish-bearing streams. Chinook salmon are not expected to be present at the project site.
Eulachon	*Thaleichthys pacificus*	FT	Eulachon are found in the Klamath River, Mad River, Redwood Creek, and in small numbers in the Smith River and Humboldt Bay tributaries. The species spawns in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	No	No	No	No suitable habitat for the eulachon is present in the project site. The eulachon would thus not be present in the project site.
Longfin smelt	*Spirinchus thaleichthys*	FP, ST	Longfin smelt use a variety of habitats from nearshore waters, to estuaries and lower portions of freshwater streams. Longfin smelt can tolerate a wide range of salinity from completely fresh to marine and depend on fresh and marine waters for spawning and rearing. Spawning occurs from November through May, with a peak from February through April. Eggs are thought to be released in freshwater over sandy, or gravel substrates, rocks and aquatic plants.	No	No	No	No suitable habitat for the longfin smelt is present in the project site. The longfin smelt would thus not be present in the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Northern California steelhead DPS	*Oncorhynchus mykiss*	FT	Northern California steelhead inhabit coastal streams from Redwood Creek in Humboldt County to the Gualala River in Mendocino County. The species is known to spawn and rear in tributaries of Humboldt Bay. Critical habitat was designated in 2005 and consists of river reaches between Redwood Creek south to Point Arena on the Mendocino coast.	No	No	No	The segment of Two Creek in the project site has been identified as a Class II watercourse by CDFW. Class II watercourses are not fish-bearing streams. No suitable habitat for the Northern California steelhead is present in Two Creek within the project site, and the species is not expected to be present.
Southern Oregon/Northern California Coho salmon ESU	*Oncorhynchus kisutch*	FT	In California, coho salmon are found in many of the short, coastal drainages from the Oregon border south to Monterey Bay. In the larger coastal drainages, coho salmon are found primarily in the lower sections. Spawning migrations begin after heavy, late autumn or winter rains encourage the returning adults to leave the ocean and move upstream. Spawning occurs in gravel/pebble substrate in cold, well-oxygenated water.	No	No	No	The segment of Two Creek in the project site has been identified as a Class II watercourse by CDFW. Class II watercourses are not fish-bearing streams. No suitable habitat for the Southern Oregon/Northern California coho salmon ESU is present in Two Creek in the project site, and the species is not expected to be present.
Green sturgeon – southern DPS	*Acipenser medirostris*	FT	The green sturgeon is an anadromous fish that originates from the Sacramento River basin and from coastal rivers south of the Eel River. In California, green sturgeon spawn primarily in the Klamath and Trinity rivers, but a small number is known to spawn in the Sacramento River. The species is highly migratory while in the ocean, and they spend most of their lives in coastal marine waters, coastal bays, and estuaries along the Pacific coast, including Humboldt Bay.	No	No	No	No suitable habitat for the green sturgeon is present in the project site. The green sturgeon would thus not be present in the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Tidewater goby	*Eucyclogobius newberryi*	FE	The tidewater goby is restricted to brackish waters of coastal lagoons along the California coast, as well as the lower reaches of sluggish streams that empty into these lagoons.	No	No	No	No suitable habitat for the tidewater goby is present in the project site. The tidewater goby would thus not be present in the project site.
INSECTS							
Monarch butterfly	*Danaus plexippus*	FC	Monarch butterflies are reliant on milkweed species for development and survival. Adults migrate from their overwintering sites on the California Coast, Baja California, and to some extent the central Mexico mountains in February and March and reach the northern limit of their North America range in California, Oregon, Washington, Idaho, and Nevada, in early to mid-June. Eggs are laid singly on milkweed plants within their breeding range. Once hatched, larva reach the adult stage in 20 to 35 days; adults live 2 to 5 weeks. Several generations can be produced within one season, with the last generation beginning migration to their overwintering range in August and September where they live between 6 and 9 months before migrating north. Although monarch butterflies are found inland of Humboldt County, the Humboldt County coast does not provide overwintering or breeding habitat.	No	No	No	No milkweeds were observed in the project area during the field evaluation and monarch butterflies are not expected to be present; therefore, there would be no direct or indirect impacts on pre-adult monarchs.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Western bumble bee	*Bombus occidentalis*	SCE	Western bumble bees are found in meadows and grasslands with abundant floral resources. In California, the species is largely confined to high-elevation sites in the Sierra Nevada and scattered sites on the coast. The flight period is generally from early February to late November. Nests are primarily in underground cavities on open west-southwest slopes bordered by trees, although a few aboveground nests have been reported. Very little is known about overwintering site; however, the species has been reported in overwintering sites that were two inches deep in a "steep west slope of the mound of earth."	No	No	No	In 1968, western bumble bee was reported to occur ~2.5 miles southwest of the project area. The project area does not include substantial floral resources that would support the western bumble bee, and it is not expected that the species would be present.
MAMMALS							
Blue whale	*Balaenoptera musculus*	FE	Blue whales inhabit both neritic and pelagic environments in the ocean.	No	No	No	No suitable habitat for the blue whale is present in the project site. The blue whale would thus not be present in the project site.
Fin whale	*Balaenoptera physalus*	FE	Fin whales inhabit both neritic and pelagic environments in the ocean.	No	No	No	No suitable habitat for the fin whale is present in the project site. The fin whale would thus not be present in the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Fisher – west coast DPS	*Pekania pennanti*	SSSC	Fishers inhabit mixed conifer forests dominated by Douglas-fir, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities. Den sites are most often found in areas with no human disturbance.	No	No	No	According to CNDDB records, the nearest known occurrence of the fisher is approximately 4.7 miles south of the project site. The project site is subject to routine, ongoing human activity. Fishers were not observed during the field surveys and are not expected to be present on the site.
Humpback whale	*Megaptera novaengliae*	FE	Humpback whales make long migrations seasonally, swimming to polar waters in high latitudes in the summer and tropical waters in the low latitudes in the winter. Humpback whales are generally considered to inhabit waters over continental shelves, along their edges and around some oceanic islands. They winter in warm waters at a small number of relatively specific locations. Summer ranges are often relatively close to shore, including major coastal embayments and channels.	No	No	No	No suitable habitat for the humpback is present in the project site. The humpback whale would thus not be present in the project site.
North Pacific right whale	*Eubalaena japonica*	FE	North Pacific right whales inhabit both neritic and pelagic environments in the ocean.	No	No	No	No suitable habitat for the North Pacific right whale is present in the project site. The North Pacific right whale would thus not be present in the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Pacific marten – Coastal DPS	*Martes caurina*	FT	Pacific martens inhabit a variety of old-growth, mixed evergreen coniferous forests with more than 40 percent canopy closure in the Coast Range, Klamath Mountains, Cascades, and Sierra Nevada. The species' elevation range extends from coastal coniferous forests to subalpine coniferous forests. Pacific martens den in cavities within trees and snags, and are very sensitive to human disturbance.	No	No	No	According to CNDDB records, the closest reported occurrence of the fisher is approximately six miles north of the project site. The project site is subject to routine, ongoing human activity. Pacific marten was not observed during the field surveys and is not expected to be present on the site.
Sei whale	*Balaenoptera borealis*	FE	Sei whales inhabit both neritic and pelagic environments in the ocean.	No	No	No	No suitable habitat for the sei whale is present in the project site. The sei whale would thus not be present in the project site.
Killer whale – Southern resident DPS	*Orcinus orca*	FE	Southern resident killer whales inhabit both neritic and pelagic environments in the ocean.	No	No	No	No suitable habitat for the killer whale is present in the project site. The killer whale would thus not be present in the project site.
Sperm whale	*Physeter macrocephalus*	FE	Sperm whales tend to inhabit oceanic waters with a depth of 600 meters or more, and are uncommon in waters less than 300 meters deep. Female sperm whales are generally found in deep waters (at least 1,000 m) of low latitudes (less than 40°, except in the North Pacific where they are found as high as 50° north latitude).	No	No	No	No suitable habitat for the sperm whale is present in the project site. The sperm whale would thus not be present in the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
White-footed vole	*Arborimus albipes*	SSSC	In California, the white-footed vole is found in Humboldt and Del Norte counties and is a resident of humid coastal redwood, Douglas-fir, and riparian forests. Found from sea level to 3,500 feet, the white-footed vole builds nests on the ground, under stumps, logs, or rocks. The white-footed vole prefers the vicinity of small, clear streams, with dense alder and other deciduous trees and shrubs.	Yes	No	No	According to CNDDB records, the white-footed vole was reported approximately 2.5 miles northwest of the project site in 1926. Although potentially suitable habitat for the white-footed vole is present in the area, the species was not observed during the wildlife surveys, and has not been recently recorded in the project area. Additionally, shrubby understory has been removed from the project site to minimize wildfire hazards. Therefore, the white-footed vole is not expected to be present.
REPTILES							
East Pacific green sea turtle	*Chelonia mydas*	FT	Green turtles primarily use three types of habitat: oceanic beaches (for nesting), convergence zones in the open ocean, and benthic feeding grounds in coastal areas.	No	No	No	No suitable habitat for the East Pacific green sea turtle is present in the project site. The East Pacific green sea turtle would thus not be present in the project site.
Leatherback sea turtle	*Dermochelys coriacea*	FE	Leatherback turtles inhabit three different ecosystems: the terrestrial zone, the oceanic zone, and the neritic zone. Female leatherback turtles nest on ocean beaches.	No	No	No	No suitable habitat for the leatherback sea turtle is present in the project site. The leatherback sea turtle would thus not be present in the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
June 2024

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Olive Ridley sea turtle	*Lepidochelys olivacea*	FT, FE	Olive ridley sea turtles inhabit three different ecosystems: the terrestrial zone, the oceanic zone, and the neritic zone. Females nest on ocean beaches.	No	No	No	No suitable habitat for the Olive Ridley sea turtle is present in the project site. The Olive Ridley sea turtle would thus not be present in the project site.
Western pond turtle	*Emys marmorata*	FPT, SSSC	The western pond turtle can be found from near sea level to 4,690 feet in elevation, and is uncommon to common in suitable aquatic habitats. The western pond turtle is associated with permanent or nearly permanent water in a wide variety of habitat types. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg laying.	No	No	No.	No suitable habitat for the western pond turtle is present in the project site. The species would thus not be present in the project site.

[1] Status Codes

Federal:

FE Federally Listed – Endangered
FT Federally Listed – Threatened
FC Federal Candidate Species
FP Federal Proposed Species
FD Federal Delisted

State:

SFP State Fully Protected
SR State Rare
SE State Listed – Endangered
ST State Listed – Threatened
SC State Candidate Species
SCE State Candidate Endangered
SCT State Candidate Threatened
SSSC State Species of Special Concern

Rare Plant Rank

1A Plants presumed extinct in California
1B Plants Rare, Threatened or Endangered in California and elsewhere
2A Presumed extirpated in California, but more common elsewhere
2B Rare or Endangered in California, but more common elsewhere

Rare Plant Threat Rank

0.1 Seriously threatened in California
0.2 Fairly threatened in California
0.3 Not very threatened in California

LIST OF VASCULAR PLANT SPECIES OBSERVED

Westhaven CSD Disinfection Byproduct Reduction Project
May 14 and 15, 2021; September 24 and 25, 2021

Adoxaceae	**Muskroot Family**
Sambucus racemosa	Red elderberry
Alliaceae	**Onion Family**
Allium triquertum	Three-cornered leek
Apiaceae	**Carrot Family**
Daucus carota	Queen Anne's lace
Oenanthe sarmentosa	Pacific oenanthe
Aquifoliaceae	**Holly Family**
Ilex aquifolium	English holly
Araceae	**Arum Family**
Lemna sp.	Duckweed
Lysichiton americanus	Yellow skunk-cabbage
Zantedeschia aethiopica	Calla-lily
Araliaceae	**Ginsing Family**
Hedera helix	English ivy
Asteraceae	**Sunflower Family**
Anaphalis margaritacea	Pearly everlasting
Bellis perrenis	English daisy
Cirsium sp.	Thistle
Crepis capillaris	Smooth hawks-beard
Hypochaeris radicata	Rough cat's ear
Leontodon saxatilis ssp. *saxatilis*	Hawkbit
Leucanthemum vulgare	Ox-eye daisy
Matricaria discoidea	Pineapple weed
Petasites frigidus var. *palmatus*	Coltsfoot
Pseudognaphalium luteoalbum	Weedy cudweed
Soliva sessilis	Lawn burweed
Sonchus oleraceus	Common sow thistle
Taraxacum officinale	Dandelion
Berberidaceae	**Barberry Family**
Berberis nervosa	Oregon-grape
Betulaceae	**Birch Family**
Alnus rubra	Red alder
Blechnaceae	**Deer Fern Family**
Struthiopteris spicant	Deer fern
Boraginaceae	**Borage Family**
Myosotis latifolia	Broad-leaved forget-me-not
Brassicaceae	**Mustard Family**
Cardamine oligosperma	Few-seeded bittercress

LIST OF VASCULAR PLANT SPECIES OBSERVED

Westhaven CSD Disinfection Byproduct Reduction Project

Caprifoliaceae	**Honeysuckle Family**
Lonicera involucrata var. *ledebourii*	Coast twinberry
Caryophyllaceae	**Pink Family**
Cerastium glomeratum	Mouse-eared chickweed
Lychnis coronaria	Rose campion
Sagina sp.	Pearlwort
Stellaria media	Common chickweed
Commelinaceae	**Spiderwort Family**
Tradescantia fluminensis	Small-leaf spiderwort
Cucurbitaceae	**Gourd Family**
Marah oregana	Coast man-root
Cupressaceae	**Cypress Family**
Sequoia sempervirens	Redwood
Cyperaceae	**Sedge Family**
Carex hendersonii	Henderson's sedge
Carex obnupta	Sough sedge
Cyperus eragrostis	Nutsedge
Schoenoplectus acutus	Common tule
Scirpus microcarpus	Small-fruited bulrush
Dennstaedtiaceae	**Bracken Family**
Pteridium aquilinum var. *pubescens*	Bracken fern
Drytopteridaceae	**Wood Fern Family**
Polystichum munitum	Western sword fern
Equisetaceae	**Horsetail Family**
Equisetum arvense	Common horsetail
Ericaceae	**Heath Family**
Gaultheria shallon	Salal
Rhododendron macrophyllum	Coast rhododendron
Vaccinium ovatum	Evergreen huckleberry
Vaccinium parviflorum	Red huckleberry
Fabaceae	**Legume Family**
Medicago lupulina	Black medick
Medicago polymorpha	California bur-clover
Trifolium dubium	Little hop clover
Trifolium pratense	Red clover
Trifolium repens	White clover
Vicia gigantea	Giant vetch
Vicia sativa subsp. *nigra*	Garden vetch
Geraniaceae	**Geranium Family**
Geranium robertianum	Robert's geranium

LIST OF VASCULAR PLANT SPECIES OBSERVED

Westhaven CSD Disinfection Byproduct Reduction Project

Hydrangeaceae	**Mock Orange Family**
Whipplea modesta	Modesty
Hypericaceae	**St. John's-wort Family**
Hypericum anagalloides	Tinker's penny
Iridaceae	**Iris Family**
Crocosmia x crocosmiflora	Coppertips
Iris douglasiana	Douglas' iris
Juncaceae	**Rush Family**
Juncus sp.	Rush
Juncus effusus	Soft rush
Luzula comosa	Pacific wood rush
Luzula parviflora	Small-flowered wood rush
Lamiaceae	**Mint Family**
Lamiastrum galeobdolon	Yellow archangel
Melissa officinalis	Bee-balm
Mentha pulegium	Pennyroyal
Prunella vulgaris var. *vulgaris*	Common self-heal
Stachys mexicana	Mexican hedge-nettle
Liliaceae	**Lily Family**
Prosartes hookeri	Drops of gold
Lythraceae	**Loosestrife Family**
Lythrum hyssopifolia	Hyssop loosestrife
Melanthiaceae	**False-Hellebore Family**
Trillium ovatum	Western wakerobin
Montiaceae	**Miner's Lettuce Family**
Claytonia sibirica	Candy flower
Moraceae	**Mulberry Family**
Ficus carica	Common fig
Myrsinaceae	**Myrsine Family**
Lysimachia arvensis	Scarlet pimpernel
Lysimachia latifolia	Pacific starflower
Myrtaceae	**Myrtle Family**
Morella californica	California wax-myrtle
Nymphaceae	**Waterlily Family**
Nuphar polysepala	Yellow pond-lily

LIST OF VASCULAR PLANT SPECIES OBSERVED

Westhaven CSD Disinfection Byproduct Reduction Project

Onagraceae	**Evening-Primrose Family**
Chamerion angustifolium	Fireweed
Epilobium ciliatum subsp. *ciliatum*	Fringed willowherb
Fuchsia magellanica	Hardy fuchsia
Oxalidaceae	**Oxalis Family**
Oxalis sp.	Wood-sorrel
Oxalis corniculata	Creeping wood-sorrel
Oxalis oregana	Redwood sorrel
Papaveraceae	**Poppy Family**
Dicentra formosa	Pacific bleeding heart
Pinaceae	**Pine Family**
Abies grandis	Grand fir
Picea sitchensis	Sitka spruce
Plantaginaceae	**Plantain Family**
Callitriche heterophylla	Variable-leaved water-starwort
Callitriche stagnalis	Pond water-starwort
Plantago lanceolata	English plantain
Plantago major	Broadleaf plantain
Veronica americana	American brooklime
Veronica serpyllifolia	Sprawling speedwell
Poaceae	**Grass Family**
Agrostis capillaris	Colonial bentgrass
Agrostis exarata	Spike bentgrass
Anthoxanthum odoratum	Large sweet vernal grass
Bromus sitchensis var. *carinatus*	California brome
Cortaderia jubata	Pampas grass
Dactylis glomerata	Orchard grass
Festuca arundinacea	Tall fescue
Festuca perennis	Annual ryegrass
Holcus lanatus	Common velvet grass
Phalaris arundinacea	Reed canary grass
Poa annua	Annual bluegrass
Polypogon maritimus	Mediterranean beardgrass
Polygonaceae	**Buckwheat Family**
Polygonum aviculare	Common knotweed
Rumex conglomeratus	Green dock
Rumex obtusifolius	Bitter dock
Rumex pulcher	Fiddle dock
Polypodiaceae	**Fern Family**
Polypodium scouleri	Leather-leaf fern
Ranunculaceae	**Buttercup Family**
Ranunculus repens	Creeping buttercup

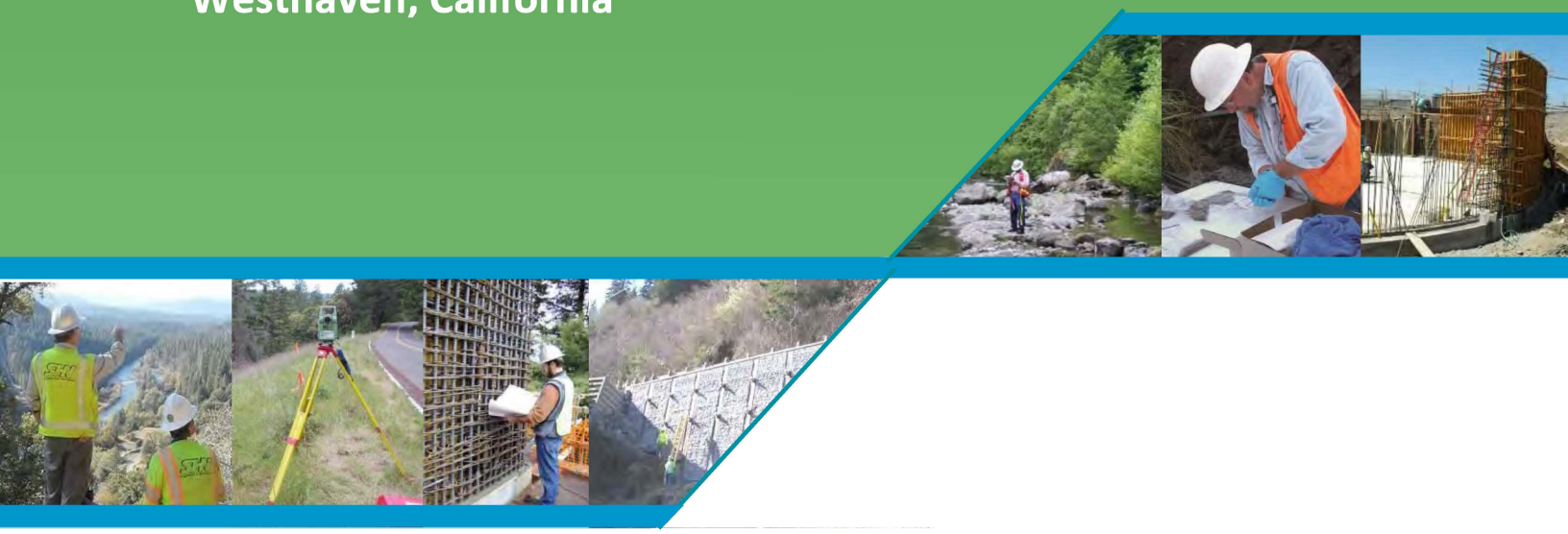
LIST OF VASCULAR PLANT SPECIES OBSERVED

Westhaven CSD Disinfection Byproduct Reduction Project

Rhamnaceae	**Buckthorn Family**
Frangula purshiana ssp. *purshiana*	Cascara
Rosaceae	**Rose Family**
Aphanes occidentalis	Western ladies-mantle
Cotoneaster franchetii	Cotoneaster
Fragaria chiloensis	Beach strawberry
Geum macrophyllum	Large-leaved avens
Malus pumila	Apple
Prunus sp.	Cherry
Rosa sp.	Wild rose
Rubus leucodermis	Black-capped raspberry
Rubus parviflorus	Thimbleberry
Rubus spectabilis	Salmonberry
Rubus ursinus	California blackberry
Rubiaceae	**Madder Family**
Galium sp.	Bedstraw
Galium triflorum	Sweet bedstraw
Ruscaceae	**Butcher's Broom Family**
Maianthemum dilatatum	Pacific may-lily
Maianthemum racemosum	Western false Solomon's-seal
Salicaceae	**Willow Family**
Salix hookeriana	Coastal willow
Typhaceae	**Cattail Family**
Typha sp.	Cattail
Urticaceae	**Nettle Family**
Soleirolia solerolii	Baby's tears
Violaceae	**Violet Family**
Viola adunca ssp. *adunca*	Western dog violet
Viola sempervirens	Redwood violet
Woodsiaceae	**Cliff Family**
Cystopteris fragilis	Fragile fern
Athyrium filix-femina var. *cyclosomum*	Western lady fern

Biological and Wetland Assessment

Assessor's Parcel Numbers:
514-133-001 514-132-007
514-132-008 513-181-014
Westhaven, California



Prepared for:
Westhaven Community Services District

August 2019
018193.100

Reference: 018193.100

Biological and Wetland Assessment

Assessor's Parcel Numbers:

514-133-001 514-132-007

514-132-008 513-181-014

Westhaven, California

Prepared for:
Westhaven Community Services District

Prepared by:

1062 G St., Suite I
Arcata, CA 95521
707-822-5785

August 2019

QA/QC:SEC

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Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

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showing signs of rusting through and imminent failure. CDFW recommends these crossing be pulled and reconstructed to pass the 100-year flow and associated debris.

CDFW Point 5 (Road Point): Two existing Class II 36-inch culvert crossings on major Humboldt County roads, not appurtenant to the proposed exemption. WCSD requested CDFW evaluate the crossing due to concerns with public access and right of way if the crossing was to fail. The upstream (Second Avenue) crossing outlet was observed to be completely buried in fill. The drop inlet of the downstream (Westhaven Drive) crossing is heavily encroached upon by sediment and vegetation despite the presence of temporary trash rack. This crossing complex shows signs of imminent failure and should be prioritized for remediation as soon as possible.

Please direct questions or correspondence regarding this letter to Senior Environmental Scientist (Specialist) Nicholas Simpson at (707) 445-6512 or nicholas.simpson@wildlife.ca.gov.

Sincerely,



Rich Klug
Senior Environmental Scientist (Supervisor)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To: 06/18/2024 22:48:46 UTC
Project Code: 2024-0105958
Project Name: Westhaven Community Services District Disinfection Byproduct Reduction Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

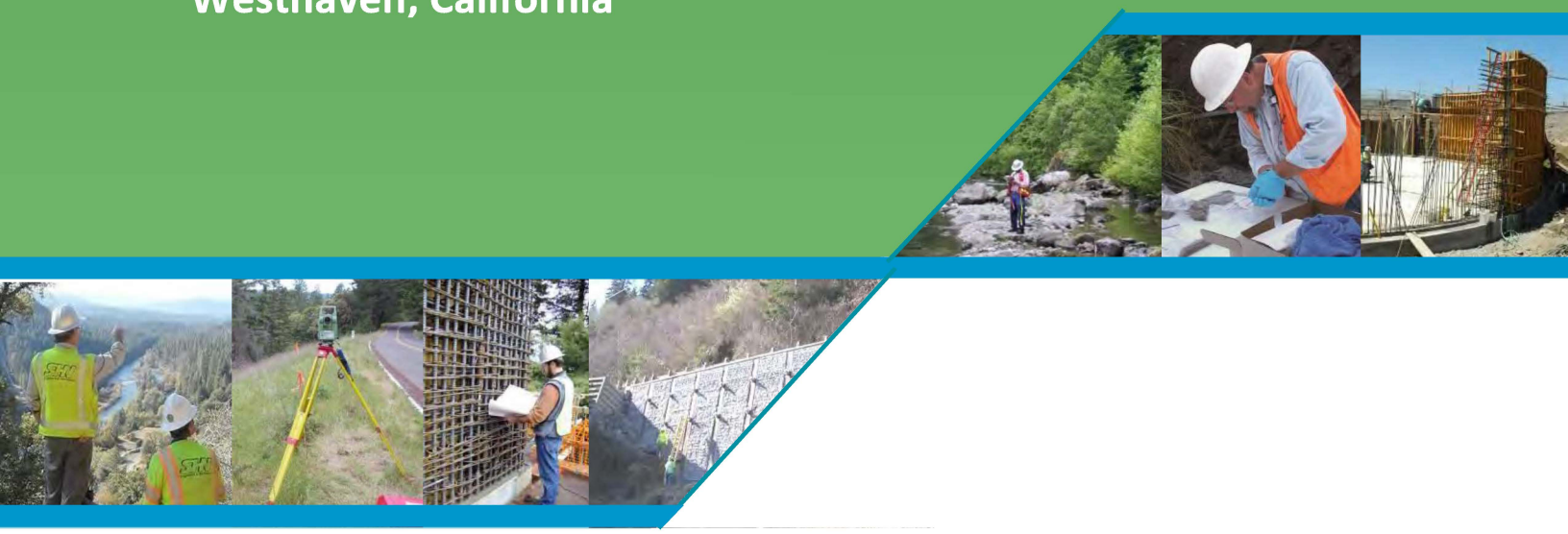
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

Biological and Wetland Assessment

Assessor's Parcel Numbers:
514-133-001 514-132-007
514-132-008 513-181-014
Westhaven, California



Prepared for:
Westhaven Community Services District

August 2019
018193.100

Reference: 018193.100

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Westhaven, California

Prepared for:
Westhaven Community Services District

Prepared by:

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707-822-5785

August 2019

QA/QC:SEC

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showing signs of rusting through and imminent failure. CDFW recommends these crossing be pulled and reconstructed to pass the 100-year flow and associated debris.

CDFW Point 5 (Road Point): Two existing Class II 36-inch culvert crossings on major Humboldt County roads, not appurtenant to the proposed exemption. WCSD requested CDFW evaluate the crossing due to concerns with public access and right of way if the crossing was to fail. The upstream (Second Avenue) crossing outlet was observed to be completely buried in fill. The drop inlet of the downstream (Westhaven Drive) crossing is heavily encroached upon by sediment and vegetation despite the presence of temporary trash rack. This crossing complex shows signs of imminent failure and should be prioritized for remediation as soon as possible.

Please direct questions or correspondence regarding this letter to Senior Environmental Scientist (Specialist) Nicholas Simpson at (707) 445-6512 or nicholas.simpson@wildlife.ca.gov.

Sincerely,



Rich Klug
Senior Environmental Scientist (Supervisor)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
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In Reply Refer To: 06/18/2024 22:48:46 UTC
Project Code: 2024-0105958
Project Name: Westhaven Community Services District Disinfection Byproduct Reduction Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)