

Natural Resources Assessment

**Emerald Family Farms, LLC
Willow Creek, California**

Prepared for:

Emerald Family Farms, LLC



Engineers & Geologists

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December 2016
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Reference: 016225.003

December 12, 2016

Emerald Family Farms, LLC
P.O. Box 1643
Willow Creek, CA 95573

Subject: Natural Resources Assessment, Emerald Family Farms Willow Creek

Dear Emerald Family Farms, LLC:

SHN Engineers & Geologists has prepared this Natural Resources Assessment for Emerald Family Farms, LLC in Willow Creek, California. This report addresses biological resources within a proposed development area.

No special status species were documented within the study area. Future development within the study area will likely not result in substantial impacts to biological resources after implementing recommendations within this report.

Please call me at 707-441-8855 if you have any comments or concerns.

Sincerely,

SHN Engineers & Geologists

Greg O'Connell
Biologist/Botanist

GDO: CG

Enclosure: Natural Resources Assessment

Natural Resources Assessment

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Prepared for:

Emerald Family Farms, LLC

Prepared by:



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QA/QC: GCR____

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Abbreviations and Acronyms

°F	degrees Fahrenheit	G4/S4	apparently secure species heritage rank
ACOE	Army Corps of Engineers	G5/S5	species heritage rank
BIOS	Biogeographical Information and Observation System	HCP	habitat conservation plan
C	candidate species status	IPaC	Information for Planning and Conservation
CCH	Consortium of California Herbaria	MBTA	Migratory Bird Treaty Act
CCR	California Code of Regulations	NCCP	Natural Community Conservation Planning Act
CDFW	California Department of Fish and Wildlife	NEPA	National Environmental Policy Act
CEQA	California Environmental Quality Act	NMFS	National Marine Fisheries Service
CESA	California Endangered Species Act	NPPA	Native Plant Protection Act
CFGC	California Fish and Game Code	NRA	natural resource assessment
CFR	Code of Federal Regulations	NWI	National Wetland Inventory
CNDDDB	California Natural Diversity Database	PT	proposed threatened species status
CNPS	California Native Plant Society	RWQCB	Regional Water Quality Control Boards
CRPR	California Rare Plant Rank	SAA	Streambed Alteration Agreement
CT	candidate threatened species status	SHN	SHN Engineers & Geologists
CWA	Clean Water Act	SMAO	Streamside Management Area Ordinance
D	delisted species status	SSC	species of special concern
DPS	Northern California distinct population segment/species status	SWRCB	State Water Resources Control Board
E	endangered species status	T	threatened species status
EFF	Emerald Family Farms, LLC	U.S.	United States
EPA	Environmental Protection Agency	U.S.C.	U.S. Code
ESU	evolutionarily significant unit/species status	U.S.D.A	United States Department of Agriculture
FESA	Federal Endangered Species Act	USFWS	United States Fish and Wildlife Service
FP	fully protected species status	U.S.G.S	United States Geological Survey
G1/S1	critically imperiled species heritage rank	VegCAMP	Vegetation Classification and Mapping Program
G2/S2	imperiled species heritage rank	WDR	Waste Discharge Requirement
G3/S3	vulnerable species heritage rank	WL	watch list species status

1.0 Introduction

SHN Engineers & Geologists has conducted site investigations, literature reviews, and an assessment to determine biological resources present in relation to the Emerald Family Farms, LLC (EFF) Property in Willow Creek.

EFF is considering site development for agriculture-related activities on a former mill site. Project details are still in the planning phase and this Natural Resources Assessment (NRA) will serve as a tool to identify potential sensitive natural resources that may occur on site.

1.1 Project Location

The project is located in Willow Creek, California, an unincorporated town of Humboldt County (Figure 1; United States Geological Survey [USGS] Willow Creek and Salyer 7.5-minute Quadrangles, Township 7 North, Range 5 East, Sections 28 and 33, Humboldt Meridian). The project is located in a 19-acre portion of a 42.2-acre parcel (Assessor's parcel number [APN] 522-201-001) with a central location latitude and longitude of 40.9429° and -123.6270°, respectively. The site is approximately a quarter mile northeast from central downtown Willow Creek at 131 Flower-McNeil Road, off of Country Club Road.

1.2 Site Description

The study area is situated at the approximate 530-foot elevation above mean sea level on a large, flat terrace. A steep uphill slope occurs outside the southern boundary of the study area and the Trinity River riparian embankment outside the northern boundary (Figure 2). The study area has functioned as an industrial facility since the late 1940's. Its main use was as a lumber mill with a mill pond constructed on the western portion of the study area (Figure 1). Portions of the pond have been filled, leaving a network of depressional features formed by man-made berms (see Figure 2 and Appendix B, Photo B4). The majority of the project site has experienced extensive fill and grading. Reviewing the history of the site on Google Earth shows that the majority of the grading activity pre-dates their oldest aerial photo of 1988. There are several existing outbuildings within the study area. Additionally, the eastern portion of the study area has been used as a wildlands firefighter staging area and base camp during emergency fire activities.

2.0 Methodology

2.1 Literature Review

This Natural Resources Assessment includes a review of pertinent literature on habitat characteristics of the site, and a review of information related to special status species of plants and animals that could potentially use the described habitats.

The findings for this report are a result of several sources, including a review of existing literature regarding sensitive resources that have the potential to occur within the site. Resources for this determination included:

- California Natural Diversity Database (CNDDDB) query for the Willow Creek, Salyer, and their surrounding U.S.G.S 7.5 minute topographic quadrangles (Denny, Grouse Mtn., Hennessy Peak, Hoopa, Hupa Mountain, Ironside Mtn., Lord-Ellis Summit, Tish Tang Point, and Trinity Mtn.) (California Department of Fish and Wildlife [CDFW], 2016a)
- Biogeographical Information and Observation System (BIOS; CDFW, 2016b)
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2016) query for a list of all plant species reported for the Willow Creek, Salyer, and their surrounding U.S.G.S. 7.5 minute topographic quadrangles
- Special Vascular Plants, Bryophytes, and Lichens of California List (CDFW, 2016c)
- Special Animals of California List (CDFW, 2016d)
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) was queried for threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project (USFWS, 2016a)

From the database queries, a list of potential target special status species for the study area was compiled. Tables A-1 and A-2 in Appendix A include species reported by the CNDDDB and USFWS, and species listed in the CNPS inventory of rare plants.

Additionally, USFWS's Critical Habitat Portal query for habitat designated as critical for species listed under the Federal Endangered Species Act (FESA) reported that the closest designated critical habitat is for the northern spotted owl (*Strix occidentalis caurina*); approximately 1.2 miles to the west, 1.3 miles to the south and 1.5 miles to the northeast for the study area. The next closest critical habitat is for the marbled murrelet (*Brachyramphus marmoratus*); 3.5 miles to the southwest of the study area.

The several historical occurrences of special status species are documented in CNDDDB within three miles of the study area, including the silver-haired bat (*Lasionycteris noctivagans*), Wolf's evening-primrose (*Oenothera wolffi*), fisher - West Coast DPS (*Pekania pennant*), osprey (*Pandion haliaetus*), great blue heron (*Ardea herodias*), wayside aster (*Eucephalus vialis*), Humboldt marten (*Martes caurina humboldtensis*), Del Norte salamander (*Plethodon elongates*), southern torrent salamander (*Rhyacotriton variegatus*), and pacific tailed frog (*Ascaphus truei*).

Prior to the field investigation, a review of all plant species reported from the project area was performed by querying the "Consortium of California Herbaria" database records and "Calflora" observations.

2.2 Coordination with Permitting and Regulatory Agencies

SHN and Streamline Planning Consultants conducted a site visit with Jen Olson of CDFW, on June 30, 2016. SHN staff subsequently coordinated with CDFW staff on wetland and riparian topics.

2.3 Field Observations and Studies

In addition to the June 30, 2016 site visit with CDFW staff, field work occurred on August 26, September 1, and November 3, 2016 to document habitats and species present. Photographs, field notes, and a botanical species list were compiled. Additionally, three wetland areas were delineated within the study area (Figure 2) (SHN, 2016).

The 2016 site visits included seasonally appropriate surveys for botanical species reported from the region that had a moderate or high potential for occurrence (Table A-1, in Appendix A). A list of all botanical species encountered was compiled (Table A-3, in Appendix A). Plants observed during 2016 were identified to the lowest taxonomic level possible to distinguish special-status species from others. Nomenclature for special status animals conforms to California Department of Fish and Wildlife (CDFW, 2016d). Plant community names conform to *A Manual of California Vegetation, Second Edition* (Sawyer et al, 2009) and the VegCAMP (Vegetation Classification and Mapping Program) Natural Communities List (CDFW, 2010). Botanical nomenclature of species in this Assessment follows the *Jepson Manual* (Baldwin et al., 2012) and subsequent online revisions.

Site photographs from the site visits are included in Appendix B.

3.0 Environmental Setting

3.1 Vegetation and Natural Communities

The study area is a flat graded surface with considerable abundance of non-native species; predominantly Himalayan blackberry (*Rubus armeniacus*), wild oat (*Avena sativa*), and yellow starthistle (*Centaurea solstitialis*). The old lumber mill logging pond has been drained, but small depressional areas remain. These swales are predominantly vegetated with Himalayan blackberry, but the deeper swales also contain the native arroyo willow (*Salix lasiolepis*), pacific willow (*Salix lasiandra* var. *lasiandra*), and black cottonwood (*Populus trichocarpa*). A complete list of plants observed within the study area is compiled in Table A-3 in Appendix A.

Natural communities encountered within the study area include scattered patches of coyote brush scrub (*Baccharis pilularis* Shrubland Alliance) and broom patches (*Cytisus scoparius* and Others Shrubland Semi-Natural Alliance). Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance) occur in three isolated depressional wetlands in the western portion of the study area (SHN, 2016). The region surrounding the study area is composed of the *Pseudotsuga menziesii* – *Notholithocarpus densiflorus* Forest Alliance (Douglas fir - tanoak forest).

3.2 Geologic and Soil Composition

The site is set in the coastal mountains approximately 26 miles east of the Pacific Ocean coast. It is located on a fluvial floodplain terrace above the Trinity River, composed of the Galice formation sediments, which consists of Jurassic-aged marine sediments. The underlying soils in the project site have a USDA classification of Typic Xerofluvents-Riverwash association with 2 to 10 percent slopes in 90% of the project area, and 10% Skalan-Goldridge-Clallam families association with 20 to 70 percent slopes (USDA, 2016).

The closest area of mapped ultramafic parent material is approximately two miles west of the project area in the Brannan Mountain vicinity (USGS, 2007)). The Brannan Mountain ultramafic complex was formed in the Ordovician to Early Jurassic period and is characterized as a serpentinite-matrix melange containing blocks and slabs of ultramafic and other rocks. Ultramafic at Brannan Mountain are composed of mostly serpentine with minor components of peridotite, gabbro, and diabase. Ultramafic rocks and /or soils were not encountered within the study area.

3.4 Wildlife Habitats

Common wildlife species expected on the site are those typically associated with deciduous riparian forests, urban landscapes, and coniferous forests of northwestern California. Wildlife species observed at the site included common raven (*Corvus corax*), American robin (*Turdus migratorius*), song sparrow (*Melospiza melodia*), turkey vulture (*Cathartes aura*), Allen's hummingbird (*Selasphorus sasin*), California quail (*Callipepla californica*), northern flicker (*Colaptes auratus*), and the Oregon alligator lizard (*Elgaria multicarinata scincicauda*). Other wildlife species are likely to inhabit the surrounding area and it is expected that there are many other bird, mammal, and amphibian species that might use the project site, if only transitionally. However, human activities within the project site may limit the abundance of a variety of birds and animals.

3.5 Wildlife Movement Corridors

Wildlife movement includes migration (i.e., usually one-way per season), inter-population movement (i.e., long-term genetic flow) and small travel pathways (i.e., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as, foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles from primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations constituting a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors, and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Low-frequency genetic flow may potentially lead to complete isolation and, if pressures are strong, potential extinction (McCullough, 1996 and Whitaker, 1998).

The study area is a historic industrial facility that occurs adjacent to riverine and riparian areas. It is likely that wildlife use portions of study area as movement corridors. Most of the wildlife movement corridors are expected to be concentrated on nearby perennial drainages.

3.6 Offsite Conditions

The habitats adjacent to the project areas are high quality mixed coniferous forests to the south and high quality riparian to the north. Existing habitat quality within the study area is substantially lower than the adjacent areas due to current and historical land uses and disturbances.

4.0 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 and state laws.

4.1 Federal Laws

4.1.1 Clean Water Act Sections 404 and 401

Under Section 404 (33 U.S. Code (U.S.C.) 1344) of the Clean Water Act (CWA), as amended, the Army Corps of Engineers (ACOE) retains primary responsibility for permits to discharge dredged or fill material into waters of the U.S. All discharges of dredged or fill material into jurisdictional waters of the U.S. that result in permanent or temporary losses of waters of the U.S. are regulated by the ACOE. A permit from the ACOE must be obtained before placing fill or grading in wetlands or other waters of the U.S., unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The ACOE defines wetlands as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (ACOE Environmental Laboratory, 1987). In other words, the ACOE 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. They include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters; and certain wetlands. Following recent court cases, the U.S. Environmental Protection Agency (EPA) and ACOE published a memorandum entitled Clean Water Act Jurisdiction (U.S. EPA/U.S. ACOE, 2008) to guide the determination of jurisdiction over waters of the U.S., 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 ACOE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the 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 ACOE.

Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification 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, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). The project is within the jurisdiction of the North Coast RWQCB.

4.1.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995) 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 occur to waters of the U.S. from a proposed project, then a permit from ACOE under CWA Section 404 is required for the construction of the proposed project. ACOE 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.

4.1.3 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 U.S.C. 1531, 50 CFR 17.3). 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 project 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 U.S.C. 1536[3], [4]). Project-related impacts to species on the FESA endangered or threatened list would be considered significant and would require mitigation.

4.1.4 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). 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 U.S.C. 703). The migratory bird nesting season is generally considered to be between March 15 and August 1 within the study region.

4.2 State Laws

4.2.1 Porter-Cologne Water Quality Act

The state and RWQCB also maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Act. Waters of the State are defined by the Porter-Cologne 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. These water bodies might not be regulated by other programs, such as Section 404 of the CWA. Waters of the State 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 an ACOE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State 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 of harmful substances to waters of the State, the RWQCBs have the option to regulate such activities under their state authority in the form of Waste Discharge Requirements (WDRs) or certification of WDRs.

4.2.2 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 [CFGF] 2070). Section 2080 of the CFGF prohibits “Take” of any species that the commission determines to be an endangered or threatened species. “Take” is defined in Section 86 of the CFGF 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 project 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.

4.2.3 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 California Native Plant Society (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, 2015). 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 CFGF, 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 CFGF. 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, 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 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 the CDFW (i.e., the CNDDDB 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).

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."

4.2.4 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. 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 require 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).

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.

4.2.5 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.

4.2.6 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, amphibian 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 also is 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 A-2 in Appendix A includes potentially occurring federal and state listed species and SSC animals that may occur in the project area.

4.2.7 Native Plant Protection Act of 1973

The Native Plant Protection Act (NPPA) of 1973 (Sec.1900-1913 of the CFGC) 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, 2015).

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

4.2.8 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.

No regionally occurring natural community or associated plan is listed by the state for the project area.

4.3 Other Statutes, Codes, and Policies Affording Limited Species Protection – Humboldt County Streamside Management Area Ordinance

Riparian and wetland habitats receive protection under Humboldt County's Streamside Management Area Ordinance (SMAO); as defined in Title 3, Section 314-61.1 of the Humboldt County Code. Development and work within SMAs requires a special permit from the County, if those activities are not exempt.

The purpose of the SMAO is to provide oversight in the use and development of land located within wet areas such as rivers, creeks, springs, and other wetland types. This includes natural resource areas along both sides of streams containing the channel and adjacent land. In areas outside of urban development and expansion areas, SMAs are identified as a 100-foot setback from the stream transition line of perennial streams and 50-foot setback for streams with seasonal intermittent flow. In areas inside of urban development and expansion areas, SMAs are identified as a 50-foot setback from perennial streams and 25-foot setback for streams with seasonal intermittent flow. The stream transition line is defined in the Humboldt County General Plan as, "that line closest to a stream where riparian vegetation is permanently established," which is typically interpreted in riparian areas as the closest rooted tree to the water course.

Routine maintenance activities are permitted under the SMAO, if trees that are more than 12 inches in diameter are not cut, and that no more than 6,000 cumulative square feet of woody vegetation is removed. Additionally, activities are not considered routine maintenance if they could result in a significant environmental impact. Significance with regard to environmental impact can be difficult to qualify on a case-by-case level. However, the California Department of Fish and Wildlife generally considers the removal of riparian woody vegetation greater than 4 inches in diameter as an activity that requires compensatory mitigation. Mitigation measures for projects

within SMAs can include retaining snags and trees that support nesting birds, replanting of disturbed areas equal to the development area, and other potential site-specific habitat improvements.

5.0 Special Status Biological Resources

An evaluation was conducted for the potential presence or absence of habitat for special status plant and animal species. CNDDDB RareFind (CDFW, 2016a), BIOS (CDFW, 2016b), and CNPS (CNPS, 2016) searches were completed for the Willow Creek and Salyer 7.5-minute USGS quadrangles and all adjacent quadrangles. The aforementioned databases were queried for historical and existing occurrences of state and federally listed threatened, endangered, and candidate plant and animal species; species proposed for listing; and all plant species listed by the CNPS (On-line 2016 inventory). In addition, a list of all federally listed species that are known to occur or may occur in the vicinity was obtained from the USFWS' Information for Planning and Conservation database (USFWS, 2016a).

Table A-1 in Appendix A includes all plant species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Table A-2 includes all animal species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field surveys.

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

- **None.** Species listed as having “none” are those species for which:
 - there is no suitable habitat present in the study area (that is, habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, etc.]).
- **Low.** Species listed as having a “low” potential to occur in the study area are those species for which:
 - there is no known record of occurrence in the vicinity, and
 - there is marginal or very limited suitable habitat present within the study area.
- **Moderate.** Species listed as having a “moderate” potential to occur in the study area are those species for which:
 - there are known records of occurrence in the vicinity, and
 - there is suitable habitat present in the study area.
- **High.** Species listed as having a “high” potential to occur on the study area are those species for which:
 - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity), and
 - there is highly suitable habitat present in the study area.

- **Present.** Species listed as “present” in the study area are those species for which:
 - o the species was observed in the study area.

5.1 Special Status Plant Species

Based on a review for special status plant species, 79 special status plant species have been reported from the region consisting of the site’s two quadrangles and their surrounding quadrangles. Of the special status plant species reported in the region, 77 plant species are considered to have a low potential to occur at the project site and two species have a moderate potential (Table A-1 in Appendix A). Species with a moderate potential for occurrence within the study area are described below:

Gilia capitata ssp. *pacifica* is an annual herb in the Polemoniaceae family. Its elevation range is reported from 16 to 4,364 feet above sea level. Within its range state-wide, its blooming period is reported as April through August. This species is reported from coastal bluff scrub, chaparral openings, coastal prairie, in addition to valley and foothill grasslands. Although habitat may exist locally for this species, it was not detected within the study area.

Montia howellii is an annual herb in the Montiaceae family. Its elevation range is reported from 0 to 2,740 feet above sea level. Within its range state-wide, its blooming period is reported as March through May. This species is reported from meadows and seeps, north coast coniferous forest, vernal pools, vernal mesic sites, and sometimes roadsides. *Montia howellii* reference sites were visited the last week in October, 2016 in Arcata (CNDDDB occurrence #104) and the first week in November, 2016 at Burnt Ranch (CNDDDB occurrence #18) to confirm that plants had germinated and were detectable during the November 3, 2016 site visit. Plants were detectable at both of these locations (Appendix B; Photos 5 and 6). Although habitat may exist locally for this species, it was not detected within the study area.

Seasonally appropriate surveys of the study area did not locate sensitive botanical species with potential habitat at the project site. 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 2016 field investigations, and the findings presented here are based on our best professional judgment.

5.2 Special Status Animal Species

Based on a review of special status animal species, 46 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, 30 animal species are considered to have a no or low potential to occur at the project site and 16 species have a moderate to high potential (Table A-2 in Appendix A). Species with a moderate or high potential for occurrence within the study area are described below.

5.2.1 Birds

The Cooper's hawk (*Accipiter cooperii*) builds stick platform nests in crotches of riparian deciduous trees and second-growth conifers near streams. Nest is lined with bark. Although habitat may

exist locally for this species, it was not detected within the study area. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The northern goshawk (*Accipiter gentilis*) nest in predominantly interior mountains in mature and old-growth forest stands with dense canopy cover and open understories. It forages in mature forests as well as meadow edges and open brush. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The golden eagle (*Aquila chrysaetos*) needs open terrain for hunting. It builds large platform nests in rugged, open habitats such as cliffs and large trees in open areas. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The great blue heron (*Ardea herodias*) utilizes shallow estuaries and emergent wetlands. It's less common along riverine, rocky marine shores, and pastures but will search for prey in shallow water and open fields. It nests in colonies in tops of secluded large snags and live trees. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The American peregrine falcon (*Falco peregrinus anatum*) occupies a broad range of ecological communities. It perches on cliffs, power poles, and other tall structures. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The bald eagle (*Haliaeetus leucocephalus*) occurs near large bodies of water, or free flowing rivers with abundant fish with adjacent snags or other perches. It nests in large, old-growth, or dominant live tree with open branchwork. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The yellow-breasted chat (*Icteria virens*) occurs in thickets and other dense vegetation such as bramble bushes, clearcuts, powerline corridors, and shrubs along streams. Project-related activities are not anticipated to have a significant impact on this species or its habitat. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the

reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The osprey (*Pandion haliaetus*) occupies areas adjacent to rivers, lakes, and the coast where large numbers of fish are present. It may be most common around major coastal estuaries and salt marshes. Project-related activities are not anticipated to have a significant impact on this species or its habitat. Large diameter trees will be left intact. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

The hermit warbler (*Setophaga occidentalis*) occurs in tall coniferous forests, especially of Douglas fir. It forages on arthropods and nests on conifer branches in open cup of fine twig and other plant material. Project-related activities are not anticipated to have a significant impact on this species or its habitat. If project-related brush clearing or structural work on buildings with bird nesting habitat must occur during the reproductive season, bird nesting surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

5.2.2 Mammals

The pallid bat (*Antrozous pallidus*) occurs in semi-arid locations in rocky, mountainous areas and near water. It may also be found over more open, sparsely vegetated grasslands. The pallid bat may roost in attics, rock cracks, or in the open near foliage. Although habitat may exist locally for this species, it was not detected within the study area. If project-related brush clearing or structural work on buildings with bat roosting habitat must occur during the bat reproductive season, bat surveys will be performed in those locations by a qualified biologist to ensure that colonies are not destroyed.

Townsend's big-eared bat (*Corynorhinus townsendii*) feeds on small moths, beetles, and soft-bodied insects. It roosts in caves, mines, tunnels, buildings, or other human-made structures. If project-related brush clearing or structural work on buildings with bat roosting habitat must occur during the bat reproductive season, bat surveys will be performed in those locations by a qualified biologist to ensure that colonies are not destroyed.

The silver-haired bat (*Lasionycteris noctivagans*) is primarily a forest dweller, feeding mainly on moths and other insects close to forest streams, ponds, and open brushy areas. It roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. If project-related brush clearing or structural work on buildings with bat roosting habitat must occur during the bat reproductive season, bat surveys will be performed in those locations by a qualified biologist to ensure that colonies are not destroyed.

The long-eared myotis (*Myotis evotis*) feeds on a variety of arthropods including moths, flies, spiders, and especially beetles. It roosts singly, or in small groups in buildings, crevices, spaces under bark, and snags. Caves are used primarily as night roosts. If project-related brush clearing or structural work on buildings with bat roosting habitat must occur during the bat reproductive season, bat surveys will be performed in those locations by a qualified biologist to ensure that colonies are not destroyed.

Yuma myotis (*Myotis yumanensis*) usually feeds on small flying insects over water sources such as ponds, streams, and stock tanks. It roosts in buildings, mines, caves, crevices, and under bridges. If project-related brush clearing or structural work on buildings with bat roosting habitat must occur during the bat reproductive season, bat surveys will be performed in those locations by a qualified biologist to ensure that colonies are not destroyed.

5.2.3 Amphibians

The foothill yellow-legged frog (*Rana boylei*) frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. They are sometimes found in isolated pools; vegetated backwaters; and deep, shaded, spring-fed pools. Although habitat may exist locally for this species, it was not detected within the study area. Project-related activities are not anticipated to impact this species or its habitat due to avoidance of wetlands and riparian areas.

5.2.5 Insects

The western bumble bee (*Bombus occidentalis*) typically nests underground in abandoned rodent burrows or other cavities. It's a generalist forager that visits a wide variety of flowering plants. Project-related activities are not anticipated to have a significant impact on this species or its habitat.

5.3 Special Status Natural Communities and Habitats

Sensitive natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California. Holland-type CNDDDB natural communities are habitat for numerous special status plant and animal species. CDFW no longer updates their tracking of Holland-type CNDDDB natural communities and has since standardized alliance and association-level vegetation nomenclature for California to comply with the National Vegetation Classification System. 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.

5.3.1 Natural Communities

Natural communities encountered within the study area include scattered patches of coyote brush scrub (*Baccharis pilularis* Shrubland Alliance [G5, S5]) and broom patches (*Cytisus scoparius* and Others Shrubland Semi-Natural Alliance [No rank]). Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance [G4, S4]) occur in three isolated depressional wetlands in the western portion of the study area (SHN, 2016). The region surrounding the study area is composed of Douglas fir - tanoak forest (*Pseudotsuga menziesii* - *Notholithocarpus densiflorus* Forest Alliance [G4, S4]). Sensitive natural communities with heritage ranks of 3 or lower were not encountered within the study area.

5.3.2 Wetland Habitats

Three small depressional, palustrine wetlands were delineated within the study area totaling 0.08 acres (Figure 2) (SHN, 2016). Project development is not anticipated to occur within these wetlands.

6.0 Conclusions

The purpose of this report was to assess the biological resources and habitat available within the study area, and to evaluate project-related impacts. The habitat value and availability was assessed for special status species that occur within the study area. Recommendations for avoiding and mitigating impacts are addressed in Section 7.0.

6.1 Special Plant Status Species

Of the 79 special status plant species reported within the region, 77 are considered to have a low potential to occur within the project site and two are considered to have a moderate potential; however, site investigations failed to locate any rare plants within the study area. Site investigations were conducted during appropriate seasons for detecting the two plant species with moderate or high potential for occurrence. The project is not likely to affect rare plant species or their habitats.

6.2 Special Wildlife Status Species

Of the 46 special status animal species reported within the region, 30 animal species are considered to have a low potential to occur at the project site and 16 species have a moderate to high potential.

Special status birds are not likely to be affected by the proposed project. Large diameter trees will be left intact, and vegetation clearing will occur outside the migratory bird nesting season. If project-related brush clearing or structural work on buildings with nesting bird habitat must occur during the breeding season, nesting bird surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

Special status mammals are not likely to be affected by the proposed project. If project-related brush clearing or structural work on buildings with bat roosting habitat must occur during the bat reproductive season, bat surveys will be performed in locations by a qualified biologist to ensure that colonies are not destroyed.

Special status amphibians are not likely to be affected by project-related activities due to avoidance of wetlands and riparian areas.

6.3 Sensitive Natural Communities

Special status natural communities are not likely to be affected by the proposed project. Natural communities with heritage ranks of 3 or lower were not encountered within the study area.

6.4 Nesting Birds

Bird species may potentially nest within the area, but no nests were observed during the study. Nesting birds are protected by the MBTA and nests of native birds protected under CFGC (Section 3503). Project-related vegetation clearing will occur outside the nesting season, which is generally considered to be March 15 through August 1. If project-related brush clearing or structural work on buildings with nesting bird habitat must occur during the breeding season, nesting bird surveys will be performed in those locations by a qualified biologist to ensure that active nests are not destroyed.

6.5 Impacts on Wildlife Movement

The study area may facilitate home range and dispersal movement of resident wildlife species, and is within larger regional avian flyways. The project site is within a large graded flat area. Any new fencing will be designed to allow wildlife passage around that fencing. As a result, this potential project feature will not affect wildlife movement corridors. Existing and proposed development does not restrict regional wildlife movement or wildlife migration patterns because there are available alternatives within the area.

6.7 Conflicts with Local Policies or Ordinances Protecting Biological Resources

A special permit from the County of Humboldt will be required if work is conducted within a SMA, as defined in Title 3, Section 314-61.1 of the Humboldt County Code. If SMA setbacks are not achievable with project goals a reduced buffer may be requested.

6.8 Development Effects

The proposed project is expected to have minimal direct impacts to biological resources. The activities associated with the proposed project will occur within previously disturbed areas, which are already impacted by human activities and land uses. Future development in adherence to the following recommendations will likely not result in substantial impacts to biological resources.

7.0 Recommendations

The following recommendations are provided to ensure that the project will not result in substantial impacts to biological resources.

- Conserve existing wetlands and riparian habitats within and adjacent to the project site.
- Limit native tree, shrub, and brush clearing to minimize impacts to nesting bird habitat.
- Leave large trees and snags in place for raptor nesting habitat.
- Limit clearing of vegetation to the non-breeding season for birds and bats. If work is done on structures between September 15 and February 28 (outside reproductive season for most birds and bats), these activities are not likely to affect reproductive success. If brush clearing

or structural work on building (in locations with bird or bat nesting/roosting habitat) must occur during the reproductive season, bat and nesting bird surveys should be performed by a qualified biologist to ensure that no active nests are destroyed.

- Consider enclosing open structures that may provide nesting or roosting sites for birds or bats during the non-reproductive season to exclude colonization prior to migratory bird and bat arrival.
- Establish a no development riparian buffer that extends 150 feet from permanently established vegetation closest to the Trinity River or 30 feet from top of its bank; whichever is larger.
- Prepare a construction storm water pollution prevention plan with appropriate best management practices to minimize sediment transport to aquatic ecosystems and consider low impact development strategies.
- Design future water detention ponds so that they are capable of being drained if non-native bullfrogs become established.
- Use native and locally sourced plant material for landscaping and revegetation.
- Ensure that future development or new fencing does not prevent wildlife movement by allowing movement corridors outside the project area.

8.0 References

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds). (2012). *The Jepson Manual: Vascular Plants of California, Second Edition*. Berkeley, CA: University of California Press, Berkeley.
- Calflora. (NR). "Calflora" database. Berkeley, CA: Calflora. Accessed February 2015 at: <http://calflora.org/>.
- Consortium of California Herbaria. (NR). "Consortium of California Herbaria" database. Berkeley, CA: CCH. Accessed February 2015 at: <http://ucjeps.berkeley.edu/consortium/>.
- California Department of Fish and Wildlife. (1984). California Endangered Species Act. CFGC Sections 2070, 2080. Sacramento, CA: CDFW.
- . (1994) "A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code". Sacramento, CA: CDFW.
- . Natural Community Conservation Planning Act. Fish and Game Code Section 2800. Sacramento, CA: CDFW.
- . (1998). Fish and Game Code. Sacramento, CA: CDFW.
- . (November 2009). "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities." Accessed at: https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf.
- . (2010). Vegetation Classification and Mapping Program (VegCAMP), "Natural Communities List." Sacramento, CA: CDFW. Accessed September 2010 at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp.
- . (2016a). "California Natural Diversity Database (CNDDDB)." Accessed February 2015 at: <http://www.dfg.ca.gov/biogeodata/cnddb/>. Sacramento, CA: CDFW.
- . (2010b). "Biogeographic Information and Observation System (BIOS), Version 5.1." Sacramento, CA: CDFW. Accessed February 2015 at: <http://bios.dfg.ca.gov/>.
- . (2016c). "Special Vascular Plants, Bryophytes, and Lichens List." Sacramento, CA: CDFW.
- . (2016d). "Special Animals List." Sacramento, CA: CDFW.
- California Native Plant Society. (2016). "CNPS Rare Plant Program, Inventory of Rare and Endangered Plants (online edition, v8-02)." Sacramento, CA: CNPS. Accessed February 2016 at: <http://www.rareplants.cnps.org>.
- California Natural Resources Agency. (1970). California Environmental Quality Act. CCR: Title 14, Div. 6, Chap. 3, Appendix G; Sections 15125 (c) and 15380(d)
- County of Humboldt. (1988). Humboldt County General Plan: Volume I Framework Plan (Amended 1998). Eureka, CA.
- County of Humboldt. (2005). "Streamside Management Area Ordinance". Title 3, Section 314-61.1 of the Humboldt County Code. Eureka, CA.
- Environmental Protection Agency. (2002). Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. Washington, D.C.

- . Section 401 of the Clean Water Act, 33 USC § 1341. Washington, D.C.
- Sawyer, J.O., T. Keeler-Wolf, and J Evans. (2009). *A Manual of California Vegetation, Second Edition*. Sacramento, CA:CNPS Press.
- SHN Engineers and Geologists. (2016). "Preliminary Jurisdictional Wetland and Other Waters Delineation. Emerald Family Farms, LLC. Willow Creek, California". Eureka, CA
- State Water Resource Control Board. (1969.) Porter-Cologne Act.CWC Section 7. Sacramento, CA.
- U. S. Army Corps of Engineers Environmental Laboratory. (January 1987). *Corps of Engineers Wetlands Delineation Manual: Wetlands Research Program Technical Report Y-87-1*. Vicksburg, MS:ACOE.
- U.S. Army Corps of Engineers/Environmental Protection Agency. (2008). "Clean Water Act Jurisdiction." Washington, D.C.:ACOE/EPA.
- U.S. Department of Agriculture, Natural Resources Conservation Service. (2016). Web Soil Survey. Accessed on August 25, 2016 at:
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- U.S. Fish and Wildlife Service. (1918). Migratory Bird Treaty Act .50 CFR 21, 16 USC 703. Washington, D.C.
- . (1934). The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995). Washington, D.C.
- . (1973). Endangered Species Act.16 USC 1532, 16 U.S.C. 1536, 50 CFR 17.3. Washington, D.C.
- . (2016a). Information, Planning and Conservation System (IPAC), Trust Resources List." Washington D.C.:USFWS.Accessed February 2015 at:
<https://map.dfg.ca.gov/bios/?tool=cnddbQuick>.
- USGS. (2007). Preliminary Integrated Geologic Map Databases for the United States: Western States. Washington D.C.:USGS. Accessed July 2016 at:
<http://mrdata.usgs.gov/geology/state/state.php?state=CA>.
- Whitaker, Doug and Richard L Knight (eds). (Summer 1998). *Understanding Wildlife Responses to Humans*. *Wildlife Society Bulletin*, Vol. 26, No. 2. pp. 312-317. Bethesda, MD:Wildlife Society.

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Species Lists

Table A-1 Regionally Occurring Special Status Plant Species Scoping List Emerald Family Farm, LLC. Willow Creek, California							
Scientific Name	Common Name	FESA / CESA / CNPS ¹	Heritage Ranks ²	Habitat	Bloom Period	Elevation Range (m)	Potential for Occurrence
<i>Allium siskiyouense</i>	Siskiyou onion	4.3 / - / -	S4 / G4	Lower montane coniferous forest, Upper montane coniferous forest/rocky, sometimes serpentinite	May-July	2805 - 8202	Low
<i>Anomobryum julaceum</i>	slender silver moss	4.2 / - / -	S2 / G4G5	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts	0	328 - 3281	Low
<i>Antennaria suffrutescens</i>	evergreen everlasting	4.3 / - / -	S4? / G4	Lower montane coniferous forest(serpentinite)	January-July	1640 - 5249	Low
<i>Arabis modesta</i>	modest rockcress	4.3 / - / -	S3 / G3	Chaparral, Lower montane coniferous forest	March-July	394 - 2625	Low
<i>Arnica cernua</i>	serpentine arnica	4.3 / - / -	S4 / G5	Lower montane coniferous forest(serpentinite)	April-July	1640 - 6299	Low
<i>Astragalus umbraticus</i>	Bald Mountain milk-vetch	2B.3 / - / -	S2 / G4	Cismontane woodland, Lower montane coniferous forest/sometimes roadside	May-August	492 - 4101	Low
<i>Bensoniella oregona</i>	bensoniella	1B.1 / R / -	S2 / G3	Bogs and fens, Lower montane coniferous forest(openings), Meadows and seeps/mesic	May-July	3002 - 4593	Low
<i>Botrypus virginianus</i>	rattlesnake fern	2B.2 / - / -	S2 / G5	Bogs and fens, Lower montane coniferous forest(mesic), Meadows and seeps, Riparian forest/streams	June-Sep	2346 - 4446	Low
<i>Carex arcta</i>	northern clustered sedge	2B.2 / - / -	S2 / G5	Bogs and fens, North Coast coniferous forest(mesic)	June-Sep	197 - 4593	Low
<i>Carex geyeri</i>	Geyer's sedge	4.2 / - / -	S4 / G5	Great Basin scrub, Lower montane coniferous forest	May-August	3789 - 6890	Low
<i>Carex praticola</i>	northern meadow sedge	2B.2 / - / -	S2 / G5	Meadows and seeps(mesic)	May-July	0 - 10499	Low
<i>Chrysosplenium glechomifolium</i>	pacific golden saxifrage	4.3 / - / -	S3 / G5	North Coast coniferous forest, Riparian forest/Streambanks, sometimes seeps, sometimes roadsides	February-June	33 - 722	Low
<i>Claytonia palustris</i>	marsh claytonia	4.3 / - / -	S4 / G4	Meadows and seeps(mesic), Marshes and swamps, Upper montane coniferous forest	May-October	3281 - 8202	Low
<i>Collomia diversifolia</i>	serpentine collomia	4.3 / - / -	S4 / G4	Chaparral, Cismontane woodland/serpentinite, rocky or gravelly	May-June	984 - 1969	Low
<i>Collomia tracyi</i>	Tracy's collomia	4.3 / - / -	S4 / G4	Lower montane coniferous forest	June-July	984 - 6890	Low
<i>Coptis laciniata</i>	Oregon goldthread	4.2 / - / -	S3 / G4	Meadows and seeps, North Coast coniferous forest(streambanks)/Mesic	March-May	0 - 3281	Low
<i>Cornus canadensis</i>	bunchberry	2B.2 / - / -	S2 / G5	Bogs and fens, Meadows and seeps, North Coast coniferous forest	May-July	197 - 6299	Low
<i>Cypripedium californicum</i>	California lady's-slipper	4.2 / - / -	S4 / G4	Bogs and fens, Lower montane coniferous forest/seeps and streambanks, usually serpentinite	April-August	98 - 9022	Low
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	4.2 / - / -	S4 / G4	Lower montane coniferous forest, North Coast coniferous forest/usually serpentinite seeps and streambanks	March-August	328 - 7989	Low
<i>Cypripedium montanum</i>	mountain lady's-slipper	4.2 / - / -	S4 / G4	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest	March-August	607 - 7300	Low
<i>Draba howellii</i>	Howell's draba	4.3 / - / -	S4 / G4	Subalpine coniferous forest(rocky)	June-July	4495 - 9843	Low
<i>Epilobium oreganum</i>	Oregon fireweed	1B.2 / - / -	S2 / G2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest/mesic	June-Sep	1640 - 7349	Low
<i>Epilobium rigidum</i>	Siskiyou mountains willowherb	4.3 / - / -	S3 / G3G4	Lower montane coniferous forest(serpentinite)	July-August	492 - 3937	Low
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	4.3 / - / -	S4 / G4	Broadleafed upland forest, North Coast coniferous forest/sandy or rocky	July-Sep	148 - 5906	Low

Table A-1 Regionally Occurring Special Status Plant Species Scoping List Emerald Family Farm, LLC. Willow Creek, California							
Scientific Name	Common Name	FESA / CESA / CNPS ¹	Heritage Ranks ²	Habitat	Bloom Period	Elevation Range (m)	Potential for Occurrence
<i>Eriogonum congdonii</i>	Congdon's buckwheat	4.3 / - / -	S4 / G4	Lower montane coniferous forest(serpentinite)/Serpentinite, rocky, openings.	June-August	2625 - 7694	Low
<i>Erythranthe trinitiensis</i>	pink-margined monkeyflower	1B.3 / - / -	S2 / G2	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest/Often serpentinite, often roadsides	June-July	1312 - 7497	Low
<i>Erythronium citrinum</i> var. <i>citrinum</i>	lemon-colored fawn lily	4.3 / - / -	S3 / G4T4	Chaparral, Lower montane coniferous forest/usually serpentinite	March-May	492 - 4265	Low
<i>Erythronium oregonum</i>	giant fawn lily	2B.2 / - / -	S2 / G5	Cismontane woodland, Meadows and seeps/sometimes serpentinite, rocky, openings	March-June	328 - 3773	Low
<i>Erythronium revolutum</i>	coast fawn lily	2B.2 / - / -	S3 / G4	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest/Mesic, streambanks	March-Julyl	0 - 5249	Low
<i>Eucephalus vialis</i>	wayside aster	1B.2 / - / -	S1 / G3	Lower montane coniferous forest, Upper montane coniferous forest/gravelly	June-Sep	2986 - 5069	Low
<i>Fritillaria purdyi</i>	Purdy's fritillary	4.3 / - / -	S4 / G4	Chaparral, Cismontane woodland, Lower montane coniferous forest/usually serpentinite	March-June	574 - 7398	Low
<i>Gentiana plurisetosa</i>	Klamath gentian	1B.3 / - / -	S2 / G2G3	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest/mesic	July-Sep	3937 - 6234	Low
<i>Gentiana setigera</i>	Mendocino gentian	1B.2 / - / -	S1 / G2	Lower montane coniferous forest, Meadows and seeps/mesic	August-Sep	1099 - 3494	Low
<i>Gilia capitata</i> ssp. <i>pacifica</i>	pacific gilia	1B.2 / - / -	S2 / G5T3T4	Coastal bluff scrub, Chaparral(openings), Coastal prairie, Valley and foothill grassland	April-August	16 - 4364	Moderate
<i>Glyceria grandis</i>	American manna grass	2B.3 / - / -	S3 / G5	Bogs and fens, Meadows and seeps, Marshes and swamps(streambanks and lake margins)	June-August	49 - 6496	Low
<i>Hemieva ranunculifolia</i>	buttercup-leaf suksdorfia	2B.2 / - / -	S2 / G5	Meadows and seeps, Upper montane coniferous forest/mesic, rocky, granitic	June-August	4921 - 8202	Low
<i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Tracy's tarplant	4.3 / - / -	S4 / G5T4	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest/openings, sometimes serpentinite	May-October	394 - 3937	Low
<i>Iliamna latibracteata</i>	California globe mallow	1B.2 / - / -	S2 / G2G3	Chaparral(montane), Lower montane coniferous forest, North Coast coniferous forest(mesic), Riparian scrub(streambanks)/Often in burned areas	June-August	197 - 6562	Low
<i>Iris tenax</i> ssp. <i>klamathensis</i>	Orleans iris	4.3 / - / -	S4 / G4G5T4	Lower montane coniferous forest(often in disturbed areas)	April-May	328 - 4593	Low
<i>Kopsiopsis hookeri</i>	small groundcone	2B.3 / - / -	S1S2 / G4G5	North Coast coniferous forest	April-August	295 - 2904	Low
<i>Lewisia cotyledon</i> var. <i>heckneri</i>	Heckner's lewisia	1B.2 / - / -	S3 / G4T3	Lower montane coniferous forest(rocky)	May-July	738 - 6890	Low
<i>Lewisia cotyledon</i> var. <i>howellii</i>	Howell's lewisia	3.2 / - / -	S2 / G4T4Q	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest/rocky	April-July	492 - 6594	Low
<i>Lilium kelloggii</i>	Kellogg's lily	4.3 / - / -	S3 / G3	Lower montane coniferous forest, North Coast coniferous forest/Openings, roadsides	May-August	10 - 4265	Low
<i>Lilium pardalinum</i> ssp. <i>vollmeri</i>	Vollmer's lily	4.3 / - / -	S3 / G5T4	Bogs and fens, Meadows and seeps(mesic)	July-August	98 - 5512	Low
<i>Lilium rubescens</i>	redwood lily	4.2 / - / -	S3 / G3	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest/Sometimes serpentinite, sometimes roadsides	April-August	98 - 6266	Low

Table A-1 Regionally Occurring Special Status Plant Species Scoping List Emerald Family Farm, LLC. Willow Creek, California							
Scientific Name	Common Name	FESA / CESA / CNPS ¹	Heritage Ranks ²	Habitat	Bloom Period	Elevation Range (m)	Potential for Occurrence
<i>Lilium washingtonianum</i> ssp. <i>purpurascens</i>	purple-flowered Washington lily	4.3 / - / -	S4? / G4T4	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest/often serpentinite	June-August	230 - 9022	Low
<i>Listera cordata</i>	heart-leaved twayblade	4.2 / - / -	S4 / G5	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	February-July	16 - 4495	Low
<i>Lupinus tracyi</i>	Tracy's lupine	4.3 / - / -	S3 / G4	Upper montane coniferous forest	June-July	2936 - 6562	Low
<i>Lycopodium clavatum</i>	running-pine	4.1 / - / -	S3 / G5	Lower montane coniferous forest(mesic), Marshes and swamps, North Coast coniferous forest(mesic)/often edges, openings, and roadsides	June-August	148 - 4019	Low
<i>Micranthes marshallii</i>	Marshall's saxifrage	4.3 / - / -	S3 / G5	Rocky streambanks, Riparian forest	March - August	#REF!	Low
<i>Microseris borealis</i>	northern microseris	2B.1 / - / -	S1 / G5	Bogs and fens, Lower montane coniferous forest, Meadows and seeps/ mesic	June-Sep	3281 - 6562	Low
<i>Mielichhoferia elongata</i>	elongate copper moss	4.3 / - / -	S4 / G5	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest/Metamorphic rock, usually acidic, usually vernally mesic, often roadsides, sometimes carbonate	0	0 - 6430	Low
<i>Mitellastra caulescens</i>	leafy-stemmed mitrewort	4.2 / - / -	S4 / G5	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest/ mesic, sometimes roadsides	April-October	16 - 5577	Low
<i>Montia howellii</i>	Howell's montia	2B.2 / - / -	S3 / G3G4	Meadows and seeps, North Coast coniferous forest, Vernal pools/vernally mesic, sometimes roadsides	March-May	0 - 2740	Moderate
<i>Oenothera wolfii</i>	Wolf's evening-primrose	1B.1 / - / -	S1 / G2	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest/sandy, usually mesic	May-October	10 - 2625	None
<i>Phacelia leonis</i>	Siskiyou phacelia	1B.3 / - / -	S3 / G3	Meadows and seeps, Upper montane coniferous forest(openings)/often serpentinite	June-August	3937 - 6562	Low
<i>Piperia candida</i>	white-flowered rein orchid	1B.2 / - / -	S3 / G3	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/sometimes serpentinite	May-Sep	98 - 4298	Low
<i>Pityopus californicus</i>	California pinefoot	4.2 / - / -	S4 / G4G5	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest/ mesic	May-August	49 - 7300	Low
<i>Platanthera stricta</i>	slender bog-orchid	4.2 / - / -	S3 / G5	Lower montane coniferous forest, Meadows and seeps/ mesic	May-August	3281 - 7546	Low
<i>Pleuropogon refractus</i>	nodding semaphore grass	4.2 / - / -	S4 / G4	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest/Mesic	April-August	0 - 5249	Low
<i>Ptilidium californicum</i>	pacific fuzz wort	4.3 / - / -	S3? / G3G4	Lower montane coniferous forest, Upper montane coniferous forest/Usually epiphytic on trees, fallen and decaying logs, and stumps; rarely on humus over boulders	May-August	3740 - 5906	Low
<i>Ramalina thrausta</i>	angel's hair lichen	2B.1 / - / -	S2? / G5	North Coast coniferous forest/On dead twigs and other lichens	0	246 - 1411	Low

Table A-1 Regionally Occurring Special Status Plant Species Scoping List Emerald Family Farm, LLC. Willow Creek, California							
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<i>Ribes laxiflorum</i>	trailing black currant	4.3 / - / -	S4 / G5	North Coast coniferous forest/sometimes roadside	March-July	16 - 4577	Low
<i>Rosa gymnocarpa</i> var. <i>serpentina</i>	Gasquet rose	1B.3 / - / -	S2 / G5T3T4	Chaparral, Cismontane woodland/Serpentinite. Often roadsides, sometimes ridges, streambanks, and openings.	April-June	1312 - 5659	Low
<i>Sanguisorba officinalis</i>	great burnet	2B.2 / - / -	S2 / G5?	Bogs and fens, Broadleafed upland forest, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Riparian forest/often serpentinite	July-October	197 - 4593	Low
<i>Sanicula tracyi</i>	Tracy's sanicle	4.2 / - / -	S4 / G4	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest/openings	April-July	328 - 5200	Low
<i>Sedum divergens</i>	cascade stonecrop	2B.3 / - / -	S2 / G5?	Alpine boulder and rock field	July-Sep	5249 - 7644	Low
<i>Sedum laxum</i> ssp. <i>flavidum</i>	pale yellow stonecrop	4.3 / - / -	S4 / G5T4Q	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest/Serpentinite or volcanic	May-July	1493 - 6562	Low
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2 / - / -	S3 / G3	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland/Often in disturbed areas	April-August	0 - 2395	Low
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B.2 / - / -	S2 / G5T2	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest/often roadcuts	May-August	49 - 2887	Low
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	1B.2 / - / -	S1 / G5T1	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	June-August	16 - 4396	Low
<i>Stellaria obtusa</i>	obtuse starwort	4.3 / - / -	S4 / G5	Lower montane coniferous forest, Riparian woodland, Upper montane coniferous forest/mesic, streambanks	May-Sep	492 - 7513	Low
<i>Streptanthus ob lanceolatus</i>	Trinity River jewelflower	1B.2 / - / -	S1 / G1	Cismontane woodland	April-June	66 - 1378	Low
<i>Tauschia glauca</i>	glaucous tauschia	4.3 / - / -	S4 / G4	Lower montane coniferous forest(gravelly, serpentinite)	April-June	262 - 5577	Low
<i>Thermopsis robusta</i>	robust false lupine	1B.2 / - / -	S2 / G2	Broadleafed upland forest, North Coast coniferous forest	May-July	492 - 4921	Low
<i>Tiarella trifoliata</i> var. <i>trifoliata</i>	trifoliolate laceflower	3.2 / - / -	S2S3 / G5T5	Lower montane coniferous forest, North Coast coniferous forest	June-August	558 - 4921	Low
<i>Trifolium howellii</i>	Howell's clover	4.3 / - / -	S4 / G4	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest/mesic	June-August	2625 - 5906	Low
<i>Trillium ovatum</i> ssp. <i>oettingeri</i>	Salmon Mountains wakerobin	4.2 / - / -	S3 / G5T3	Lower montane coniferous forest, Riparian scrub, Upper montane coniferous forest/Mesic	February-July	2805 - 6640	Low
<i>Wyethia longicaulis</i>	Humboldt County wyethia	4.3 / - / -	S4 / G4	Broadleafed upland forest, Coastal prairie, Lower montane coniferous forest/sometimes roadsides	May-July	2461 - 5003	Low
1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), California Native Plant Society (CNPS) 1A: Presumed extirpated in California and either rare or extinct elsewhere 1B: Rare 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 3: Plants for which we need more information-Review list 4: Plants of limited distribution - Watch list 0.1: Seriously threatened in California 0.2: Moderately threatened in California 0.3: Not very threatened in California							

Table A-1 Regionally Occurring Special Status Plant Species Scoping List Emerald Family Farm, LLC. Willow Creek, California							
Scientific Name	Common Name	FESA / CESA / CNPS ¹	Heritage Ranks ²	Habitat	Bloom Period	Elevation Range (m)	Potential for Occurrence
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 A-2 Regionally Occurring Special Status Animal Species Scoping List Emerald Family Farm, LLC. Willow Creek, California					
Scientific Name	Common Name	FESA / CESA / CDFW ¹	Heritage Ranks ²	Potential for Occurrence	Habitat
Amphibians					
<i>Ascaphus truei</i>	Pacific tailed frog	- / - / SSC	G4 , S3S4	Low	Inhabits cold, clear, rocky streams in wet forests. They do not inhabit ponds or lakes.
<i>Plethodon elongatus</i>	Del Norte salamander	- / - / WL	G4 , S3	Low	Terrestrial, associated with moist talus in humid shaded and closed-canopy coastal forests of mixed hardwoods and conifers. Attracted to older forests.
<i>Rana boylei</i>	foothill yellow-legged frog	- / - / SSC	G3 , S3	Moderate	Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.
<i>Rana cascadae</i>	Cascades frog	- / - / SSC	G3G4 , S3	Low	Inhabits wet mountain areas in open coniferous forests to near timberline, including small streams, small pools in meadows, lakes, bogs, ponds, and marshy areas near streams. Typically found in water with no predatory fishes.
<i>Rana draytonii</i>	California red-legged frog	T / - / SSC	G2G3 , S2S3	Low	Inhabits quiet pools of streams, marshes, and occasionally ponds with extensive vegetation. Species range not known north of the Navarro River watershed.
<i>Rhyacotriton variegatus</i>	southern torrent salamander	- / - / SSC	G3G4 , S2S3	Low	Found in shallow, cold, clear, well-shaded rocky streams with year round flow in addition to waterfalls and seepages. Occasionally found in riparian vegetation adjacent to water, but usually found in contact with water.
Birds					
<i>Accipiter cooperii</i>	Cooper's hawk	- / - / WL	G5 , S4	Moderate	Stick platform nests in crotches of riparian deciduous trees and second-growth conifers near streams. Nest is a lined with bark.
<i>Accipiter gentilis</i>	northern goshawk	- / - / SSC	G5 , S3	Moderate	Nest in predominantly interior mountain mature and old-growth forest stands with dense canopy cover and open understories. Forages in mature and forests as well as meadow edges and open brush.
<i>Aquila chrysaetos</i>	golden eagle	- / - / FP ; WL	G5 , S3	Moderate	Needs open terrain for hunting. Builds large platform nests in rugged, open habitats; cliffs and large trees in open areas.
<i>Ardea herodias</i>	great blue heron	- / - / -	G5 , S4	Moderate	In shallow estuaries and emergent wetlands. Less common along riverine, rocky marine shores, and pastures. Searches for prey in shallow water and open fields. Nests in colonies in tops of secluded large snags/live trees.
<i>Falco peregrinus anatum</i>	American peregrine falcon	D / D / FP	G4T4 , S3S4	Moderate	Occupies a broad range of ecological communities. Perches on cliffs, power poles, and other tall structures.
<i>Haliaeetus leucocephalus</i>	bald eagle	D / E / FP	G5 , S3	Moderate	Large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork
<i>Icteria virens</i>	yellow-breasted chat	- / - / SSC	G5 , S3	High	Thickets and other dense, regrowing areas such as bramble bushes, clearcuts, powerline corridors, and shrubs along streams.
<i>Pandion haliaetus</i>	osprey	- / - / WL	G5 , S4	High	Rivers, lakes, and coast where large numbers of fish are present. May be most common around major coastal estuaries and salt marshes.
<i>Picoides albolarvatus</i>	White-headed woodpecker	- / - / -	G4 , S4	Low	Frequents montane pine and fir forest habitats with large trees and snags, and tree/shrub, and tree/herbaceous ecotones. Forages on conifer seeds and insects. Nests in open conifer habitats, often near edges of roads, natural openings, or on edges of small clearings.
<i>Psilosops flammeolus</i>	flamulated owl	- / - / -	G4 , S2S4	Low	Breeds in open pine forest in mountains, especially ponderosa pine forest. Feeds nocturnally on insects. Nests in tree cavities.
<i>Setophaga occidentalis</i>	hermit warbler	- / - / -	G4G5 , S4	High	Occurs in tall coniferous forests, especially of Douglas fir. Forages on insects and spiders. Nests on conifer branches in open cup of fine twig and other pant material.
<i>Sphyrapicus ruber</i>	red-breasted sapsucker	- / - / -	G5 , S4	Low	Breeds primarily in coniferous forests, but also uses deciduous and riparian habitat and occasionally open habitats. Forages on tree sap, fruit, and arthropods. Nest in cavity in dead trees or dead branches.
<i>Strix occidentalis caurina</i>	northern spotted owl	T / C T / SSC	G3T3 , S2S3	Low	Generally inhabit older forested that contain multi-layered, multi-species, closed canopy structure but may occur in younger forest with large snags, tree cavities, and large woody debris. Requires open space within and below the upper canopy.
Fish					
<i>Acipenser medirostris</i>	green sturgeon	T / - / SSC	G3 , S1S2	None	Utilizes both freshwater and saltwater habitat. Spawns in deep pools in large, turbulent, freshwater river main stem rivers. Forages on benthic invertebrates.
<i>Oncorhynchus kisutch</i>	coho salmon - southern Oregon / northern California ESU	T / T / -	G4T2Q , S2?	None	Anadromous; spend first half of life rearing and feeding in streams and tributaries. Spawning habitat is small streams with stable gravel substrates.

Table A-2 Regionally Occurring Special Status Animal Species Scoping List Emerald Family Farm, LLC. Willow Creek, California					
Scientific Name	Common Name	FESA / CESA / CDFW ¹	Heritage Ranks ²	Potential for Occurrence	Habitat
<i>Oncorhynchus mykiss irideus</i>	steelhead - northern California DPS	T / - / -	G5T2T3Q , S2S3	None	Anadromous; capable of surviving in a wide range of temperature conditions. Spawning habitat consists of gravel substrates free of excessive silt. DSP has springtime entry into the Klamath River.
<i>Oncorhynchus tshawytscha</i>	chinook salmon - upper Klamath and Trinity Rivers ESU.	- / - / SSC	G5 , S1S2	None	Anadromous; freshwater streams and estuaries. Eggs are laid in deeper water with larger gravel, and species requires cool water and good water flow (to supply oxygen) to survive.
Insects					
<i>Bombus occidentalis</i>	western bumble bee	- / - / -	G2G3 , S1	Moderate	Typically nests underground in abandoned rodent burrows or other cavities. Generalist forager visiting a wide variety of flowering plants.
Mammals					
<i>Antrozous pallidus</i>	pallid bat	- / - / SSC	G5 , S3	Moderate	Semi-arid locations in rocky, mountainous areas and near water. Also found over more open, sparsely vegetated grasslands. May roost in attics, rock cracks, or in the open near foliage.
<i>Arborimus pomo</i>	Sonoma tree vole	- / - / SSC	G3 , S3	Low	Specialized feeder of needles of Douglas-fir and grand fir. Nest frequently in trees and in shallow burrows at the base of fir trees.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	- / C T / SSC	G3G4 , S2	Moderate	Feeds on small moths, beetles and soft-bodied insects. Roosts in caves, mines, tunnels, buildings, or other human-made structures.
<i>Gulo gulo</i>	California wolverine	- / T / FP	G4 , S1	Low	Forages in open to sparse tree habitats. Dens in caves, cliffs, hollow logs, cavities in the ground, under rocks. Most sightings within 1600-4800 ft elevation range.
<i>Lasionycteris noctivagans</i>	silver-haired bat	- / - / -	G5 , S3S4	Moderate	Primarily a forest dweller; feeds mainly on moths and other insects close to forest streams, ponds, and open brushy areas. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark
<i>Lasiurus cinereus</i>	hoary bat	- / - / -	G5 , S4	Low	Generally solitary species. Feeds on various flying insects, primarily moths. Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Generally roosts in dense foliage of medium to large trees.
<i>Martes caurina humboldtensis</i>	Humboldt marten	- / C E / SSC	G5T1 , S1	Low	Late-successional coniferous forests, but may occur in earlier seral stages with large logs and stumps; generally avoid nonforested areas including prairies and clearcuts that lack overhead cover.
<i>Myotis evotis</i>	long-eared myotis	- / - / -	G5 , S3	Moderate	Feeds on a variety of arthropods including moths, flies, spiders, and especially beetles. Roosts singly, or in small groups in buildings, crevices, spaces under bark, and snags. Caves are used primarily as night roosts.
<i>Myotis thysanodes</i>	fringed myotis	- / - / -	G4 , S3	Low	Uses open habitats, early successional stages, streams, lakes, and ponds as foraging areas. Feeds mostly on insects and other arthropods. Roosts in colonies located in caves, mines, buildings, or crevices. Generally at elevations 4,000 ft and higher
<i>Myotis volans</i>	long-legged myotis	- / - / -	G5 , S3	Low	Common in woodland and forest habitats above 4000 ft. Forages on flying insects (primarily moths) in chaparral, coastal scrub, and in early successional stages of woodlands and forests. Roosts in rock crevices, buildings, under tree bark, mines, and caves.
<i>Myotis yumanensis</i>	Yuma myotis	- / - / -	G5 , S4	Moderate	This species usually feeds on small flying insects over water sources such as ponds, streams, and stock tanks. Roosts in buildings, mines, caves, crevices, and under bridges.
<i>Pekania pennanti</i>	fisher - West Coast DPS	P T / C T / SSC	G5T2T3Q , S2S3	Low	Prefers large areas of dense mature coniferous or mixed forest. Shelters in hollow trees, logs, rock crevices, and dens of other animals.
Mollusks					
<i>Ancotrema voyanum</i>	hooded lancetooth	- / - / -	G1G2 , S1S2	None	Occupies damp streams or intermittent channels in late successional areas with coarse woody debris, This species appears to be associated with limestone substrates.
<i>Gonidea angulata</i>	western ridged mussel	- / - / -	G3 , S1S2	Low	Inhabits cold creeks and streams with in flow refuges with low shear stress, and substrate stability. Occurs on the benthos of streams, rivers and lakes with substrates that vary from gravel to firm mud, and include at least some sand, silt or clay as individuals are typically found buried to at least half their length in fine substrate.
<i>Helminthoglypta talmadgei</i>	Trinity shoulderband	- / - / -	G2 , S2	Low	Associated with rock talus on south-facing slopes with proximity to a stream and partial shading by trees. On north-facing slopes this snail can live on the forest floor away from streams, does not seem to need rock talus. Shelters under woody debris, moss, and leaf mold. Herbivore.
<i>Megomphix californicus</i>	Natural Bridge megomphix	- / - / -	G1G2 , S1S2	Low	Little is known about this species. Other species within this genus have been found under the mat of decaying leaves under bigleaf maples, hazel bushes, and sword ferns in addition to leaf mold containing a mix of conifer and hardwood debris. Usually in areas shaded by a nearly closed canopy.

Table A-2 Regionally Occurring Special Status Animal Species Scoping List Emerald Family Farm, LLC. Willow Creek, California					
Scientific Name	Common Name	FESA / CESA / CDFW ¹	Heritage Ranks ²	Potential for Occurrence	Habitat
<i>Monadenia churchi</i>	Klamath sideband	- / - / -	G2G3 , S2	Low	Limestone outcrops, caves, talus slides, and lava rockslides, especially in riparian areas and under nearby forest debris in heavy shade.
<i>Monadenia infumata ochromphalus</i>	yellow-based sideband	- / - / -	G2T1 , S1	Low	Mesic forest habitats, growth and riparian, or near springs or other water sources in forest situations, generally with rock substrates or large woody debris and logs for refugia.
<i>Monadenia infumata setosa</i>	Trinity bristle snail	- / T / -	G2T2 , S2	Low	Riparian corridors and uplands within Klamath mixed-conifer forests having a deciduous hardwood understory. The snail is primarily found in moist but well-drained, well-shaded canyons or streamside benches covered with a layer of leaf mold at least four inches deep.
<i>Prophysaon coeruleum</i>	Blue-gray taildropper slug	- / - / -	G3G4 , S1S2	Low	Occupies closed canopy old-growth and moist second-growth conifer dominated stands with word fern herbaceous layer. Found on bark and among mosses under conifer logs and under bits of small, usually conifer debris. Forages on fungus.
<i>Vespericola pressleyi</i>	Big Bar hesperian	- / - / -	G1 , S1	Low	Inhabits forests of conifer and/or hardwood trees in permanently damp areas within 200 meters of seeps, springs, and stable streams.
Reptiles					
<i>Emys marmorata</i>	western pond turtle	- / - / SSC	G3G4, S3	High	Associated with permanent or nearly permanent water in a wide variety of habitat types. Omnivorous; consuming aquatic plant material, aquatic invertebrates as well as fishes and frogs. Require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Hibernation in colder areas is passed underwater in bottom mud.
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 A-3
Observed Botanical Species List
Emerald Family Farm, LLC. Willow Creek, California

Species Name	Common Name	Family	Lifeform	Status
<i>Acer macrophyllum</i>	bigleaf maple	Sapindaceae	Tree	Native
<i>Adiantum jordanii</i>	California maidenhair fern	Pteridaceae	Fern	Native
<i>Agrostis exarata</i>	bentgrass	Poaceae	Perennial grass	Native
<i>Alnus rhombifolia</i>	white alder	Betulaceae	Tree	Native
<i>Anisocarpus madioides</i>	woodland mardia	Asteraceae	Perennial herb	Native
<i>Arbutus menziesii</i>	madrono	Ericaceae	Tree	Native
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	common manzanita	Ericaceae	Shrub	Native
<i>Artemisia douglasiana</i>	California mugwort	Asteraceae	Perennial herb	Native
<i>Artemisia</i> sp.	sage	Asteraceae	Perennial herb	Unknown
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	western lady fern	Woodsiaceae	Fern	Native
<i>Avena sativa</i>	wild oat	Poaceae	Annual, Perennial grass	Non-native
<i>Baccharis pilularis</i>	coyote brush	Asteraceae	Shrub	Native
<i>Brassica nigra</i>	black mustard	Brassicaceae	Annual herb	Invasive
<i>Briza maxima</i>	rattlesnake grass	Poaceae	Annual grass	Invasive
<i>Bromus hordeaceus</i>	soft chess	Poaceae	Annual grass	Invasive
<i>Carex nudata</i>	torrent sedge	Cyperaceae	Perennial grasslike herb	Native
<i>Ceanothus integerrimus</i>	deer brush	Rhamnaceae	Shrub	Native
<i>Centaurea solstitialis</i>	yellow starthistle	Asteraceae	Annual herb	Invasive
<i>Cercis occidentalis</i>	western redbud	Fabaceae	Tree, Shrub	Native
<i>Cichorium intybus</i>	chicory	Asteraceae	Perennial herb	Non-native
<i>Cirsium vulgare</i>	bullthistle	Asteraceae	Perennial herb	Invasive
<i>Cornus nuttallii</i>	dogwood	Cornaceae	Tree, Shrub	Native
<i>Corylus cornuta</i> ssp. <i>californica</i>	beaked hazelnut	Betulaceae	Shrub	Native
<i>Croton setigerus</i>	turkey mullein	Euphorbiaceae	annual herb	Native
<i>Cynodon dactylon</i>	Bermuda grass	Poaceae	Perennial grass	Invasive
<i>Cynosurus echinatus</i>	dogtail grass	Poaceae	Annual grass	Invasive
<i>Cyperus eragrostis</i>	tall cyperus	Cyperaceae	Perennial grasslike herb	Native
<i>Cytisus scoparius</i>	Scotch broom	Fabaceae	Shrub	Invasive
<i>Dactylis glomerata</i>	orchardgrass	Poaceae	Perennial grass	Invasive
<i>Darmera peltata</i>	umbrella plant	Saxifragaceae	Perennial herb	Native
<i>Daucus carota</i>	carrot	Apiaceae	Perennial herb	Invasive
<i>Deschampsia danthonioides</i>	annual hairgrass	Poaceae	Annual grass	Native
<i>Deschampsia elongata</i>	hairgrass	Poaceae	Perennial grass	Native
<i>Digitaria sanguinalis</i>	crabgrass	Poaceae	Annual grass	Non-native

Table A-3
Observed Botanical Species List
Emerald Family Farm, LLC. Willow Creek, California

Species Name	Common Name	Family	Lifeform	Status
<i>Elymus glaucus</i>	blue wildrye	Poaceae	Perennial grass	Native
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	willow herb	Onagraceae	Perennial herb	Native
<i>Eriogonum nudum</i>	naked buckwheat	Polygonaceae	Shrub	Native
<i>Erodium brachycarpum</i>	white stemmed filaree	Geraniaceae	Annual herb	Invasive
<i>Erodium brachycarpum</i>	white stemmed filaree	Geraniaceae	Annual herb	Invasive
<i>Euphorbia maculata</i>	spotted spurge	Euphorbiaceae	Annual herb	Non-native
<i>Festuca idahoensis</i>	blue fescue	Poaceae	Perennial grass	Native
<i>Fragaria vesca</i>	wild strawberry	Rosaceae	Perennial herb	Native
<i>Frangula californica</i>	California coffeeberry	Rhamnaceae	Shrub	Native
<i>Fraxinus latifolia</i>	Oregon ash	Oleaceae	Tree	Native
<i>Galium</i> sp.	bedstraw	Rubiaceae	Annual herb	Unknown
<i>Hedera helix</i>	English ivy	Araliaceae	Vine, Shrub	Invasive
<i>Heterotheca Oregona</i>	Oregon golden aster	Asteraceae	Perennial herb	Native
<i>Heuchera micrantha</i>	alum root	Saxifragaceae	Perennial herb	Native
<i>Heuchera micrantha</i>	alum root	Saxifragaceae	Perennial herb	Native
<i>Hieracium albiflorum</i>	white flowered hawkweed	Asteraceae	Perennial herb	Native
<i>Holcus lanatus</i>	common velvetgrass	Poaceae	Perennial grass	Invasive
<i>Holodiscus discolor</i>	oceanspray	Rosaceae	Shrub	Native
<i>Hordeum marinum</i>	seaside barley	Poaceae	Annual grass	Invasive
<i>Hypericum perforatum</i>	Klamathweed	Hypericaceae	Perennial herb	Invasive
<i>Hypochaeris radicata</i>	hairy cats ear	Asteraceae	Perennial herb	Invasive
<i>Juncus bufonius</i>	common toad rush	Juncaceae	Annual grasslike herb	Native
<i>Leucanthemum vulgare</i>	oxe eye daisy	Asteraceae	Perennial herb	Invasive
<i>Lonicera hispidula</i>	pink honeysuckle	Caprifoliaceae	Vine, Shrub	Native
<i>Lysimachia arvensis</i>	scarlet pimpernel	Myrsinaceae	Annual herb	Non-native
<i>Malus</i> X	cultivated apple	Rosaceae	Tree	Non-native
<i>Melilotus albus</i>	white sweetclover	Fabaceae	Annual, Biennial herb	Invasive
<i>Mentha pulegium</i>	pennyroyal	Lamiaceae	Perennial herb	Invasive
<i>Nicotiana quadrivalvis</i>	Indian tobacco	Solanaceae	Annual herb	Native
<i>Notholithocarpus densiflorus</i> var. <i>densiflorus</i>	tanoak	Fagaceae	Tree, Shrub	Native
<i>Panicum capillare</i>	witch grass	Poaceae	Perennial grass	Native
<i>Pinus ponderosa</i>	yellow pine	Pinaceae	Tree	Native
<i>Plantago lanceolata</i>	ribwort	Plantaginaceae	Perennial herb	Invasive
<i>Polystichum munitum</i>	western sword fern	Dryopteridaceae	Fern	Native

Table A-3
Observed Botanical Species List
Emerald Family Farm, LLC. Willow Creek, California

Species Name	Common Name	Family	Lifeform	Status
<i>Populus trichocarpa</i>	black cottonwood	Salicaceae	Tree	Native
<i>Prosartes smithii</i>	largeflower fairybells	Liliaceae	Perennial herb	Native
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	douglas fir	Pinaceae	Tree	Native
<i>Pteridium aquilinum</i>	western brackenfern	Dennstaedtiaceae	Fern	Native
<i>Quercus chrysolepis</i>	gold cup live oak	Fagaceae	Tree	Native
<i>Quercus garryana</i>	Oregon oak	Fagaceae	Tree	Native
<i>Quercus kelloggii</i>	California black oak	Fagaceae	Tree	Native
<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae	Shrub	Invasive
<i>Rubus ursinus</i>	California blackberry	Rosaceae	Vine, Shrub	Native
<i>Rumex crispus</i>	curly dock	Polygonaceae	Perennial herb	Invasive
<i>Salix exigua</i>	narrowleaf willow	Salicaceae	Tree, Shrub	Native
<i>Salix lasiandra</i> var. <i>lasiandra</i>	pacific willow	Salicaceae	Tree	Native
<i>Salix lasiolepis</i>	arroyo willow	Salicaceae	Tree, Shrub	Native
<i>Sonchus asper</i> ssp. <i>asper</i>	sow thistle	Asteraceae	Annual herb	Invasive
<i>Spergularia rubra</i>	purple sand spurry	Caryophyllaceae	Annual, Perennial herb	Non-native
<i>Toxicodendron diversilobum</i>	poison oak	Anacardiaceae	Vine, Shrub	Native
<i>Tribulus terrestris</i>	puncture vine	Zygophyllaceae	annual herb	Invasive
<i>Trichostema lanceolatum</i>	vinegarweed	Lamiaceae	annual herb	Native
<i>Trifolium repens</i>	clovers	Fabaceae	Annual herb	Non-native
<i>Trisetum cernuum</i>	nodding oatgrass	Poaceae	Perennial grass	Native
<i>Vicia sativa</i>	spring vetch	Fabaceae	Annual herb, Vine	Non-native
<i>Vitis californica</i>	California wild grape	Vitaceae	Vine, Shrub	Native
<i>Whipplea modesta</i>	modesty	Hydrangeaceae	Vine, Shrub	Native
<i>Woodwardia fimbriata</i>	western chain fern	Blechnaceae	Fern	Native
<i>Zeltnera muehlenbergii</i>	Muehlenberg's centaury	Gentianaceae	Annual herb	Native

B

Site Photographs

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Photo 1. Looking northeast from the western portion of the study area. Note disturbed gravel landing area and building. Photo taken August 26, 2015.



Photo 2. Looking east from the central portion of the study area. Note disturbed gravel landing area. Photo taken August 26, 2015.



Photo 3. Looking west from the central portion of the study area. Note continuation of disturbed gravel landing area. Photo taken August 26, 2016.



Photo 4. Looking southwest from the north-central portion of the study area. Note willow dominated wetland in foreground (with Himalayan blackberry to left) and mixed coniferous forest in back ground. Photo taken September 1, 2016.



Photo 5. *Montia howellii* at the Arcata reference (CNDDB occurrence #104) visited the last week in October, 2016. Note detectable and diagnostic rosettes of oblanceolate leaves. *Montia howellii* was not detected at the study area.



Photo 6. *Montia howellii* at the Burnt Ranch reference (CNDDB occurrence #18) visited the first week in November, 2016. Note detectable and diagnostic rosettes of oblanceolate leaves. *Montia howellii* was not detected at the study area.