

BIOLOGICAL RESOURCES ASSESSMENT REPORT

for Federal and State-Listed Wildlife and Plant Species,
Environmentally Sensitive Habitat Areas and
Evaluation Criteria for Establishing Buffer Areas

5204 Woodland Way, Eureka, 95503, Humboldt County, California

Assessor Parcel Number (APN):
403 – 051 – 032



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March 21st, 2024

Certification: I hereby certify that the statements furnished in this report present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

X  _____

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List of Acronyms and Abbreviations

AC	Activity Center
ACOE	Army Corps of Engineers
BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BIOS	Biogeographic Information and Observation System
BMP	Best Management Practices
CalVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CON	Conservation Concern
Corps	U.S. Army Corps of Engineers
EA	Special Environmental
ESHA	Environmentally Sensitive Habitat Areas
ESU	Evolutionarily Significant Unit
F	Fahrenheit
FESA	Federal Endangered Species Act
ft	Feet
ft ²	Square Feet
IPaC	Information for Planning and Conservation
LiDAR	Light Detection and Ranging
mph	Miles per hour
NOAA	Nation Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
NSO	Northern spotted owl
NWI	National Wetland Inventory
PD	Planned Development
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
TVCE	Trinity Valley Consulting Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
VegCAMP	Vegetation Classification and Mapping Program

Section 1 Summary of Findings and Conclusions

A Biological Resources Assessment and evaluating criteria for establishing buffer areas has been prepared by request from Nick Bowman Construction Inc. in response to a County of Humboldt application submittal requirements to assess potential project impacts and development in the defined Study Area located in Eureka, California, Humboldt County.

A protocol-level botanical survey, which was performed in conjunction with this assessment, confirmed the absence of special-status or listed plant species in the Study Area, ensuring the project can proceed without harm to these species. Wetlands and other aquatic Environmentally Sensitive Habitat Areas (ESHA) were delineated within the Study Area and adequately buffered, following the 7 Criteria for Establishing Buffer Areas, as a measure of protection. Sensitive natural vegetation communities, including the Redwood Forest and Woodland Alliance (G3, S3, CDFW Sensitive), were identified but do not require special protection due to poor habitat quality resulting from historical disturbances and abundance of invasive species presence.

The assessment found that the proposed project, involving construction, infrastructure development, and roadwork, will have direct environmental impacts. However, following recommended mitigation measures, including Best Management Practices, ESHA setbacks, preconstruction surveys for amphibians, nesting birds, and mammals, the project can avoid direct and indirect impacts on special-status animal species and address environmental concerns.

By implementing these measures, the project can achieve a neutral or minimal overall impact on biological resources, ensuring responsible development in the Study Area.

Section 2 Introduction, Background, and Project Understanding

2.1 Purpose and Need

This Biological Resources Assessment Report has been prepared in response to a compliance request from The County of Humboldt Planning and Building Department to conduct a Biological Assessment of the subject parcel, referred to throughout this report at the Study Area. The primary objective of this report is to provide an overview of the findings from reconnaissance level wildlife surveys, a protocol-level wetland delineation, and protocol-level botanical surveys, that aim to assess the potential presence of biological resources and sensitive habitats within the Study Area. The report serves to investigate the potential impacts of the proposed project within the designated parcel.

The biological reconnaissance survey conducted for this project is treated as a comprehensive biological assessment. In accordance with the definition provided by the United States Fish and Wildlife Service (USFWS), a biological assessment is a detailed report prepared by a qualified biologist to evaluate the potential impacts of a proposed action on listed species, designated critical habitat, and species proposed for listing. This assessment is specifically required under Section 7 of the Federal Endangered Species Act (FESA) when project activities have the potential to result in a determination of "may affect." The assessment aims to provide thorough information and analysis to determine the potential adverse effects on the mentioned species and habitats. (USFWS: Endangered Species Glossary, 2020).

The assessment aspect of this Report presents on the field survey and findings of the biological resources and habitat quality within the Study Area, and subsequently the proposed project site(s), referred to throughout this Report as the project site and/or project area. This Report therefore addresses the status and possible utilization of the project site by special-status plant and animal species found within the region, and assesses the potential environmental impacts to these resources in association to the proposed project actions within the defined project site area. Special-status species, both plant and animal, include all state or federal rare, threatened, and/or endangered species and all species listed in the California Natural Diversity Database (CNDDDB) list of *Special-Status Plants, Animals and Natural Communities*.

The locations and presence of aquatic resources and other sensitive habitats within the proximity of the project site were identified and mapped to establish setbacks as a measure to assess the environmental impacts of the proposed actions within the Study Area.

This document has been prepared in accordance with legal requirements set forth under Section 7 of the Federal Endangered Species Act (FESA) (16 U.S. Code § 1536) subsection (c), as well as all other acts and programs outlined in *Section 6 Regulatory Guidelines*. The FESA subsection (c) states that "...based on the best scientific and commercial data available, that such species [which are listed or proposed to be listed] may be present, such agency shall conduct a biological assessment for the purpose of identifying any endangered species or threatened species which [are] likely to be affected by such action. Such assessments shall be completed ... before any contract for construction is entered into and before construction is begun with respect to such action."¹

¹ Section 7 of the Federal Endangered Species Act (FESA) (16 U.S. Code § 1536) subsection (c): <https://www.fws.gov/endangered/laws-policies/section-7.html>

Since ground disturbance was predetermined to occur as a result of proposed project activities, protocol-level botanical surveys were recommended at the time of the initial site visit, and were conducted in conjunction with this biological assessment, as a measure to inventory and assess this projects potential to impact listed and special-status plant species, and sensitive natural communities, that may occur within and surrounding the project site.

This Biological Resource Assessment summarizes the results of a reconnaissance level biological resource survey which assessed the Study Area for: (1) the potential to support special-status species; and (2) the potential presence of sensitive biological communities such as wetlands, riparian habitats and other sensitive biological resources protected by local, state, and federal laws and regulations.

This Report considers the potentially occurring species and communities that could be affected by the proposed project activities, and associated infrastructure development, within the Study Area, based on available spatial data, habitat requirements, and observations made during a site visit. The project location was targeted within the parcel and evaluated for potential habitat value to protect endangered, threatened, rare, and sensitive species by traversing the Study Area on foot to observe special-status species as well as overall habitat quality and habitat modification.

2.2 Biologist's Qualifications

The biological assessment for this Report was conducted by Mason London. Mason is the principal biologist at Naiad Biological Consulting. Mason holds an MSc in Biology with a concentration in aquatic ecology from Humboldt State University (HSU). Mason has worked professionally as a wildlife biologist for The Nature Conservancy, a botanist for the Medford, OR district Bureau of Land Management, and an Aquatic Research Scientist for the HSU River Institute. Mason has also conducted protocol level surveys for California red-legged frogs, foothill yellow-legged frogs, western pond turtles, nesting birds, and has performed botanical surveys in a variety of upland and aquatic habitats. Mason has done pre-construction and compliance monitoring surveys on projects throughout California, varying in a wide range of scopes and focused on amphibians/reptiles, birds (nesting), and mammals. Collectively Mason has over 14 years of experience working professionally as a wildlife biologist, botanist, aquatic ecological research scientist, and has instructed several ecological courses at the university level.

The botanical survey described in this Report is being conducted by Sarah Mason. Sarah holds a BS in Botany from Humboldt State University and is currently working towards receiving her MSc in Biology with a concentration in bumblebee ecology. Sarah has worked as an assistant botanist and biologist with Caltrans, as a Botanical Technician for the Klamath and Bitterroot National Forests and currently as a botanist with the Humboldt Redwoods State Parks. Sarah has experience in rare plant identification, protection and monitoring of rare plants, invasive species removal, and teaching plant taxonomy at the university level.

The wetland delineation described in this Report was completed by Joe Seney. Joe Seney is a contracted wetland/soil scientist with over 30 years of experience working as a wetland/soil scientist for the USDI National Park Service, USDA National Resources Conservation Service and USDA Forest Service. In addition, he has taught soils and hydrology courses at Humboldt State University since 2007. Joe has an MSc. In Earth Sciences and a PhD (unfinished) in Soils with a supporting field of Plant Ecology.

2.3 Project Description

The proposed project envisions residential housing on a 2.59-acre lot within the coastal zone (Map 1). As per client-provided details, the project aims to construct a 1,900-square-foot single-family residence, a detached 1,800-square-foot shop/garage, and a driveway on an approximate 0.50-acre open area situated near the north-central section of the forested parcel. Given its location in the coastal zone, acquiring a Coastal Development Permit (CDP) from the Humboldt County Planning Department is necessary. A preliminary review, informed by documents and studies conducted by Naiad Biological Consulting in 2023, indicates the presence of wetland features, including a Class III channel (Appendix F & G). A prior CDP application from 2011 for a similar development is now closed.²

2.4 Study Area Description and Geographic Setting

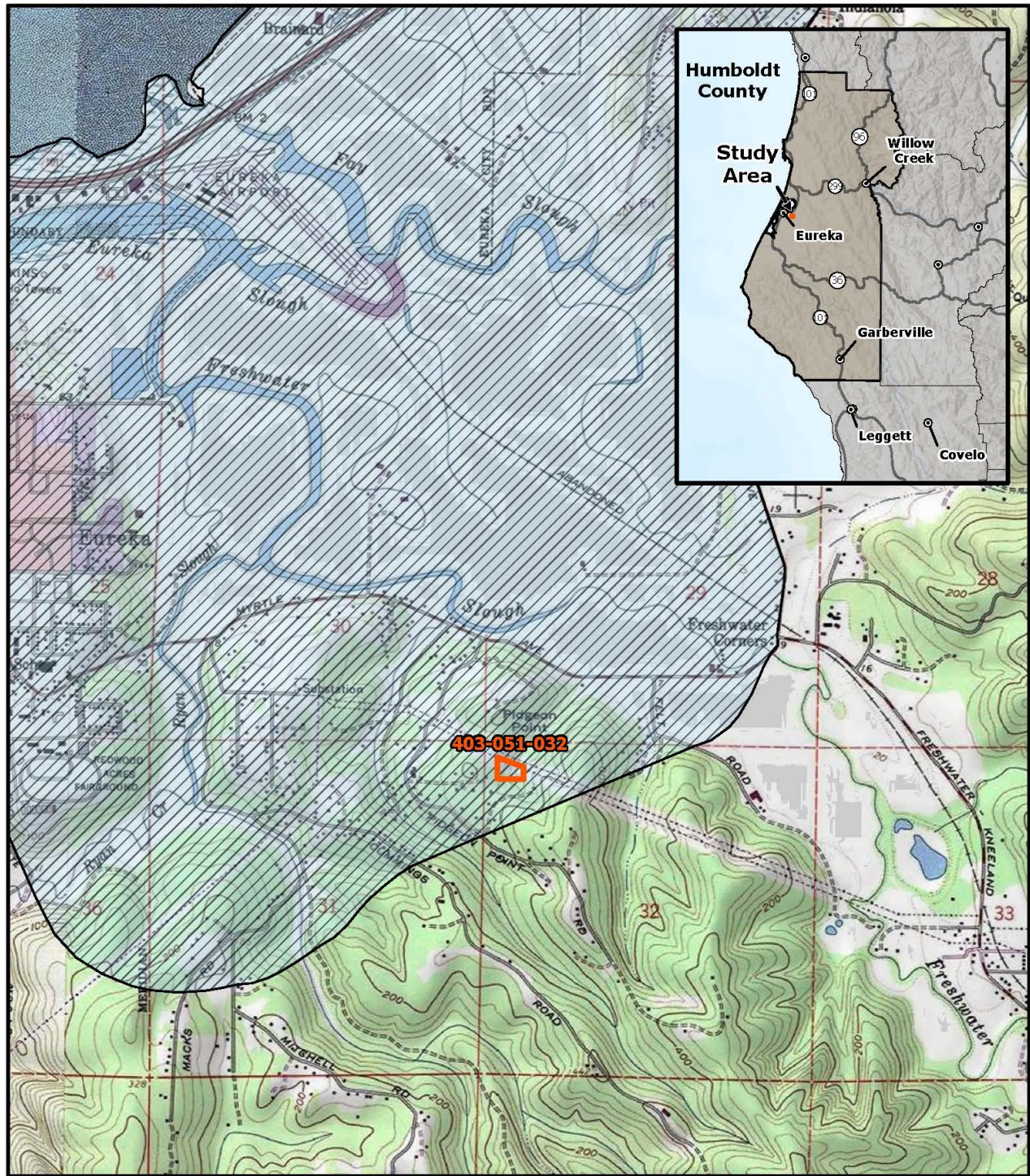
The parcel assessed for the feasibility of the proposed project, referred to as the Study Area, in this report is located at 5204 Woodland Way, Eureka, California 95503 and has the Assessor Parcel Number (APN): 403-051-032 (Map 1 & Map 2).



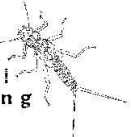
APN: 403-051-032 is 2.59 acres (per Humboldt WebGIS) with a high elevation of approximately 190 feet (approx. 56 meters) and a low elevation of approximately 155 feet (approx. 47 meters) (Google Earth Pro, 2024). The parcel is in Section 32, Township 5 North, Range 1 East (S32, T5N, R1E) of the Humboldt Base and Meridian (HBM) and the approximate center location of the Study Area is 40°46'44.93" N 124°06'03.10" W.

The Study Area is within the California Coastal Zone. Properties in the California Coastal Zone have been designated coastal zone as defined by the Coastal Act. The boundary of the coastal zone includes all land and water areas within 1,000 yards of the mean high tide line, as well as all offshore islands and tidelands that are subject to the jurisdiction of the state. The boundary also includes all the landward extent of the first major ridgeline paralleling the sea, as well as any other land that is determined by the Coastal Commission to have a significant impact on the coastal zone.

The Study Area occurs within the Arcata South 7.5-minute United States Geological Survey (USGS) quadrangle (Quad code: 4012471) within the Freshwater Creek watershed (CDFW Region: 1). Freshwater Creek empties into the Humboldt Bay which empties into the Pacific Ocean at the Humboldt Bay harbor entrance approximately 7.10 air-miles west to southwest of the Study Area.

² The verbiage used in the Project Description was provided by the client. The assessment described in this report was conducted based on the project description understanding presented in Section 2.3



<p>5204 Woodland Way, Eureka, CA 95503 APN: APN 403-051-032</p>	<p>Map 1: Site Location Map</p> <p>Scale: 1:24,000  Study Area  Coastal Zone</p> <p>0 1,000 2,000 4,000 Feet</p> <p>Source: Arcata South 7.5-Minute USGS Quadrangle</p>	<p>Naiad Biological Consulting</p> 
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Map 1. Study Area site location and Coastal Zone boundary.



Map 2: Area Assessed for Project Feasibility	
Scale: 1:2,000	
0 100 200 400 Feet	
Source: Arcata South 7.5-Minute USGS Quadrangle	

Map 2. Project Study Area, Area Assessed for Project Feasibility, and notable habitat features.

Section 3 Methods

3.1 Pre-Site Visit Data Compilation and Preparation

A list of special-status animal and plant species considered to have potential presence within the Study Area was downloaded from the California Department of Fish and Wildlife's California Natural Diversity Database Biogeographic Information and Observation System (CNDDDB BIOS) (CDFW, 2024), the United State Fish and Wildlife Service Information for Planning and Conservation (IPaC, USFWS 2024) and Calflora Project (Calflora, 2024) for the USGS Arcata South 9-quad area. Animals on the CNDDDB list were primarily included based on state or federal listing status or CDFW designation. Native pollinators found in the area were also included based on the state rarity and their potential to be affected by project activities.

Aside from the creation of a target list of special-status species, the Regional Dominate Alliances for the Study Area was downloaded, mapped, and assessed from The U.S. Forest Services' Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) (Map 4). The CALVEG system was developed to classify California's existing vegetation communities for use in statewide resource planning considerations. This was originally accomplished with the use of color infrared satellite imagery and field verification of types by current soil-vegetation mapping efforts as well as professional guidance through a network of contacts throughout the state. It is a hierarchical classification originally based on "formation" categories: forest, woodland, chaparral, shrubs and herbaceous in addition to non-vegetated units. They were originally identified by distinctions calculated among canopy reflectance values used in the LANDSAT satellite. Since then, the classification has been expanded from an initial 129 types occurring throughout the eight regions of the state to the current 213 occurring in nine regions, and image resolution has been enhanced.

Before conducting the site visit, monthly average precipitation data spanning from 1887 to 2024 was obtained from the National Oceanic and Atmospheric Administration (NOAA), specifically the nearest weather station at Eureka WFO Woody Island, California. These historic averages were compared with the monthly precipitation totals for the 2023 and 2024 water year leading up until the site visit occurred. For the 2024 water year, only data leading up to the second site visit (February 13th) was used. This analysis allowed for evaluating variations, anomalies, or trends in precipitation patterns compared to long-term historical context, providing valuable insights into the Study Area's precipitation dynamics for the current water year.

During the initial desktop review of the Study Area, it was found that most of the habitats within and around the Study Area did not meet the necessary criteria to support certain special-status species. For special-status plant species, prior to the site visit and field survey, the list of potentially occurring species was assessed based on elevation, habitat, and micro-habitat requirements. Suitable habitat for some of the species in the generated list were therefore determined to not exist within the project site or surrounding area (Appendix B: Botanical Report -Table 1). Consequently, a more focused search was initiated to identify documented occurrences of species within a 2-mile buffered area around the Study Area (Map 7). This process involved locating the Study Area within the CNDDDB BIOS and creating a polygon with a 2-mile radius using the Select Feature tool.

The species generated from the 2-mile query are presented in Table 1 and more thoroughly assessed in Section 4 Results and Discussion. However, all species generated from the database queries have been evaluated both for potential occurrence and the degree of impact resulting from the proposed project. These assessments are detailed in the respective tables found in Appendix C and are considered in the proposed mitigation measures throughout this report.

Further scrutiny was not given to plant species with confirmed occurrences within this specified area, particularly because a comprehensive protocol-level floristic survey, conducted by Sarah Mason during the 2023 season, documented all plant species present within the project area. Additional information from the 2023 floristic survey can be accessed in Appendix B: Botanical Report.

3.2 Biological Resource and Habitat Investigation

A biological resource and habitat investigation was conducted within the Study Area on April 28th 2023 from 0900 and 1030, and on February 13th 2024 by Naiad Biological Consulting's Principal Biologist, Mason London (Map 3).

The primary objective of the site investigation and field surveys was to identify suitable habitat for special-status species and evaluate the potential impact of the proposed project activities, with a specific focus on the proposed project area within the Study Area. The assessment considered the likelihood of the project and related activities to result in take or incidental take of the identified special-status species (as outlined in Appendix A: Table 2). Take, as defined by the Federal Endangered Species Act (FESA), encompasses actions that may harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect wildlife, or engage in any such conduct (16 U.S.C., §1532 (19)³). The investigation and assessment of the Study Area habitat was conducted within this framework.




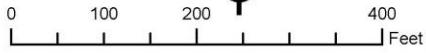


During the field surveys, a meandering transect approach was employed to thoroughly assess suitable habitats for potential species. The survey path was accurately recorded using Avanza Maps™ (Map 3).

The surveys covered all major habitats within the Study Area and evaluated their current quality in relation to species acquisition. It is important to note that this assessment does not constitute an official protocol-level survey, which may be required for project approval by local, state, and/or federal agencies. Additional wildlife surveys may be necessary depending on the specific project location and timing.

Observations and recordings included dominant species in surrounding habitats, the presence of sensitive habitats like riparian areas and potential wetland features, and project site setbacks from watercourses and other aquatic habitats. Distance and slope measurements, as well as setbacks, were determined using a TruPulse 200X laser rangefinder in the field. GIS software was used to generate true buffers and setbacks for all associated maps in this report.

³ California Endangered Species Act to the Federal Endangered Species Act Definitions: <https://wildlife.ca.gov/Conservation/CESA/FESA>



Map 3: Biological Survey Path			
Scale: 1:2,000			 Study Area
			Biological Survey Path
Source: Arcata South 7.5-Minute USGS Quadrangle			 Survey 4/28/23
		 Survey 2/13/24	

Map 3. Biological survey path taken on April 28th 2023 and on February 13th 2024.

3.2.1 Floristic Survey

Since ground disturbance was predetermined to occur in conjunction with the proposed project, protocol-level botanical surveys, for the 2023 blooming season, were completed by contracted botanist Sarah Mason, as a measure to inventory species and assess the potential impacts to listed and special-status plant species that may occur within the project area. Botanical surveys of the site were seasonally appropriate occurring one April 28th, 2023 and June 9th, 2023. During the botanical survey, a meandering transect approach was followed to thoroughly assess suitable habitats for potential species throughout all areas and habitats determined to be potentially impacted by project activities.

This botanical field survey followed protocols recommended by CDFW and are in accordance with the guidelines established by CNPS, from the document *Protocols for Surveying and Evaluating Impacts to Specie Status Native Plant Populations and Sensitive Natural Communities*⁴ (CDFW, 2018). In accordance with the protocol, plants were identified onsite, and a census of species was recorded. Specimens not readily identifiable in the field are collected and keyed out later with the use of The Jepson Manual of the California Flora and other field guides. The survey occurred within the area determined to be potentially impacted with direct disturbance by the proposed project within the Study Area. This survey documented all occurring species within the habitats surveyed.

The survey was floristic in nature, meaning that all plant taxon encountered during the botanical field survey of the Study Area was identified to the taxonomic level necessary to determine rarity and listing status. The initial (early season) and follow up (mid and late season) field visits were planned to coincide with the blooming period for the listed species assumed to have a potential presence within the Study Area, specifically within the boundaries of the project site and surrounding area. See Appendix B for more information pertaining to the botanical survey associated with this project.

3.2.2 Environmentally Sensitive Habitat Area

Environmentally Sensitive Habitat Areas (ESHA) is a term used in the California Coastal Act Section 30107.5⁵ to describe areas in the coastal zone that are of critical significance to the maintenance of the biological diversity and integrity of coastal resources. These areas may include wetlands, estuaries, lagoons, riparian areas, forests, and other unique or sensitive habitats that provide important ecological functions or support rare, endangered, or threatened species. ESHA is given special protection under the Coastal Act and development within these areas may be subject to additional regulations and restrictions to minimize impacts on the environment.

All aspects of the biological resource and habitat investigation described in this Report assisted in the determination of the presence of ESHA within the Study Area.

3.2.2.1 Wetlands, Soils and Streamside Management Area Determination

Prior to the initial April 28th 2023 biological reconnaissance site visit, the Study Area was assessed for the presence of wetlands utilizing several digital databases and resources including the USFWS National Wetland Inventory (NWI), NRCS Web Soil Survey, USGS topographic maps, and inundation or saturation

⁴ **Specie Status Native Plant Populations and Sensitive Natural Communities:**

file:///C:/Users/Masonslondon/Downloads/2018%20Protocols%2013%20rev1.pdf

⁵ **California Coastal Act Section 30107.5:** https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC§ionNum=30107.5

visible on aerial imagery (Map 5). Data regarding the Study Area's soil type was obtained from the Natural Resource Conservation (NRCS) Service Web Soil Survey (Appendix E).

Since the remote site investigation determined strong likelihood of the presence of wetland habitats within the Study Area, a protocol level wetland delineation occurred prior to the April 28th 2023 site visit investigation, conducted by contracted Wetland Scientist Joe Seney.

The survey was conducted in accordance with the three-parameter method of the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the 2010 Regional Supplement: Western Mountains, Valleys and Coast Region. The US Army Corps of Engineers and California North Coast Regional Water Quality Board regulates wetlands and other waters under section 404 of the Clean Water Act (CWA). The USACE defines "wetlands" as those areas that exhibit hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were determined when at least one of the three parameters were no longer present. In addition, LiDAR derived one-foot and two-foot contours were utilized to delineate potential wetlands, channels, depressions, and associated landforms on the parcel. The field work portion of this delineation was completed in conjunction with the botanical survey and occurred on May 13th, 2023 and July 1st, 2023. A complete Aquatic Resources Delineation Report with a more thorough methodology is provided in Appendix C.

3.2.3 Occurrence of Special-Status Species

Each species derived from the previously mentioned databases were evaluated for their potential of occurrence within the project site by the following criteria:

1. **None:** Species listed as having "none" potential of occurrence are those species for which there is no suitable habitat within the project area (elevation, hydrology, plant community, disturbance regime, etc.)
2. **Low:** Species listed as having a "low" potential of occurrence are those species for which there is no known occurrence of the species within the project area and there is limited or marginal suitable habitat present at the project area.
3. **Moderate:** Species listed as having "moderate" potential of occurrence within the project area are those species for which there is a known record of occurrence within or in the vicinity of the project area and/or there is suitable habitat present within the project area.
4. **High:** Species listed as having "high" potential of occurrence within the project area are those species for which there is a known record of occurrence within or in the vicinity of the project area and/or there is highly suitable habitat present within the project area.
5. **Present:** Species listed as having "present" potential of occurrence within the project area are those species for which the species was observed during the field survey.

Species with a 'low' potential of occurrence were not further investigated for likelihood to exist within or utilize the project site habitat. A rank of low was given to species that most likely will not occur, or are highly unlikely for them to occur, based on their habitat requirements. However, there are always exceptions to natural rules and so these species were not given the rank of 'none' because it is not entirely impossible for them to occur, just extremely unlikely.

3.2.4 Intensity of Impact

Each special-status species within the Study Area was assessed based on intensity of impact based on project scope and proposed mitigation measures are tailored accordingly. Impact intensity is the degree to which a species would be beneficially or adversely affected by an action. Impact intensities are quantified “no effect,” “May affect, bit not likely to adversely affect,” and “May affect, and is likely to adversely affect” and are as defined below:

1. "No effect" indicates that there will be no discernible impacts, either positive or negative, on listed or proposed resources. This means that listed resources will not be affected by the proposed action or its associated environmental consequences.
2. "May affect, but not likely to adversely affect" implies that any potential effects are either beneficial, insignificant, or discountable. Beneficial effects result in positive outcomes without any adverse impact on the species or habitat. Insignificant effects are minimal in size and may be undetectable, unmeasurable, or difficult to evaluate. Discountable effects are highly improbable occurrences.
3. "May affect, and is likely to adversely affect" indicates that listed resources are expected to be exposed to the proposed action or its environmental consequences, and they will likely respond negatively to this exposure.

Section 4 Results and Discussion

4.1 Study Area's Regional Alliances

The Regional Dominant Alliance identified within the Study Area, as per the CALVEG database, is predominately the *Sitka Spruce – Redwood Alliance* with a small portion of *Redwood Alliance* present along the northeastern boundary (Map 4). Other Regional Dominate Alliances, within approximately 1 mile radius surrounding the Study Area, consist of the *Sitka Spruce Alliance*, *Urban-Related Bear Soil*, *Annual Grasses & Forbs, Agriculture*, *North Coastal Scrub Alliance*, *Grain & Crop Agriculture*, *Willow Alliance*, and *Coyote Brush Alliance* (Map 4). The Alliance definitions, sourced from CALVEG, are not based on direct observations or specific species identified during the site visit. They are provided here to describe the predominant habitat types within and around the Study Area that could potentially support special-status plant and animal species.

4.1.1 Sitka Spruce – Redwood Alliance

Sitka Spruce (*Picea sitchensis*) associates with Redwood (*Sequoia sempervirens*) mainly in coastal sites of the Crescent City Plain, Northern, Central and Coastal Franciscan, and Humboldt Flats and Terraces Subsections of the Coast Section. These areas are usually west of the main Redwood forests and east of the Sitka Spruce and Sitka Spruce - Grand Fir forested regions with the exception of the northern Central Franciscan Subsection. Species in this type are typical of coastal coniferous forests of northern California, including Sword Fern (*Polystichum munitum*), Salal (*Gaultheria shallon*), California Rose-Bay (*Rhododendron macrophyllum*), Red Alder (*Alnus rubra*), California Hazelnut (*Corylus cornuta* var. *californica*), Pacific Madrone (*Arbutus menziesii*), and Tanoak (*Lithocarpus densiflorus*). Mapped elevations of these stands are below about 1000 feet (305 m).

4.1.2 Redwood Alliance

Redwood (*Sequoia sempervirens*) occurs on alluvial flats, streamside terraces and colluvial slopes, generally within a narrow coastal strip within eleven subsections of the Coast Section and sparsely within two other subsections. In the northern portions of the Coast Franciscan Subsection, however, the type occupies sites further inland but which are still within the maritime influence. Elevations are typically below 2400 feet (732 m). Old-growth Redwood groves are mostly contained in national parks, state parks, and regional or private preserves. Soils underlying these sites are often a result of sediment deposition from continuous river flooding. Redwood Sorrel (*Oxalis oregana*) and Western Sword Fern (*Polystichum munitum*) are typical understory herbs in undisturbed groves. Other common associates are Pacific Douglas-fir (*Pseudotsuga menziesii*), Red Alder (*Alnus rubra*), Salal (*Gaultheria shallon*), Tanoak (*Lithocarpus densiflorus*), Western Hemlock (*Tsuga heterophylla*), California Hazelnut (*Corylus cornuta* var. *californica*) and California Rose-Bay (*Rhododendron macrophyllum*). The Redwood groves are geographically located in the coastal fog belt and are adjacent to Redwood – Douglas-fir, Sitka Spruce - Redwood, and Sitka Spruce forests.

4.1.3 Sitka Spruce Alliance

Sitka Spruce (*Picea sitchensis*) becomes a dominant conifer along certain fog-influenced coastal and near-coastal stretches of Humboldt and Del Norte Counties within six subsections of the Coast Section. This narrow strip often is underlain by alluvial or sandy stream floodplain deposits and supports wetland

plants such as Red Alder (*Alnus rubra*), Yellow Skunk Cabbage (*Lysichiton americanum*) and Sedges (*Carex spp.*). This spruce mixes with Redwoods (*Sequoia sempervirens*) further inland or on slightly higher ground but where it achieves conifer dominance, it has been mapped at elevations below about 1200 feet (366 m). In Mendocino County, Beach Pine (*Pinus contorta ssp. contorta*) associates with Sitka Spruce on coastal sand dunes in the Fort Bragg Terraces Subsection of this Section. Grand Fir (*Abies grandis*) may be present in Sitka Spruce stands in the Humboldt Bay Flats and Terraces Subsection in Humboldt County. Other common associates of the Sitka Spruce-dominated type include the shrubs Salmonberry (*Rubus spectabilis*), Thimbleberry (*R. parviflorus*), Huckleberry (*Vaccinium spp.*), Salal (*Gaultheria shallon*) and Vine Maple (*Acer circinatum*), forbs such as Western Sword Fern (*Polystichum munitum*), and hardwoods such as Bigleaf Maple (*A. macrophyllum*).

4.1.4 Urban-related Bare Soil

Urban development in California occurs in phases. When land is cleared prior to being paved, this type represents the occurrence of non-vegetated barren ground that is caused by urbanization. This land-use type also represents other mechanically-caused barren ground, such as open quarries or mined areas, barren ground along highways and other areas cleared of vegetation prior to construction. This type often occurs adjacent to managed landscapes in already established urban centers or other paved areas.

4.1.5 Annual Grasses and Forbs Alliance

Small areas of dry grasslands are found scattered at moderately low elevations in the western Klamath Mountains, especially on privately owned lands and in the western Trinity Alps area. In the Ranges and Coast Sections, these areas become more extensive on private lands scattered throughout the area and intermix with agriculturally managed sites. Species include introduced and native annual grasses such as Brome (*Bromus spp.*), Bluegrass (*Poa spp.*), Wildoats (*Avena spp.*), Fescue (*Vulpia spp.*), Dogtail (*Cynosurus spp.*), Barley (*Hordeum murinum*), Needlegrass (*Nassella spp.*), Oatgrass (*Danthonia spp.*), and a variety of forbs such as Checker Mallow (*Sidalcea spp.*), Brodiaea (*Brodiaea spp.*), Wild Hyacinth (*Dichelostemma spp.*), Yampah (*Perideridia spp.*) and Mariposa Lily (*Calochortus spp.*). Oregon White Oak (*Quercus garryana*) stands are often found adjacent to some upland annual grasslands.

4.1.6 Agriculture

Agricultural land is used primarily for the production of food and fiber. High-altitude imagery indicates agricultural activity by distinctive geometric field and road patterns on the landscape and traces produced by mechanized equipment. Agricultural land uses include forest landscapes such as orchards as well as non-forested land uses such as vineyards and field crops. Land used exclusively for livestock pasture may, however, be mapped as annual grassland in those cases in which land uses are not recognizable.

4.1.7 North Coastal Scrub Alliance

Shrubby coastal areas of northern California having no clear single dominant shrub species are identified in the North Coastal Scrub Alliance. It occurs westward of Redwood (*Sequoia sempervirens*) forests in eleven subsections of the Coast Section, being especially prominent in the Crescent City Plain Subsection. Elevations generally range from sea level to 3600 feet (1098 m). Environmental conditions that separate subsets of this type include proximity to the coast and exposure to winds and salt deposition, depth and texture of soils, topography, and the repeated occurrence of fire. For example, Holland (1986) identifies northern maritime chaparral, northern coastal scrub, northern coastal bluff

scrub, northern dune scrub and other coastal shrub types in the general area of this section. Barbour and Major (1988) discuss northern coastal scrub types with an abundance of either Coyote Brush (*Baccharis pilularis*) or species of lupine such as Yellow Bush Lupine (*Lupinus arboreus*). Lupine types are best developed on level terraces close to coastal bluffs from Santa Cruz to Sonoma Counties. Other shrubs common in this type include Blueblossom (*Ceanothus thyrsiflorus*), Coastal Whitethorn (*C. incanus*), Hairy Manzanita (*Arctostaphylos columbiana*), Coffeeberry (*Rhamnus californica*), Salal (*Gaultheria shallon*), California Huckleberry (*Vaccinium ovatum*), California Blackberry (*Rubus ursinus*), Poison Oak (*Toxicodendron diversilobum*), Wax Myrtle (*Myrica californica*) and shorter forms of California Bay (*Umbellularia californica*). Grasses and forbs such as European Beachgrass (*Ammophila arenaria*), which is often planted for dune stabilization, Western Sword Fern (*Polystichum munitum*) and wetland trees and shrubs such as Red Alder (*Alnus rubra*) and Willows (*Salix spp.*), may be more common towards the northern end of this section.

4.1.8 Grain & Crop Agriculture

Irrigated or dry crop agriculture is usually harvested in rows as edible herbaceous products such as cereals (wheat, sorghum, oats, millet, corn, rye, etc.) and vegetables (squash, celery, beans, peas, etc.) for stock and human uses. Agricultural crop fields are also occasionally planted for both animal forage and to improve nitrogen levels, as with legumes such as alfalfa and sweet 26 clovers. Certain crops are grown for other multiple uses, such as flax and cotton for seed oils (linseed and cottonseed), fibers and medicinal uses, if any.

4.1.9 Willow Alliance

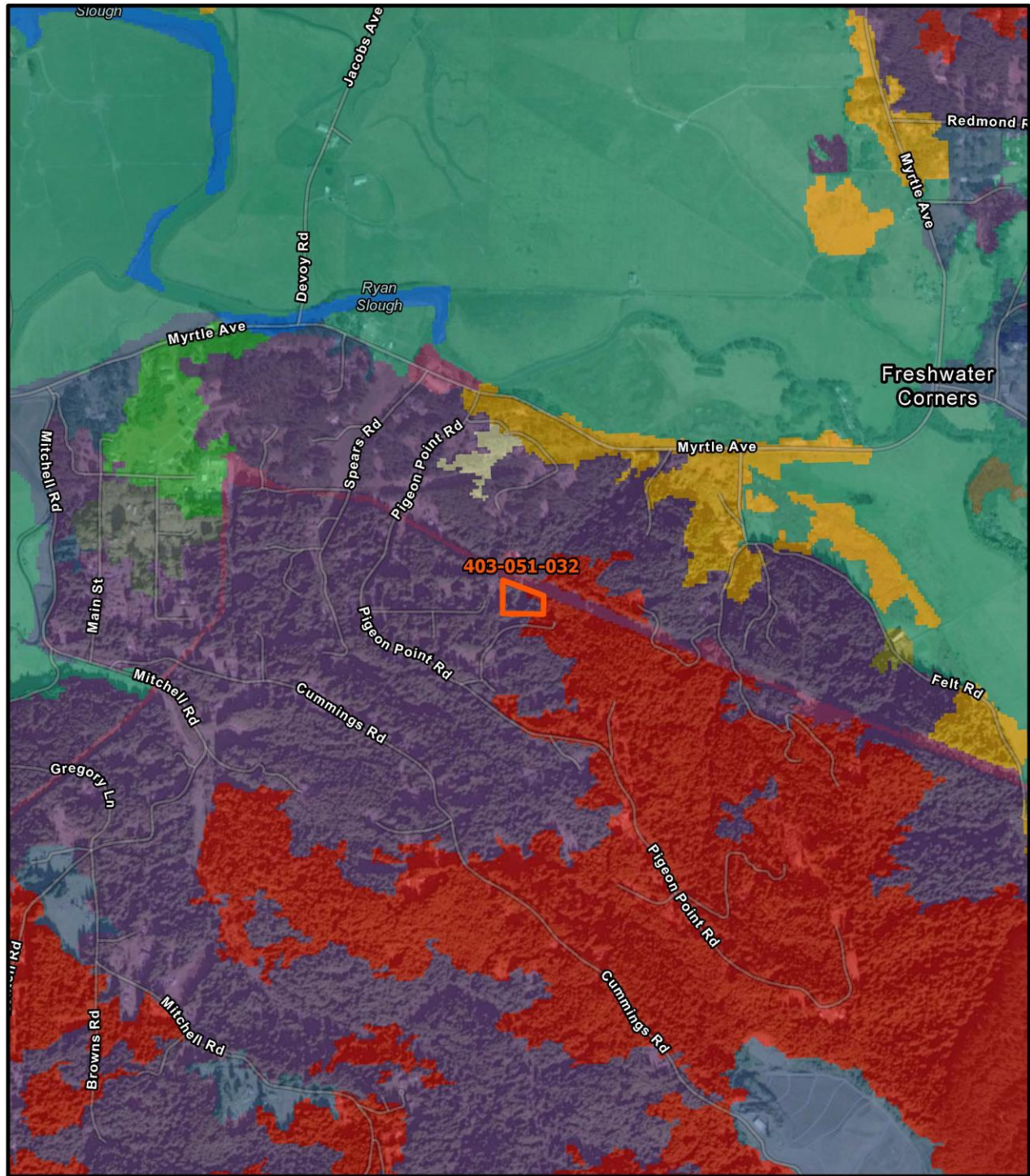
This stringer-like riparian type is dominated by tree-sized Willows of any species (*Salix spp.*) in riparian floodplains, seeps, springs, swamps or dry washes of the Mountains, Coast and Ranges Sections in this area. It has been mapped sparsely but widespread within thirty-one subsections at elevations up to about 3400 feet (1036 m). The more common species include Scouler's (*S. scouleriana*), Arroyo (*S. lasiolepis*), Hooker (*S. hookeriana*), Sitka (*S. sitchensis*), Black (*S. goodingii*), and Red (*S. laevigata*) Willows. Willows dominate these areas to the exclusion of other riparian species but other species such as Cottonwoods (*Populus spp.*), and White or Red Alder (*Alnus rhombifolia*, *A. rubra*) may occur in small amounts. Species of Gooseberry and Currant (*Ribes spp.*), Blackberry and other edible berries (*Rubus spp.*), Wild Rose (*Rosa spp.*) and Poison Oak (*Toxicodendron diversilobum*) also may occur sparsely in this type, but not as obligate hydrophytes. The herbaceous layer is primarily Sedges (*Carex spp.*) and numerous grasses and forbs.

4.1.10 Coyote Brush Alliance

Coyote Brush (*Baccharis pilularis*) may be the main shrub of certain coastal bluffs, slopes, terraces or sand dunes of northern California, increasing in dominance towards the San Francisco Bay area. It also pioneers recently logged sites in the northwest at some distance from the coast. Coyote Brush sites, such as those in the Marin Hills and Valleys and Point Reyes Subsections of the Coast Section, may develop a diversity and moderately dense cover of other shrubs and ferns such as Poison Oak (*Toxicodendron diversilobum*), Coffeeberry (*Rhamnus californica*), Western Sword Fern (*Polystichum munitum*), Bracken (*Pteridium aquilinum*), California Blackberry (*Rubus ursinus*), Blueblossom (*Ceanothus thyrsiflorus*), as well as perennial herbs and grasses such as Purple Needlegrass (*Nassella pulchra*), Tufted Hairgrass (*Deschampsia caespitosa*), California Oatgrass (*Danthonia californica*), Yellow Bush Lupine (*Lupinus*

arboreus) and Dune Lupine (*Lupinus chamissonis*). This alliance has been mapped widely within thirteen subsections of this zone at low elevations. It is associated with coastal trees such as Douglas-fir (*Pseudotsuga menziesii*) and California Bay (*Umbellularia californica*) as well as an abundance of non-native grasses and forbs.





Map 4: CalVeg Alliances Scale: 1:15,562 0 500 1,000 2,000 Feet Source: Arcata South 7.5-Minute USGS Quadrangle		Study Area Regional Dominant Alliances Grain & Crop Agriculture Agriculture Barren Coyote Brush Annual Grasses & Forbs Urban-Related Bear Soil	North Coastal Scrub Willow Alliance Redwood Alliance Sitka Spruce Alliance Sitka Spruce - Redwood Alliance Urban or Developed Rivers & Streams	Naiad Biological Consulting
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Map 4. CalVeg Alliances for Study Area and surrounding area.

4.2 Observed Study Area Habitat and Existing Site Conditions

Both site visits and field surveys occurred on days where the weather conditions were favorable, characterized by partly cloudy skies, calm winds, and an initial temperature of 49°F on April 28th, 2023 and an initial temperature of 53°F on February 13th, 2023 when the survey commenced. Precipitation levels for the 2023 water year, and the 2024 eater year, leading up to February 13th, are displayed below:

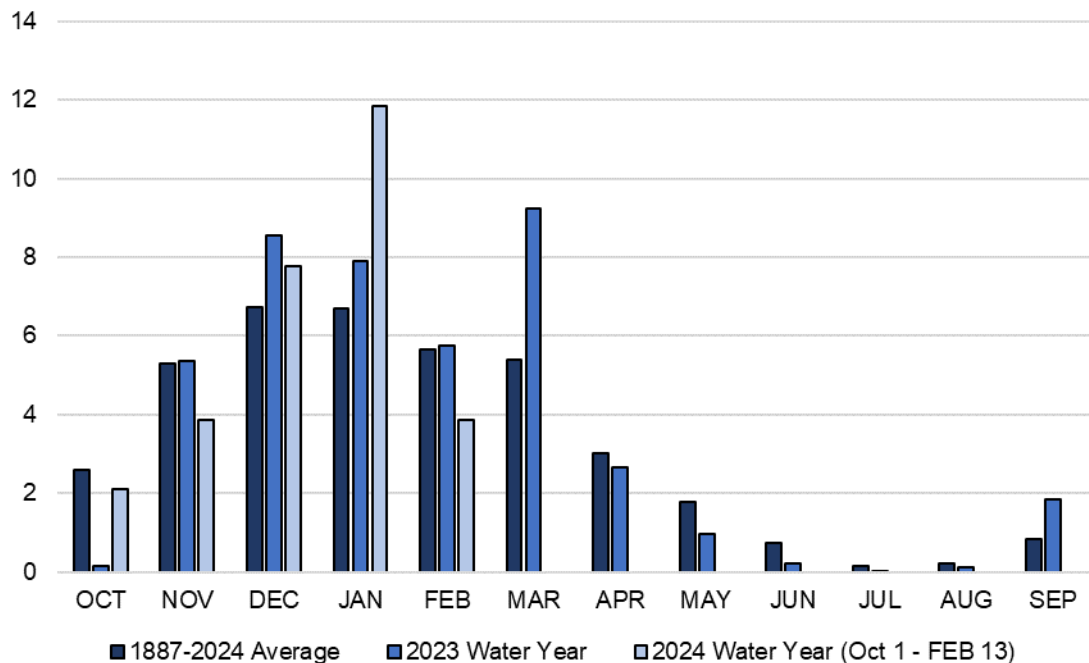


Figure 1. Records of perception from the 2023 water year and the 2024 water year leading up to the site visit (Oct 01 2023 to Feb 13 2024) compared to the average (1887 to 2024) for the same location. Perception data from the Eureka WFO Woody Island Weather Station located 3.75 miles *northwest* of the Study Area (NOAA, 2024). Precipitation displayed in inches.

The increased moisture levels during portions of this period may have influenced the observations made during the site visits and field surveys. It is advisable to consider these potentially altered conditions when planning the project design and implementation.

4.3.1 Study Area Habitat

The habitat within the Study Area can be categorized into three distinct communities. The largest portion of the Study Area is defined by a steep second-growth redwood forest and woodland, co-dominated by Douglas fir (*Pseudotsuga menziesii*) and featuring a sparsely populated understory of sword fern (*Polystichum munitum*), evergreen huckleberry (*Vaccinium ovatum*), red huckleberry (*Vaccinium parvifolium*), California blackberry (*Rubus ursinus*), redwood sorrel (*Oxalis oregana*), and salal (*Gaultheria shallon*) (Photo 1 - 4). Other tree species observed, amongst the dominance of coast redwoods (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*), were grand fir (*Abies grandies*) and Sitka spruce (*Picea sitchensis*). The steep forest floor has a light duff and debris layer, except in areas where recent and past winter storms have caused some fallen trees and branches (Photo 3 & 4).

Aside from the presence of second-growth redwoods within the Study Area, the parcel bears clear signs of historical logging activities, evidenced by the presence of a large cleared and graded site which was likely utilized for a log landing and is the area that has been assessed for project feasibility (Map 2; Photo 5 – 8). This potential project area habitat is a highly altered and disturbed marine terrace. Wetland habitat was identified in the southwestern portion of this cleared flat and are dominated by lady fern (*Athyrium filix-femina*), deer fern (*Struthiopteris spicant*), small-fruited sedge (*Scirpus microcarpus*), and Pacific rush (*Juncus effusus ssp. pacificus*). Refer to Section 4.3.1.1 Wetland Habitats for further information about this habitat feature. Much of the northeast section of this flat assessed for project feasibility is dominated by several invasive species including jubata grass (*Cortaderia jubata*), Scotch broom (*Cytisus scoparius*), and Spanish heather (*Erica lusitanica*). A complete list of species occurring within this habitat can be found in Appendix B: Botanical Report.

East of the disturbed terrace habitat section of the Study Area, there is an ephemeral Class III watercourse with a steep gradient (Map 2; Photo 3, 9 & 10). The seasonal water source for this feature appears to be springs and wet season overland flow with its point source occurring outside of the Study Area.

Notably, the site does not encompass any true oak woodlands, coastal scrub, coastal prairie, dune, or salt marsh habitat types.

4.3.1.1 Wetland Habitats

The biological reconnaissance survey described in this report did not include a protocol-level delineation. Instead, a cautious approach was taken, relying on visual observations, National Wetlands Inventory (NWI) data, hydrological assessment, and vegetation community analysis to evaluate potential wetland features. Federal regulations define wetlands as areas that are regularly inundated or saturated by surface or groundwater, with vegetation adapted to such conditions (33CFR328.3(b)⁶). To classify a site as a jurisdictional wetland, it must meet three criteria under normal circumstances: hydrophytic vegetation, hydric soils, and wetland hydrology. While the USFWS NWI wetland map (Map 5) did not identify significant wetlands or watercourses in the study area, on-site visual observations of the area's vegetation, hydrology, and soils indicated the presence of wetlands and other aquatic habitats.

The findings from Joe Seney's Aquatic Resources Delineation Report reveal the existence of 0.07 acres (3,070 sq ft) of Army Corps of Engineers (ACOE) jurisdictional three-parameter wetland, classified as Palustrine, Emergent, Herbaceous, seasonally saturated (Photo 11 – 13; Map 5; Appendix C). Additionally, 293 ft of Class III channel was mapped, with the water source identified as springs and wet season overland flow (Map 5). Hydrologically, water sources include springs/seeps and wet season overland flow, influenced by low permeability clay and silty clay soils acting as a shallow aquitard. Wetland Hydrology Indicators include groundwater, saturated soil, geomorphic position, and shallow aquitard. Among the seven soil pit locations described in the Report, three exhibited hydric soil indicators, such as Depleted Below Dark Surface or Depleted Matrix. Vegetation in the wetlands includes common rush, lady fern, deer fern, red alder, Sitka spruce, and paniced bulrush. Some soil profiles lacked hydric soil indicators due to soil removal and the use of reddish-orange subsoil for leveling, which typically doesn't exhibit typical hydric soil indicator. This area qualifies as a three-parameter wetland and falls under the jurisdiction of the (ACOE). Furthermore, these features meet the criteria for a wetland according

⁶ Definition of Waters of the United States: <https://www.nap.usace.army.mil/Portals/39/docs/regulatory/regs/33cfr328.pdf>

to the definitions outlined in the Humboldt County General Plan Streamside and Wetland Area Ordinance. Further in-depth information regarding these wetland features, as well as the results of the wetland delineation can be found in Joe Seney's Aquatic Resources Delineation Report in Appendix G.

In response to the identification of wetland features within the Study Area, protective measures have been proposed to safeguard these environmentally sensitive habitats. These measures include the delineation of a buffer zone, as detailed in Section 4.4.1 Criteria for Establishing Buffer Areas and displayed in Map 6, and it is important that these guidelines are adhered to when planning any development activities within the Study Area.

4.3.1.2 Study Area Soils

The soil types within the Study Area were derived from the Web Soil Survey, revealing the prevalence of the Salmoncreek-Tepona-Rootcreek complex with 2 to 15 percent slopes in the western part of the Study Area. Conversely, the area where the project is proposed, encompassing the remainder of the Study Area, is characterized by the Salmoncreek-Tepona-Rootcreek complex with 30 to 50 percent slopes (Map 5).

The soil composition of the Salmoncreek-Tepona-Rootcreek complex, characterized by 2 to 15 percent slopes has primary components including Salmoncreek and similar soils (35 %), Tepona and similar soils (25 %), Rootcreek and similar soils (25 %), and other minor components (15 %). The Salmoncreek soil exhibits a convex and linear shape on interfluves with a parent material of residuum weathered from siltstone. It features a silt loam profile with poorly drained drainage class. The Tepona soil, found on terraces and hillslopes, has a linear and convex shape with marine deposits as the parent material. It consists of very fine sandy loam and is moderately well drained. Lastly, the Rootcreek soil, located on mountains, has a concave shape derived from colluvium. The soil profile includes silt loam and clay loam with moderately well-drained characteristics.

The portion of the Study Area, where the project is proposed to occur, is characterized by the Salmoncreek-Tepona-Rootcreek complex with 30 to 50 percent slopes, which presents a diverse soil composition. The primary components include Salmoncreek and similar soils (32 %), Tepona and similar soils (30 %), Rootcreek and similar soils (28 %), and minor components (10 %). Situated at elevations ranging from 80 to 1,070 feet, this area experiences a mean annual precipitation of 41 to 50 inches, a mean annual air temperature of 50 to 55 degrees F, and a frost-free period lasting 275 to 330 days. Salmoncreek soil dominates hillslopes, exhibiting a linear and convex shape with a parent material of colluvium derived from siltstone. The soil profile consists of silt loam and silty clay loam, with poorly drained characteristics. Tepona soil, found on terraces, features a convex shape and marine deposits as the parent material. The soil profile comprises fine sandy loam and is moderately well drained. Rootcreek soil on mountain slopes has a linear and concave shape, derived from colluvium. The soil profile includes silt loam and clay loam with moderately well-drained characteristics. Minor components such as Cannonball and Scoutcamp contribute 5 % each, with distinct landform settings and hydric soil ratings.

This comprehensive overview provides insights into the soil composition of the Study Area, crucial for land use planning and conservation efforts. Complete soil reports for both soil units are available in Appendix E.



Soil Map Unit Key

397: Salmoncreek Tepona-Rootcreek complex, 2 to 15% slopes

399: Salmoncreek Tepona-Rootcreek complex, 30 to 50% slopes

<p>Map 5: NWI and NRCS Soils</p> <p>Scale: 1:2,000</p> <p>0 100 200 400 Feet</p> <p>Source: Arcata South 7.5-Minute USGS Quadrangle</p>		<p>Wetland</p> <p>Class III Watercourse</p> <p>NRCS Web Soil Survey</p> <p>Soil Map Units Within Study Area</p> <p>No USFS National Wetlands Inventory (NWI) within Study Area</p>	<p>Naiad Biological Consulting</p>
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Map 5. Study Area wetlands, watercourse, and Soil Map Units. No wetlands or watercourses remotely identified by the NWI.

4.4 Environmentally Sensitive Habitat Area

The comprehensive site investigation, complemented by aerial imagery and cross-referencing with the Botanical Survey Report and Aquatic Resources Delineation, has facilitated the identification of Environmentally Sensitive Habitat Areas (ESHAs) within the Study Area. In addition to previously mentioned wetlands and watercourses, notable ESHAs include the Redwood Forest and Woodland Alliance (G3, S3, CDFW Sensitive). While the majority of the Study Area is characterized by second-growth redwood forests, including no remnants of old-growth trees and occasional grand fir, Douglas fir, and Sitka spruce, the portion of the Study Area where the proposed project is slated has undergone clearing and grading, resulting in an area free of trees and dominated by invasive and nonnative species. It's worth noting that alliances with an S rank of 1-3 are considered sensitive in California, as are any alliances or associations included on the CDFW Vegetation Classification and Mapping Program (VegCAMP) list of Sensitive Natural Vegetation Communities, and may qualify as ESHAs according to California Coastal Commission guidelines, though they are not locally rare and are widespread in the region. The habitat quality is compromised due to past land practices, proximity to residential areas, and the prevalence of nonnative species, leading to reduced biodiversity and habitat degradation.

While the Redwood Forest and Woodland Alliance may not be significantly impacted by the proposed project, the location of the wetland features within the graded flat have the potential to be impacted by project related activities if not adequately protected. Consequently, establishing a buffer area is imperative to safeguard both the wetland and watercourse features identified in the Study Area.

4.4.1 Criteria for Establishing Buffer Areas

A buffer area is a crucial open space between development and ESHAs, aiming to prevent significant degradation of the habitat (as mandated by Coastal Act Section 30240⁷). Only specific developments, such as access paths and protective fences, are permitted within this area, provided they have either positive effects or no substantial adverse impacts on the habitat. The buffer area itself is distinct from the habitat area but acts as a protective barrier against adverse environmental effects resulting from development. The width of the buffer area, determined by analysis, should be a minimum of 100 feet for small projects on existing lots, unless the applicant proves this width is unnecessary. Larger projects with increased human impacts, like subdivisions, may necessitate a wider buffer area, and the appropriate width varies based on analysis standards. For wetlands, measurement starts from the landward edge, while for streams or rivers, it is from the landward edge of riparian vegetation or the top edge of the bank. Determining the buffer area's width may require maps and supplemental information, and standards for this determination include specific guidelines.

Due to the preexisting alteration of the Study Area and the location of the wetland feature within a previously disturbed and graded habitat, a 50-ft buffer is recommended for both the identified wetland features and the Class III watercourse (Map 6). This buffer size is deemed appropriate considering the dimensions of the graded flat in the Study Area and its ecological suitability for development, given historical land practices and the prevalence of invasive species. Further justification and determinations for this buffer size is outlined below based on the California Coastal Commission's Statewide Interpretive Guidelines and include seven (7) evaluation criteria for the buffer reduction:

⁷ <https://www.coastal.ca.gov/coastact.pdf>

1. **Biological Significance of Adjacent Lands:**

- Consider the functional relationship between proposed development areas and adjacent wetlands, streams, or riparian habitats.
- Assess the habitat requirements of species associated with these areas, focusing on nesting, feeding, breeding, or resting activities.
- Expert input from ecologists, wildlife biologists, ornithologists, or botanists is crucial to determine ecological significance.
- Extend buffer areas from the edge of ecologically significant lands to protect functional relationships.

Determination:

As previously noted, the areas adjacent to the wetland features exist within a previously disturbed, graded terrace that has undergone additional alterations with the addition of gravel fill. The designated development zone is situated north of the wetland features and west of the Class III watercourse, representing the most significantly disturbed and altered section within the Study Area. A recommended 50-foot buffer from these features is expected to provide a protective zone for potential species inhabiting these ESHAs, considering the existing disturbance in the surrounding habitat. Additionally, the landowner can enhance the habitat within and beyond the buffer by eliminating invasive and nonnative plant species, restoring the habitat, and incorporating native species into residential gardens to promote biodiversity and support ecological health. Moreover, preconstruction surveys will be conducted for all development activities to further minimize any potential disturbance to species utilizing these ESHAs during project implementation.

2. **Sensitivity of Species to Disturbance:**

- Determine buffer width based on the distance required to prevent significant disturbance to the most sensitive plant and animal species.
- Assess the habitat needs of both resident and migratory fish and wildlife.
- Evaluate short-term and long-term adaptability of species to human-induced disturbances.

Determination:

The proposed project ensures no disturbance to sensitive plant species, as confirmed by the Botanical Survey Report for the Study Area (Appendix XX), which identified the absence of such species within the Study Area. The development is limited to a specific area—50 feet north of the wetland features and 50 feet west of the Class III watercourse—which has a habitat characterized by prior disturbance, clearance, and an abundance of invasive plant species, devoid of tree cover. The area with a higher potential for supporting sensitive animal species, occurring outside of the graded flat, will remain unaffected by direct impacts. Considering the wetland's size and quality, it is unlikely to attract migratory birds specifically to utilize this feature. The Class III watercourse, being of this classification, does not serve as a habitat for migratory fish, and direct utilization of these

habitat features by migratory species is not anticipated. Short-term indirect impacts will be prevented through preconstruction surveys, while long-term effects will be addressed by removing invasive species and reintroducing native plants to enhance biodiversity, fostering species adaptability, and minimizing human-induced disturbances.

3. Susceptibility of Parcel to Erosion:

- Assess slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel.
- Determine the potential for erosion and establish a buffer sufficient to intercept additional eroded material from proposed development.

Determination:

Erosion and runoff resulting from construction activities associated with the proposed project, situated 50 feet beyond the ESHAs, must be addressed during the project development planning phase. To mitigate long-term impacts, a stormwater management plan should be formulated, ensuring runoff is directed away from these habitat areas. If any runoff reaches these areas, it should be designed to benefit these features. During the construction phase, silt fencing will be installed to prevent point source runoff from affecting these features in the short term. Implementing berm features, outside of the 50-foot buffer, as part of the site development can further enhance erosion and runoff control, ensuring that runoff is directed away from these habitats. Additionally, within 50 feet of either feature, no impervious surfaces will be created. As mentioned earlier, the presence of invasive species will be actively managed, and the introduction of native species will be encouraged to enhance vegetation cover quality on the parcel.

4. Use of Natural Topographic Features:

- Prioritize the use of hills and bluffs adjacent to habitat areas as buffers.
- Developments should be situated on hillsides away from environmentally sensitive habitat areas.
- Avoid development on bluff faces and include them in the buffer area.

Determination:

This criterion is not relevant to the project given the specific characteristics of the Study Area and the only feasible location for the proposed project to occur based on slope and access. The project is strategically proposed to occur in the most environmentally suitable area, considering past habitat alterations, topography, and the prevalence of invasive species. The proposed 50-foot buffer for the ESHAs in the Study Area consider the influence of natural topographic features.

5. Use of Existing Cultural Features:

- Utilize existing cultural features (roads, dikes, etc.) as buffers where feasible.
- Developments should be located on the side of roads or other features away from environmentally sensitive habitat areas.

Determination:

This criterion does not apply to the project as there are no existing cultural features, apart from the previously graded flat where the wetland features are already located. The proposed project aims to avoid any additional degradation or disturbance to these ESHAs beyond what has been previously impacted by historical land use practices. The development is planned away from sensitive habitat features with a 50-foot buffer that will be restored to promote improved ecological function.

6. Lot Configuration and Location of Existing Development:

- For largely built-out areas, maintain the uniform distance between existing buildings and habitat areas for new development.
- If the existing distance is less than 100 feet, additional mitigation measures should be implemented.
- In largely undeveloped areas, implement the widest and most protective buffer area feasible.

Determination:

Considering the layout of the parcel and the extent of disturbance in certain areas, the proposed project is strategically situated in a section that has been previously disturbed to the extent that it no longer resembles a natural feature. To further mitigate the impact, invasive species will be removed, and native plants will be landscaped to enhance ecological function. A vegetative buffer along the 50-foot setback will be established to serve as a sound barrier and visual screen. Additional mitigation measures involve pre-construction surveys targeting specific species, will be implemented to avoid both direct and indirect disturbances.

7. Type and Scale of Development Proposed:

- Assess the compatibility of proposed development types and scales with adjacent habitat areas.
- Consider factors such as domestic pets, human use, and vandalism.
- Tailor buffer area requirements based on a case-by-case evaluation, accounting for adjacent land use, resources, and development density.

Determination:

The Study Area comprises seep and dense forested areas with a significant open clearing which has been designated for the proposed project. Anticipated impact on this already disturbed habitat is deemed minimal, owing to historical land practices and the presence of neighboring residential units surrounding the Study Area. A 50-foot buffer from the ESHAs is deemed adequate to safeguard these habitats, considering the scale and type of development proposed.



Map 6: Aquatic Resources (ESHAs)	
Scale: 1:2,000	
0 100 200 400 Feet	
Source: Arcata South 7.5-Minute USGS Quadrangle	
Naiad Biological Consulting	

Map 6. The Environmentally Sensitive Habitat Areas with their proposed 50 foot buffers.

4.5 Special-Status Species

The special-status species recorded to occur within the Arcata South 7.5-minute USGS quadrangles, and the eight (8) adjacent quadrangles, resulted in seventy-eight (78) special-status animal species (5 amphibians, 33 birds, 17 fishes, 5 insects, 14 mammals, 3 mollusks, 1 reptile) (Appendix A: Table 2), sixty (60) special-status plant species (2 bryophytes, 3 lichens, 55 vascular) (Appendix B: Botanical Report – Table 1) and three (3) mapped special-status habitat communities (Northern Coastal Salt Marsh, Northern Foredune Grassland, and Upland Douglas Fir Forest).

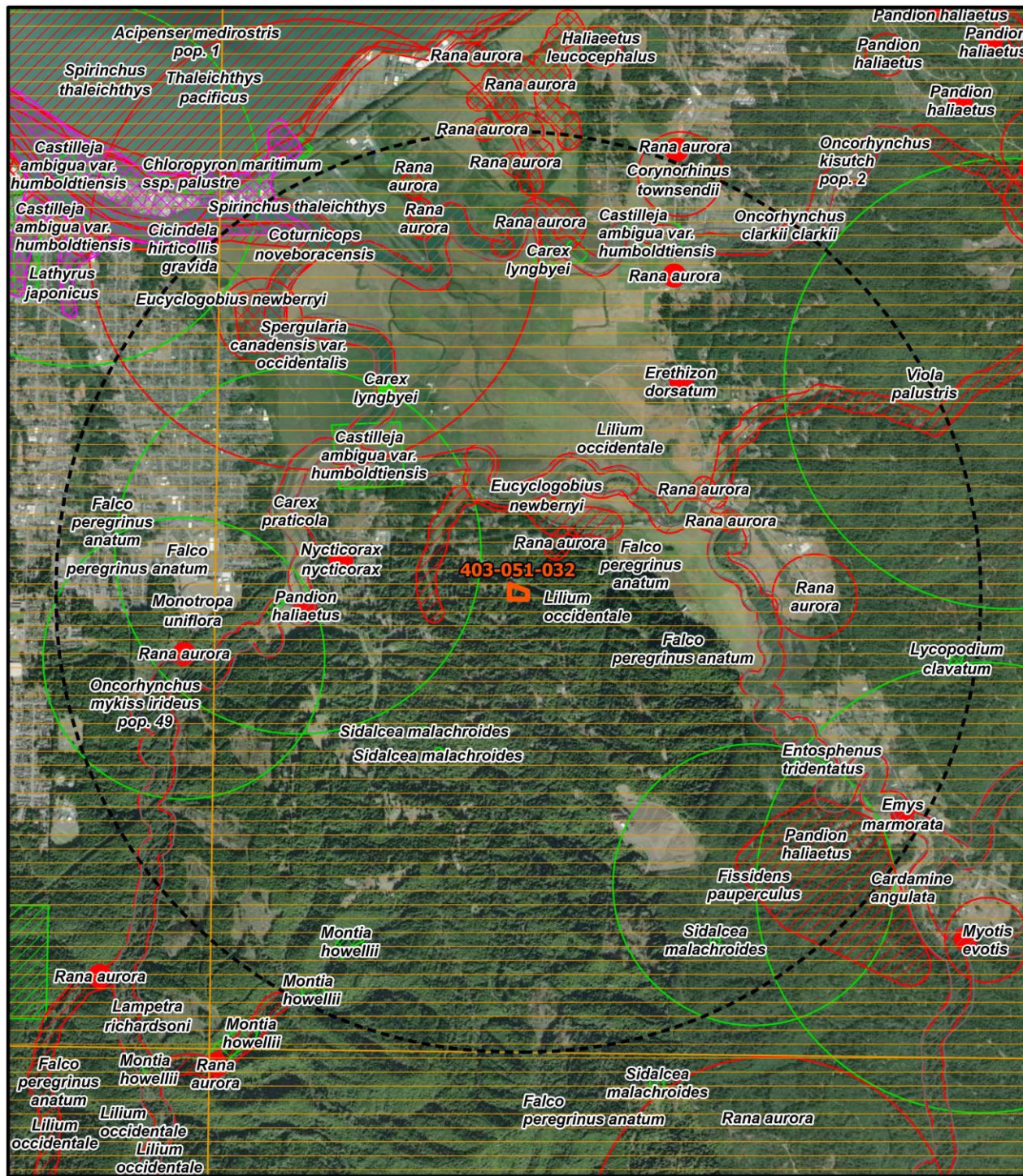
The USFWS IPaC search of the Study Area identified eight (8) threatened, proposed threatened, endangered, and/or candidate species and seventeen (17) migratory birds (Appendix C: Table 4 & 5). Birds listed under the IPaC migratory birds list are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in a particular project location. Some of these species overlap with the species generated from the CNDDDB BIOS query.

The focused search rendered twenty-nine (29) special-status plant, animal, and community recorded occurrences within 2-miles of the Study Area (Table 1; Map 7).

Table 1. The 25 special-status species with known occurrences within 2-miles of the Study Area. CDFW Status, Global Rank, State Rank and Rare Plant Rank definitions provided in Appendix A & B.

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	CDFW Status	Rare Plant Rank
Bryophytes							
<i>Fissidens pauperculus</i>	minute pocket moss	None	None	G3?	S2	-	1B.2
Dicots							
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	None	None	G4T2	S2	-	1B.2
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	None	None	G3	S3	-	4.2
<i>Montia howellii</i>	Howell's montia	None	None	G3G4	S2	-	2B.2
<i>Lathyrus japonicus</i>	seaside pea	None	None	G5	S2	-	2B.1
<i>Viola palustris</i>	alpine marsh violet	None	None	G5	S1S2	-	2B.2
<i>Cardamine angulata</i>	seaside bittercress	None	None	G4G5	S3	-	2B.1
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	western sand-spurrey	None	None	G5T4	S1	-	2B.1
<i>Monotropa uniflora</i>	ghost-pipe	None	None	G5	S2	-	2B.2
Monocots							
<i>Lilium occidentale</i>	western lily	Endangered	Endangered	G1G2	S1	-	1B.1
<i>Carex praticola</i>	northern meadow sedge	None	None	G5	S2	-	2B.2
<i>Carex lyngbyei</i>	Lyngbye's sedge	None	None	G5	S3	-	2B.2
Insects							
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	None	None	G5T2	S2	-	-
Amphibians							
<i>Rana aurora</i>	northern red-legged frog	None	None	G4	S3	SSC	-

Birds							
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	G4T4	S3S4	-	-
<i>Pandion haliaetus</i>	osprey	None	None	G5	S4	WL	-
<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	G5	S4	-	-
<i>Coturnicops noveboracensis</i>	yellow rail	None	None	G4	S2	SSC	-
Fishes							
<i>Oncorhynchus mykiss irideus pop. 49</i>	steelhead - northern California DPS winter-run	Threatened	None	G5T3Q	S3	-	-
<i>Oncorhynchus clarkii clarkii</i>	coast cutthroat trout	None	None	G5T4	S3	SSC	-
<i>Spirinchus thaleichthys</i>	longfin smelt	Proposed Endangered	Threatened	G5	S1	-	-
<i>Eucyclogobius newberryi</i>	tidewater goby	Endangered	None	G3	S3	-	-
<i>Lampetra richardsoni</i>	western brook lamprey	None	None	G4G5	S3S4	SSC	-
<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	G4	S3	SSC	-
<i>Oncorhynchus kisutch pop. 2</i>	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G5T2Q	S2	-	-
Mammals							
<i>Erethizon dorsatum</i>	North American porcupine	None	None	G5	S3	-	-
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	G4	S2	SSC	-
Reptiles							
<i>Emys marmorata</i>	western pond turtle	Proposed Threatened	None	G3G4	S3	SSC	-
Communities							
-	Northern Coastal Salt Marsh	None	None	G3	S3.2	-	-



Map 7: CNDDDB Special Status Species

Scale: 1:35,113

0 1,500 3,000 6,000 Feet

Source: Arcata South 7.5-Minute USGS Quadrangle

Study Area	Animal (specific)
2 Mile Buffer	Animal (non-specific)
CNDDDB Symbology	Animal (circular)
Plant (80m)	Terrestrial Comm. (specific)
Plant (specific)	Multiple (80m)
Plant (non-specific)	Multiple (non-specific)
Plant (circular)	Multiple (circular)
Animal (80m)	Sensitive EO's (Commercial only)

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Map 7. Special-status species occurrences within 2-miles of the Study Area

4.5.1 Special-Status Plant Species and Communities

4.5.1.1 Definitions

Special-status plants include taxa that are listed under the Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA) in addition to plants which meet the definition of rare or endangered under the California Environmental Quality Act (CEQA). CDFW recommends that plants on California Rare Plant Ranks (CRPR) Lists 1A (presumed extinct or extirpated), 1B (rare, threatened, or endangered in California and elsewhere), 2A (presumed extirpated) and 2B (rare, threatened, or endangered in California but more common elsewhere), or other species that warrant consideration based on local or biological significance, be addressed during California Environmental Quality Act (CEQA) review of proposed projects. Plants of rank 3 and 4, which are under review and watch lists respectively, are addressed by Naiad Biological Consulting, and may warrant consideration under CEQA if potential or cumulative impacts to the plant exist.

CDFW's natural community rarity rankings follow NatureServe's 2012 NatureServe Conservation Status (NSCS) Assessment: Methodology for Assigning Ranks, in which all alliances are listed with a global (G) and (S) rank. NSCS are those natural communities that are ranked S1 to S3 (CDFW, 2020), where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

4.5.1.2 Special-Status Plant Species and Communities Observed

During the protocol-level botanical survey, all encountered habitats were systematically evaluated for their potential to support specific species. However, it's important to note that a uniform level of effort was not applied across the entire Study Area to survey for special-status plant species. Surveys were primarily focused on areas earmarked for development operations and associated road systems, with attention given to locations likely to harbor rare plant species or be affected by construction activities, such as existing roads, new road construction sites, forest openings, springs, and watercourses.

A thorough assessment of species listed in the CNDDDB was conducted to ascertain their likelihood of occurrence within the Study Area, covering both potential project sites and adjacent habitats. A total of 86 plant taxa were observed, with approximately 22% classified as invasive by the Cal-IPC. The Cal-IPC rank system categorizes invasive plant species into four categories based on their potential impact on California's natural ecosystems: "Highly invasive," "Moderately invasive," "Limited invasive," and "Not invasive."

The protocol-level botanical survey revealed no presence of CRPR 1 or 2 plants within the surveyed portions of the Study Area. For a comprehensive list of observed plant species, please refer to the species table in Appendix B. Consequently, further botanical surveys within the project site boundaries before initiating ground-disturbing activities are not recommended.

No special-status species were identified within the project area based on survey results. The development and utilization of the project area will adhere to the recommendations outlined in Section 5.1.3 and implement Best Management Practices (BMPs). Thus, it is anticipated that the project will have no significant future impacts on the surrounding vegetative environment or floristic biological resources.

4.6 Special-Status Animals Species

A comprehensive reconnaissance survey was conducted to assess the presence and utilization of special-status animal species within the majority of the habitat features within the Study Area (Map 3). This survey specifically included species derived from the CNDDDB and IPaC list and focused on their potential occurrence in both the proposed project area and the surrounding habitats. It is crucial to recognize that any disturbances to these habitats can directly or indirectly impact the special-status animal species residing within them, potentially resulting in take or incidental take of these species. Detailed information regarding the species and their associated habitats can be found in Appendix A: Table 2 – Special-Status Animal Species).

No special-status wildlife species were observed during the initial reconnaissance site survey. The species audibly observed during this initial survey include mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), black phoebe (*Sayornis nigricans*) and common raven (*Corvus corax*). Species listed here do not represent a protocol-level survey for wildlife.

4.6.1 Special-Status Animals Species with Potential for Occurrence

Sixteen (16) listed animal species have occurrences reported which have been buffered to occur within 2-miles of the Study Area (Appendix C: Map 6) and are described below. None of these occurrences were recorded to occur specifically within the Study Area, but due to a majority of the accuracy of these observations being “non-specific”, or within 2/5, 1, or 5 miles, the Study Area has been included in, or near, these occurrence buffers. Other occurrences of special-status species have been reported within a close proximity to the Study Area as well as other species generated from the CNDDDB query which may also utilize the Study Area for a portion of their life history and therefore were analyzed in terms of potential disturbance from project activities (Appendix A: Table 2 - Potential for Occurrence & Intensity of Impact). Section 5.1.3 Recommendations outline mitigation measures aimed at preventing harm or disturbance (take) to all species that have the potential to occur within the Study Area and may be impacted or disturbed due to project development and post-development utilization. These measures have been designed to address the specific needs and vulnerabilities of these species and are intended to minimize any potential negative effects.

4.6.1.1 Insects

The *Cicindela hirticollis gravida*, commonly known as the sandy beach tiger beetle, inhabits sandy beaches and shores across various regions of North America. These striking beetles are known for their vibrant colors and swift movements, darting across the sand in search of prey. Sandy beaches provide the ideal habitat for these beetles, offering ample sunlight, loose substrate for burrowing, and access to prey such as small invertebrates. Despite their preference for sandy environments, the sandy beach tiger beetle faces threats from habitat destruction and disturbance caused by human activities such as beach development and recreational use. There is no potential for this species to occur within the Study Area due to a lack of suitable habitat and therefore the intensity of impact associated with the proposed project for this species is no effect.

4.6.1.2 Amphibians

Rana aurora, the Northern Red-legged Frog, is an amphibian species found in various aquatic habitats, including ponds, wetlands, and streams, with a preference for shallow, slow-moving waters with ample

vegetation for cover and breeding. It is known for its distinctive red or orange coloring on its legs. This frog plays a crucial role in aquatic ecosystems by serving as both predator and prey. The likelihood of this species being present within the Study Area is moderate to high, primarily due to the presence of wetland features. Additionally, as this species can navigate upland areas, the project's impact on it may affect, but not likely to adversely affect, though not expected to be detrimental. To mitigate any adverse effects, preconstruction surveys for this species are recommended before any ground disturbance takes place

4.6.1.3 Birds

Falco peregrinus anatum, the American Peregrine Falcon, is a bird of prey species known for its remarkable speed and hunting abilities. Once listed as endangered, it has made a successful recovery. These falcons primarily inhabit cliffs and open landscapes and play a vital role in controlling bird populations. Due to the specific habitat requirements of this species, there is no potential for its presence within the Study Area. Consequently, the intensity of impact associated with the proposed project on this species is deemed "no effect." While two occurrence reports of this species encompass the entire Study Area and the Arcata South USGS quad, the details regarding the occurrence location are deemed sensitive and suppressed. Consequently, the accuracy rating for this occurrence is classified as non-specific. (Map 7; Appendix D: Occurrence Report 1 & 2). Furthermore, the occurrence reports describe sightings of these species in old-growth redwood snags, surrounded by logging land. Considering that both occurrences were associated with the Green Diamond Logging Company and Humboldt Redwood Logging Company, it is probable that these sightings occurred on timber logging land rather than in proximity to the Study Area. Given the absence of old-growth snags or trees within the Study Area and the lack of other suitable habitats for this species to nest or forage in the vicinity, the project is not expected to impact them.

The *Pandion haliaetus*, commonly known as the osprey, is a raptor species known for its distinctive hunting behavior and habitat preferences. These birds of prey are often found near bodies of water, including coastlines, rivers, lakes, and marshes, where they primarily feed on fish. Ospreys typically build their nests on elevated structures such as tall trees, cliffs, or man-made platforms, providing them with a clear vantage point for hunting and protecting their young. Their nests are large, constructed of sticks and other materials, and are often reused and added to year after year. Ospreys are highly adaptable and can inhabit a range of environments, from pristine wilderness areas to urban waterfronts. Their presence serves as an indicator of healthy aquatic ecosystems and abundant fish populations. Given the habitat requirements for this species, there is no potential for this species to occur within the Study Area and therefore the intensity of impact associated with the proposed project for this species is no effect.

The *Nycticorax nycticorax*, commonly known as the black-crowned night heron, is a distinctive and widespread wading bird species found in various wetland habitats across the globe. These nocturnal herons are characterized by their short, stocky stature, black crown and back, gray wings, and red eyes. They inhabit a wide range of freshwater and saltwater habitats, including marshes, swamps, ponds, lakes, estuaries, and coastal areas. Black-crowned night herons are skilled hunters, preying on fish, crustaceans, amphibians, insects, and small mammals. They are particularly well-adapted to foraging in low light conditions, using their keen eyesight and stealthy approach to capture prey. During the day, these herons typically roost in dense vegetation or in the branches of trees near their foraging areas. Their nesting sites are often located in colonies known as heronries, situated in tall trees or shrubs near

water bodies. While this species typically thrives in wetland habitats, the wetland features present within the Study Area lack the necessary habitat characteristics required to support this species. Given these habitat requirements for this species, there is no potential for this species to occur within the Study Area and therefore the intensity of impact associated with the proposed project for this species is no effect.

The *Coturnicops noveboracensis*, commonly known as the yellow rail, is a secretive marsh bird primarily found in wetland habitats across North America. These elusive birds prefer densely vegetated marshes with tall grasses, sedges, and cattails, providing them with suitable cover for nesting and foraging. Yellow rails are most active during the night, foraging for small invertebrates and seeds in the dense undergrowth of their marsh habitats. Due to their cryptic nature and preference for dense vegetation, yellow rails can be challenging to observe, often relying on their distinct calls for identification. While this species typically thrives in wetland habitats, the wetland features present within the Study Area lack the necessary habitat characteristics required to support this species. Given the habitat requirements for this species, there is no potential for this species to occur within the Study Area and therefore the intensity of impact associated with the proposed project for this species is no effect.

4.6.1.4 Fishes

The *Oncorhynchus mykiss irideus*, or steelhead trout, specifically the northern California Distinct Population Segment (DPS) winter-run, is a critically important species within the aquatic ecosystems of northern California. These steelhead are anadromous, meaning they migrate from freshwater streams to the ocean and back again to spawn. Their habitat includes cold, clear streams and rivers with gravel bottoms, where they spawn in the winter months. The fry then migrates to the ocean, where they grow and mature before returning to freshwater to spawn. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

Oncorhynchus clarkii clarkii, the coast cutthroat trout, is a fish species inhabiting freshwater streams and rivers along the coast. It is known for its distinctive red to orange slash mark on its throat. Coast Cutthroat Trout are ecologically important as both predators and prey in aquatic ecosystems. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

Spirinchus thaleichthys, the longfin smelt, is a fish species found in coastal marine environments, generally inhabiting estuaries, and coastal lakes. It is characterized by its elongated fins and slender body. Longfin Smelts play a role in marine food webs and are sensitive to changes in water quality. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

Eucyclogobius newberryi, commonly known as the tidewater goby, is a small, estuarine fish species endemic to California, typically found in coastal lagoons, estuaries, and marshes with brackish or freshwater input. These habitats are characterized by shallow, slow-moving waters with sandy or muddy substrates and dense vegetation, providing essential breeding, feeding, and sheltering grounds for the goby. Tidewater gobies are known for their ability to tolerate a wide range of salinities and are often found in areas influenced by tidal fluctuations. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

Lampetra richardsoni, commonly known as the western brook lamprey, is a primitive, jawless fish species found in freshwater habitats throughout the western United States. These lampreys typically inhabit cool, clear streams and rivers with sandy or gravelly bottoms, where they spawn and complete their life cycle. They are often associated with riffles and pools, where they use their specialized mouthparts to attach to rocks and feed on organic matter. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

The Pacific lamprey (*Entosphenus tridentatus*) is an anadromous fish species native to the Pacific coast of North America, ranging from Alaska to California. These unique creatures have a distinctive cylindrical body with a sucker-like mouth adorned with sharp teeth. Pacific lampreys play a crucial role in freshwater and marine ecosystems as both predators and prey, feeding on smaller fish and invertebrates while serving as a food source for larger predators such as birds, mammals, and other fish species. They typically inhabit rivers, streams, and estuaries, where they spawn in freshwater and migrate to the ocean to feed and grow. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

Oncorhynchus kisutch, commonly known as coho salmon, specifically population 2 belonging to the southern Oregon/northern California Evolutionarily Significant Unit (ESU), is a vital component of freshwater and marine ecosystems along the Pacific coast. These anadromous fish play a crucial ecological role as both predators and prey, contributing to nutrient cycling and supporting diverse food webs. Coho salmon typically inhabit clear, cold streams and rivers for spawning, with juveniles migrating downstream to estuaries and eventually to the ocean to feed and grow. Their habitat requirements include clean, well-oxygenated water with suitable gravel substrate for spawning and ample food sources. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including fish species. Due to the specific habitat

requirements of this species, there is no likelihood of its occurrence within the Study Area. Consequently, the proposed project is anticipated to have no impact, or no effect, on this species, especially if the BMPs recommended are implemented effectively to mitigate potential offsite impacts such as sediment runoff.

4.6.1.5 Mammals

Erethizon dorsatum, commonly referred to as the North American porcupine, is a herbivorous mammal species found in a variety of habitats, including forests and grasslands. These solitary creatures are often found in areas with dense vegetation and rocky terrain, providing ample cover and protection. Porcupines are adept climbers and are commonly observed in trees, where they feed on bark, leaves, and buds. They typically build their dens in rocky crevices, hollow trees, or underground burrows, providing them with shelter and security from predators. North American porcupines play a role in shaping vegetation through their feeding habits. Considering the habitat requirements of this species, there is a moderate potential for its presence within the Study Area. As a result, the intensity of impact associated with the proposed project for this species is categorized as "may affect but not likely to adversely affect," since it is recommended that preconstruction surveys for this species take place before any ground disturbance occurs.

Corynorhinus townsendii, commonly referred to as the Townsend's big-eared bat, is primarily found in western North America, inhabiting a diverse range of habitats including forests, deserts, and grasslands. These bats prefer roosting in caves, mines, and buildings with crevices and cavities for shelter. They are particularly associated with areas where they can find suitable roosting sites near their foraging grounds, which typically consist of open spaces such as meadows and streams where they can catch flying insects. Townsend's big-eared bats are sensitive to disturbance and habitat loss, making conservation of their roosting sites and foraging areas crucial for their survival. The likelihood of this species occurring within the Study Area is low, primarily due to the absence of suitable habitat. No direct disturbances are anticipated since so trees or buildings that could be considered potential roosting habitat are being removed for this project. Additionally, any potential indirect disturbances resulting from the project's actions are unlikely to be significant, given the Study Area's existing residential surroundings, where ongoing indirect impacts have already occurred. Consequently, the proposed project is anticipated to have no effect on the species.

4.6.1.6 Reptiles

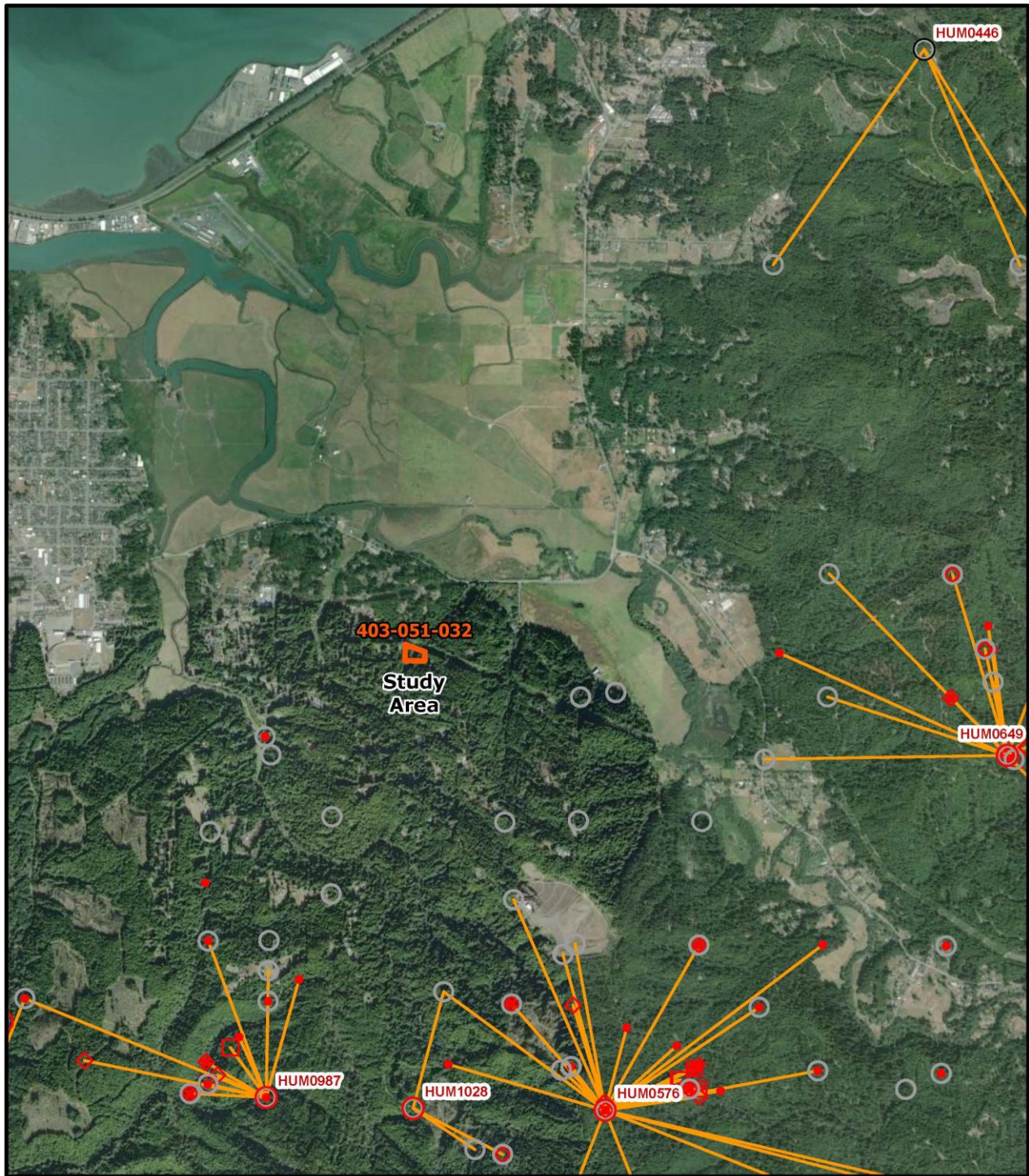
The *Emys marmorata*, commonly known as the western pond turtle, is a freshwater turtle species native to the western United States. These turtles primarily inhabit slow-moving streams, ponds, marshes, and other freshwater habitats with abundant aquatic vegetation and ample basking sites. They prefer areas with shallow water and muddy or sandy substrates where they can forage for aquatic invertebrates, small fish, and plant matter. Western pond turtles also rely on terrestrial habitats adjacent to water bodies for nesting and basking. The only watercourse identified within the Study Area is classified as a Class III watercourse, which lacks the necessary conditions to support aquatic life, including this species. Furthermore, while this species typically thrives in wetland habitats, the wetland features present within the Study Area lack the necessary habitat characteristics required to support this species. Given these habitat requirements for this species, there is no potential for this species to occur within the Study Area and therefore the intensity of impact associated with the proposed project for this species is no effect.

4.6.2 Other Special-Status Animal Species

The nearest northern spotted owl (*Strix occidentalis caurina*) Activity Center (AC), according to the most up to date CNDDDB Spotted Owl Viewer, is 1.82 miles south of the Study Area (HUM1028) (Map 8; Appendix D: Occurrence Report 3). Other ACs occur within a 2.5-mile radius of the Study Area (Map 8; Appendix D: Occurrence Report 3)

The northern spotted owl is known to inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, ranging from sea level up to approximately 2300 meters. They typically nest in tree cavities, snag cavities, or broken tops of large trees. Roost selection is closely linked to thermoregulation, as the species is intolerant of high temperatures. During summer, they seek out dense overhead canopy on north-facing slopes for roosting. The Study Area lacks the preferred forest type for the northern spotted owl since it is comprised of dense, single layered, second growth trees and has no appropriate vegetation or nesting opportunities.

Even though the project will not remove or modify the owl's nesting, roosting, or foraging habitat, the USFWS Northern Spotted Owl Survey protocol suggests applying the protocol to activities that disrupt essential breeding activities or cause harm to the species beyond habitat modification. Noise levels below 70 dB are generally considered non-disturbing unless within very close proximity (<25 m) to an active nest. Given the existing residential buildings and county roads near the project area, there are no anticipated direct or indirect disturbances to the species beyond what already exists. Therefore, no specific project mitigations are recommended concerning the northern spotted owl.



Map 8: Spotted Owl Observations

Scale: 1:32,309

0 1,500 3,000 6,000 Feet

Source: Arcata South 7.5-Minute USGS Quadrangle

Study Area	Other Positive Observation
Spotted Owl Spider Diagram	Negative Observation
Spotted Owl Observations	Activity Center
Nest	Abandoned Activity Center
Young	Not Valid Activity Center
Pair	

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Map 8. Nearest recorded Northern spotted owl observations to the Study Area

4.7 CNDDDB Special-Status Habitat Communities

The CNDDDB BIOS search identified three (3) special-status habitat communities within the 7.5-minute USGS Arcata South quadrangle and adjacent quadrangles. These include the Northern Coastal Salt Marsh, Northern Foredune Grassland, and Upland Douglas Fir Forest. It is important to note that these habitats are also designated as ESHA and require protection.

4.7.1 Northern Coastal Salt Marsh

The Northern Coastal Salt Marsh is a dynamic and diverse ecosystem found along the coastlines of northern regions. Characterized by its unique combination of salt-tolerant plants and tidal influence, this habitat plays a crucial role in coastal ecology and biodiversity. It consists of shallow, brackish waters that are regularly flooded by the tides, creating a mosaic of mudflats, channels, and salt pans. Salt-tolerant vegetation such as cordgrass, pickleweed, and saltgrass thrives in this environment, providing essential habitat and food sources for a variety of wildlife, including birds, fish, and invertebrates. These marshes act as vital nurseries for many commercially important fish species and serve as crucial stopover points for migratory birds. Additionally, they provide valuable ecosystem services such as coastal protection, water filtration, and carbon sequestration.

The Study Area does not contain any Northern Coastal Salt Marsh habitat. As a result, the proposed project is expected to have no impact, or no effect, on this habitat. This expectation holds true, especially if the recommended BMPs are diligently implemented to mitigate potential offsite impacts like sediment runoff.

4.7.2 Northern Foredune Grassland

Northern Foredune Grassland habitat is a unique coastal ecosystem characterized by sandy soils and sparse vegetation. Found along the shoreline, these grasslands are typically dominated by low-growing grasses, herbs, and shrubs that are adapted to the harsh conditions of shifting sands and salt spray. The vegetation in this habitat plays a crucial role in stabilizing the dunes and preventing erosion, making it an important component of coastal ecosystems. Northern Foredune Grasslands provide habitat for a variety of specialized plant and animal species adapted to the dynamic coastal environment. They also serve as important feeding and nesting grounds for shorebirds, insects, and small mammals.

The Study Area does not contain any Northern Foredune Grassland habitat. As a result, the proposed project is expected to have no impact, or no effect, on this habitat.

4.7.3 Upland Douglas Fir Forest

Upland Douglas Fir Forest habitat is characterized by dense stands of Douglas fir trees (*Pseudotsuga menziesii*) interspersed with other coniferous and deciduous species. Typically found in upland areas at higher elevations, this forest type thrives in a variety of soil conditions, ranging from rocky slopes to loamy flats. The canopy of Upland Douglas Fir Forests forms a dense, shaded canopy, creating a cool and moist microclimate beneath. Understory vegetation may include a diverse array of shrubs, ferns, and herbaceous plants adapted to the shaded conditions. These forests provide important habitat for a wide range of wildlife, including birds, mammals, and insects. Species such as deer, elk, and black bears are commonly found in these habitats, utilizing the dense vegetation for cover and foraging. Upland Douglas

Fir Forests also play a critical role in watershed health, regulating water flow, filtering pollutants, and providing stability to slopes.

While Douglas fir trees were noted within the Study Area, they do not dominate the forested habitat type present, thus not qualifying as Upland Douglas Fir Forest. Additionally, the project does not involve the removal of any Douglas fir trees within the habitat. As a result, the proposed project is not expected to impact this habitat in any way.



Section 5 Conclusion

5.1 Potential Impacts and Recommended Mitigation

5.1.1 Potential Direct Impacts

Direct impacts refer to the effects that may occur to the environment due to the direct interaction with the proposed action. The biological assessment conducted in the Study Area concluded that the proposed project will result in direct environmental impacts through the earthwork involved in constructing the proposed project, supporting infrastructure, and associated roadway. However, by implementing Best Management Practices (BMPs) and adhering to other mitigation measures outlined in the construction plan, the project can minimize its impact on the environment and prevent excessive harm to offsite habitats (BIO-1 & BIO-2).

If the recommendations and proposed mitigation measures in Section 5.1.3 are followed, it is possible to mitigate or avoid direct impacts on all special-status species that could currently utilize or are likely to utilize the habitat in the Study Area. These recommendations aim to ensure that the construction activities associated with the project minimize the effects of direct environmental impacts (BIO-3, BIO-4, BIO-5, & BIO-6).

The habitat quality specifically within the proposed project area is populated with many nonnative and invasive species. The proposed actions associated with this project can improve the habitat quality surrounding the proposed infrastructure development by removing invasive species and replanting native vegetation to mimic more of a natural community composition. These improvements to habitat quality will likely aid in the ability for the Study Area to harbor more special-status animal species in the future.

Based on the results of the protocol-level botanical survey, it has been determined that there are no special-status or listed plant species identified within or in the vicinity of the proposed project area. As a result, the proposed project will not involve the removal or harm of any sensitive, listed, or special-status vegetation within or surrounding the Study Area. This ensures that the project will not have adverse effects on listed plant species and minimizes its impact on special-status plants.

As previously mentioned, sensitive natural vegetation communities were identified within the Study Area and within portions of the potential project area. These areas encompass the Redwood Forest and Woodland Alliance (G3, S3, classified as CDFW Sensitive). However, given the human disturbance, presence of invasive species, and history of logging, the stands of Redwood Forest and Woodland Alliance are not considered high quality and should not warrant special protection.

One common impact associated with this project is noise pollution generated by heavy machinery during the construction process, which can affect species' choice of habitat. If noise pollution occurs within a certain proximity to a species' habitat, it can cause displacement. Due to the Study Area's location in a setting near other residences and county roads, it is reasonable to assume that some degree of noise pollution already exists. However, the construction activities are expected to result in increased disturbance levels. Therefore, it is important to follow the mitigation measures outlined in Section 5.1.3 to minimize the impact of noise pollution.

5.1.2 Potential Indirect Impacts

Indirect impacts are consequences that result from an action but may occur at a later time or in a different location, yet are still reasonably predictable. In the context of this project, it is important to assess potential outcomes such as sediment and fuel runoff, which have the potential to affect the environment, especially the nearby wetland and watercourse habitats. To mitigate these indirect impacts and safeguard the environment, it is crucial to effectively implement BMPs and adhere to established setbacks (BIO-1 & BIO-2). By doing so, it is possible to prevent detrimental effects, ensuring that the project does not cause significant harm to the environment, surrounding habitats, or wildlife. This proactive approach contributes to the overall sustainability and preservation of the ecosystem.

5.1.3 Recommendations and Proposed Mitigation Measures

The following recommendations and proposed mitigation measures should be followed and/or taken into consideration through the development of the proposed project and operations:

Mitigation Measure	Mitigation Measure Description
<p>BIO-1 Best Management Practices</p>	<p>During the development and construction of this project BMPs should be used to prevent sediment, fuels or contaminants from entering the surrounding terrestrial and aquatic environments/habitats. Complete lists of BMPs for project specific actions can be found at California State Water Resources Control Board BMP Databases⁸ and Humboldt County: Title III – Land Use and Development - Division 3 - Building Regulations (Ch. 7 § 337-13)⁹. The implementation of specific BMPs will be dependent on the project construction methods and timing and should be explicitly described in the construction plan.</p> <p>Essential BMPs for this project should encompass the installation of erosion control measures such as silt fences, berms, and waddles. These measures are crucial for preventing erosion and the movement of contaminants and sediment beyond the project area and zoned PD area, especially in the case of significant ground disturbances. Additionally, construction equipment fueling and maintenance activities should be centralized at a designated location on the project site, or off-site if feasible, situated at least 200 feet away from any wetland or other aquatic habitat. This designated area should be clear of vegetation, level, and equipped with fuel mats to contain potential spills. Construction activities should be limited to daylight hours. A thorough inspection of equipment for hydraulic fluid, oil, or fuel leaks should be conducted every morning and periodically throughout the day during construction. If any leaks are identified, they must be promptly repaired before any further work is carried out to prevent the release of pollutants into nearby watercourses.</p>

⁸ State Water Resources Control BMP Database: https://www.waterboards.ca.gov/water_issues/programs/stormwater/bmp_database.shtml

⁹ Best Management Practices for Humboldt Co. can be located at: <https://humboldt.county.codes/Code/337-13>

<p>BIO-2 50 ft ESHA (Aquatic Resource) Setback</p>	<p>To safeguard the wetland features and other aquatic habitats within the Study Area, it is imperative to adhere to the 50 ft ESHA Setback, as depicted in Map 6 and described in section 4.4.1 Criteria for Establishing Buffer Areas. This buffer/setback has been established and strategically delineated around identified habitats to serve as a protective measure for Environmentally Sensitive Habitat Areas (ESHAs). Throughout all phases of project planning and implementation, attention should be given to upholding the designated setback to ensure the ongoing preservation and protection of the wetland features and other aquatic resources as well as the plants and animals that utilize them.</p>
<p>BIO-3 Preconstruction visual encounter surveys for amphibians</p>	<p>Considering the presence of perennial water within the Study Area's aquatic resources, and the ability of certain special-status amphibian species to occur within adjacent upland areas, it is recommended that preconstruction visual encounter surveys for amphibians be conducted within a 3-day window preceding the initiation of any construction activities. These surveys are conducted to identify and document the presence of amphibian species that may be impacted by the activities associated with the proposed project construction.</p> <p>The surveys should be conducted by a qualified biologists and/or herpetologists with expertise in the identification of amphibian species and the documentation of their habitat. The surveys are designed to be site-specific and are conducted in accordance with established protocols and methodologies.</p> <p>During the surveys, the qualified biologist should conduct a systematic search of the project area for target amphibian species. They may use a variety of techniques, including visual surveys, dip netting, and trapping, to detect and document the presence of species. In addition to documenting target species, the qualified biologist will also document the overall habitat within the project area, including vegetation cover, water quality, and other key habitat features.</p> <p>If special-status amphibian species are identified during the survey, consultation with CDFW staff will occur and appropriate mitigation measures will be developed and implemented to avoid or minimize impacts to those species. These measures may include adjusting the project design to avoid impacts to sensitive amphibian populations or implementing measures to protect the animals during construction activities such as relocation and the installation of exclusion fencing.</p> <p>As a precautionary measure to avoid take and prevent the inadvertent entry of special-status species onto the project site during construction, it is recommended that a qualified biologist conducts a thorough site survey every morning before the commencement of construction activities. Should special-status amphibian species be identified during these daily clearance surveys, all ongoing work must come to an immediate halt and consultation with CDFW staff will occur to ensure the appropriate measures are taken to meet regulatory compliance.</p>

<p>BIO-4 Preconstruction nesting bird surveys</p>	<p>Prior to any ground disturbance or vegetation clearing, preconstruction nesting bird surveys must be conducted to confirm the absence of bird species within the proposed project area and its potential impact zone within the Study Area. It is advised that a qualified biologist undertakes these surveys within approximately 500 feet of the project area, no later than 14 days prior to construction commencement and prior to any vegetation removal. These surveys should be conducted during the breeding season, typically spanning from February 1 to August 31, to identify active nests and nesting behavior, thereby enabling the avoidance or mitigation of impacts to nesting birds during construction.</p> <p>Experienced biologists proficient in identifying and documenting nesting bird behavior utilize various survey techniques, including visual and auditory surveys as well as nest searches. These methods are designed to minimize disturbances to nesting birds, ensuring no loud noises or excessive light disrupt their nesting activities.</p> <p>In case active nests are discovered during the survey, temporary exclusion zones must be established around them to shield them from construction activities. These zones should be clearly marked and remain in place until the birds have fledged and vacated the nest. Biologists should continually monitor active nests during construction to guarantee that construction activities do not adversely affect them. They should collaborate closely with the construction team to adjust activities as necessary to minimize impacts on nesting birds.</p> <p>If construction activities for the project are halted during the nesting bird season for a period exceeding 14 days, it is imperative to conduct another survey of the area by a qualified biologist prior to resuming work. This additional survey ensures that the construction site remains free of nesting birds before recommencing activities.</p>
<p>BIO-5 Bumble bee surveys</p>	<p>To minimize impacts on special-status bumble bees during project development, it is recommended to clear vegetation during late winter months (January through February) to avoid peak flight season and reduce the potential for floral resources to draw bumble bees into the Project Area. Ground-disturbing activities should commence by early May at the latest to discourage bumble bees from nesting in the project area.</p> <p>To protect the special-status bumble bees, a qualified biologist should be present during ground-disturbing activities from February 1 to October 31, covering the active season. Continuous monitoring is unnecessary after floral resource removal. If the bee is observed during surveys, specific measures should be devised to prevent harm, or consultation with CDFW should be sought to secure an Incidental Take Permit (ITP) if potential harm during the project arises.</p>
<p>BIO-6 Preconstruction surveys for special-status</p>	<p>Preconstruction surveys for all special-status mammal species with the potential to occur within the Study Area (as listed in Appendix A: Table 2) should be conducted prior to any grading or habitat alteration that could be suitable for denning/nesting. These surveys aim to identify and document the presence of these species within or in proximity to the proposed project area.</p>

mammal species	<p>These surveys must be carried out by qualified biologists with expertise in identifying these special-status mammal species and their specific habitat requirements. The surveys should be tailored to the site and adhere to established protocols and methodologies.</p> <p>During the surveys, biologists will systematically search the project area for signs of these special-status mammal species, including burrows, tracks, and other indicators of activity.</p> <p>If any of these special-status mammal species or signs of their presence are discovered within or near the project area, CDFW staff should be notified immediately and appropriate mitigation measures will be developed and put into practice to mitigate potential impacts. These measures may involve project design adjustments to avoid disturbing their habitats or implementing protective measures during construction activities to ensure the well-being of these animals.</p>
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Additional recommendations:

- To mitigate the adverse effects of nonnative and invasive species, it is advisable to give priority to their removal within the project site. These species pose a significant threat to native flora and fauna, disrupting the ecosystem's natural balance. Through targeted eradication methods and ongoing monitoring, the project can effectively curtail their spread. To enhance the habitat, it is highly recommended to replace the removed species with a diverse selection of native plants. Native plants offer essential resources for local wildlife and contribute to overall biodiversity. Implementing this mitigation measure, along with continued monitoring and maintenance, will restore and enhance the project site's habitat, fostering ecological integrity and long-term sustainability. Involving professionals and engaging the community will further bolster successful restoration efforts.

Invasive species have different criteria for successful removal. It is recommended to consult with a biologist or specialist who can assist in identifying the best method for each species removal. Generally manual removal of the species to prevent its further spread and establishment is recommended. Manual removal entails physically pulling or cutting the plant at their base and is particularly effective for small infestations that require precision to avoid harming surrounding vegetation. However, manual removal can be labor-intensive, especially in larger areas. Diligent efforts are essential to ensure the complete removal of the plant, including its roots, to prevent regrowth. This method aligns with environmentally friendly practices, minimizing chemical use, making it suitable for projects with ecological concerns. Regular monitoring and maintenance are typically required to prevent resurgence, emphasizing the importance of ongoing vigilance throughout the removal process.

- If additional activities are proposed that may result in take of a listed species, agency personnel from CDFW and USFWS can further analyze the potential impacts and provide technical assistance for any listed species. If required, guidelines for these reconnaissance surveys should

be followed in accordance to the, CDFW Survey and Monitoring Protocols and Guidelines, which can be located here: <https://www.wildlife.ca.gov/conservation/survey-protocols>

5.2 Statement of Limitation

The data and findings presented in this report are valid to the extent that they represent habitat analysis and/or actual sightings of the wildlife and special-status species described. These findings outlined in this report are based on two (2) biological assessment site visit. The biological assessment performed at the site was a reconnaissance level survey and may not be seasonally appropriate for all conclusive results.

Deficiencies in these findings may result from the following:

- The assessment of habitat utilization within the Study Area, by special-status animal species, was based upon the observations made during a single site visit and further studies and surveys may be required for project approval by local, state or federal agencies as well.
- The parcel boundaries displayed in the maps created for this Report do not represent a boundary survey. Parcel and property lines shown within these maps are approximated and were acquired from Humboldt County Web GIS, and any errors within these boundaries are a result of errors in Humboldt County's GIS database.
- This report is not intended to be a complete biological survey report for all species-status animal species generated from the CNDDDB, but rather an initial reconnaissance and feasibility assessment based on present biological conditions.
- It has been assumed that prior to implementation of this project, protocol-level surveys (pre-construction) will be conducted to verify field and data-based observations documented in this Report, if recommendations established in this Report are not followed.
- Any biological resource buffers and setbacks defined in this report only represent buffers to biological resources and do not include cultural resources (e.g. historical landmarks and/or cemeteries). Additional buffers and setbacks may be required for cultural resources which may alter the size of the potential cultivation areas defined in this Report.

The opinions, conclusions, and recommendations in this Report are based on assumptions made by Naiad Biological Consulting when undertaking services and preparing the report. As a result of this report being an initial biological reconnaissance and scoping assessment (not referring to the botanical survey and wetland delineation), and not a protocol-level survey, Naiad Biological Consulting expressly disclaims responsibility for any error in, or omission from, this Report arising from or in connection with any of the assumptions being incorrect.

Section 6 Regulatory Framework

6.1 Regulatory Framework Guidelines

The following regulatory framework is provided as justification for the rules and recommendations presented within this document. Further information may be appropriate for explanation of recommendations or actions expressed in this document and can be presented to the client upon request.

6.1.1 Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally-listed threatened and endangered species under the federal Endangered Species Act (FESA). The USFWS also maintains a list of 'proposed' species and candidate species that are not legally protected under the FESA, but are often included in their review of a project as they may become listed in the near future. The FESA protects listed animal species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that results in death or injury to a listed species. An activity can be defined as a "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA if they occur on federal lands. Pursuant to the requirements of the FESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species (plants and animals) may be present in the project area and determine whether the proposed project may affect such species. Any activities that could result in the take of a federally-listed species will require formal consultation with the USFWS.

6.1.2 California Endangered Species Act

The California Endangered Species Act (CESA) protects any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the California Department of Fish and Wildlife (CDFW) has jurisdiction over state-listed species (California Fish and Wildlife Code 2070). Take of state-listed species requires a permit from CDFW, which is granted only under strictly limited circumstances. Additionally, the CDFW maintains lists of "species of special concern" that are defined as animal species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed or proposed endangered or threatened species may be present in the project area and determine whether the proposed project may result in a significant impact on such species.

6.1.3 California Environmental Quality Act

Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides 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. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Wildlife Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the

ability to protect a species from a project's potential impacts, if it finds that the species meets the criteria of a threatened or endangered species.

6.1.4 Clean Water Act

Under Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers (Corps) is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may also be subject to Corps jurisdiction. In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the U.S. The type of permit depends on the acreage involved and the purpose of the proposed fill. Minor amounts of fill are sometimes covered by Nationwide Permits, which were established to streamline the permit process for projects with "minimal" impacts on wetlands or other waters of the U.S. An Individual Permit is required for projects that result in more than a minimal impact on jurisdictional areas. The Individual Permit process requires evidence that fill of jurisdictional areas has been minimized to the extent "practicable" and provides an opportunity for public review of the project.

6.1.5 California Water Quality Regulatory Programs

Pursuant to Section 401 of the federal Clean Water Act and the state's Porter-Cologne Act, projects that are regulated by the Corps must obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification ensures that the project will uphold state water quality standards. The RWQCB sometimes asserts jurisdiction over wetlands that the Corps does not (e.g. certain isolated wetlands) and may impose mitigation requirements even if the Corps does not. The CDFW also exerts jurisdiction over the bed and banks of watercourses and water bodies according to provisions of Section 1601 to 1603 of the Fish and Wildlife Code. The Fish and Wildlife Code requires a Stream Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body.

6.1.6 California Coastal Act

The California Coastal Act is a state law enacted in 1976 to protect and enhance California's coast and ocean resources. The act establishes policies and regulations for coastal development, access, public recreation, and conservation, and requires the creation of local coastal programs by cities and counties in the coastal zone. The act also creates the California Coastal Commission, which is responsible for enforcing the act and reviewing permits for coastal development projects. The California Coastal Act requires the protection of the coastal zone's natural resources, including sensitive habitats and species. To achieve this, projects proposed within the coastal zone must undergo a biological assessment to identify environmentally sensitive habitat areas (ESHA) and assess potential impacts. ESHA are defined as areas of the coastal zone that are sensitive to biological damage or degradation and are necessary for the maintenance of the overall biological productivity of the coastal zone. These assessments are required to inform project permitting decisions and ensure the protection of the coastal environment.

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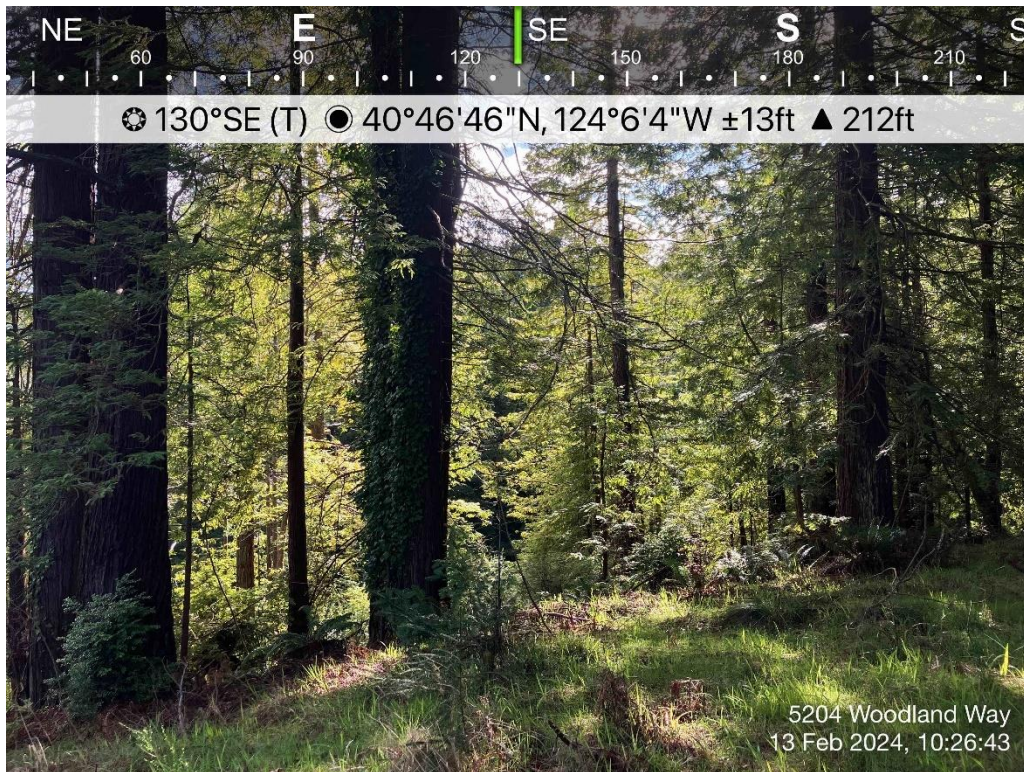


Photo 1. Redwood Forest and Woodland Habitat west of the cleared flat above the cut hillside.



Photo 2. Understory habitat of the Redwood Forest and Woodland Habitat on the eastern portion of the cleared flat.



Photo 3. Understory habitat and the Class III east and downslope of the cleared flat.



Photo 4. Understory habitat of the Redwood Forest and Woodland Habitat on the southeastern portion of the cleared flat.



Photo 5. Cleared graded flat. Perspective standing within the identified wetland feature facing north.

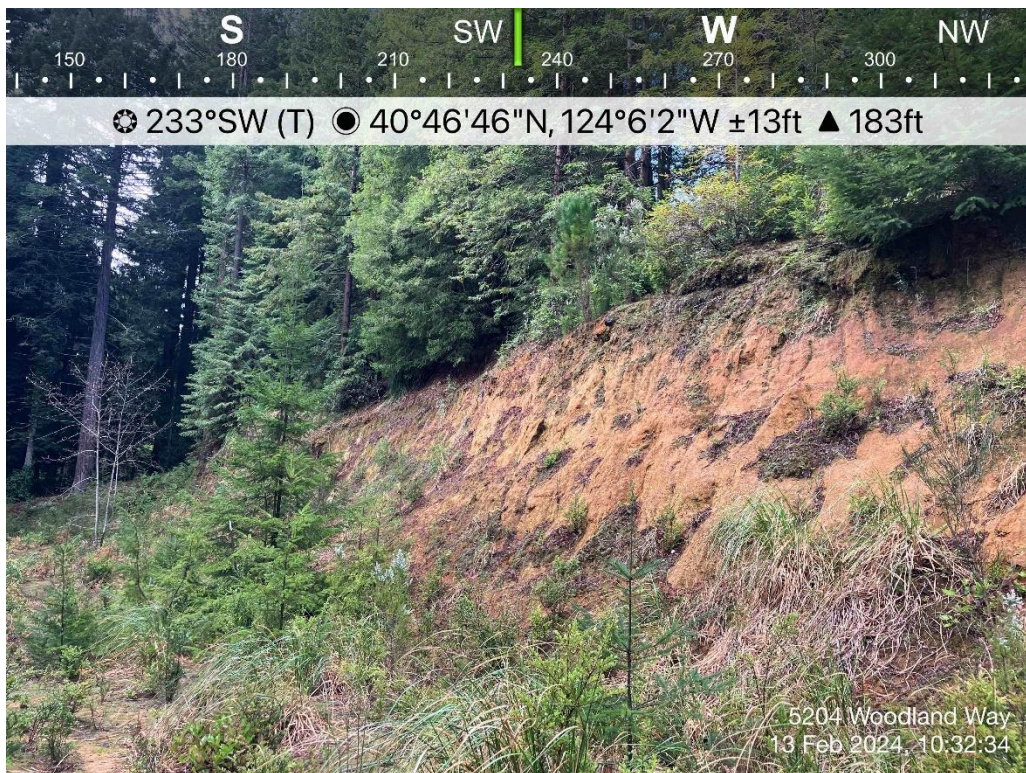


Photo 6. The western extent of the cleared graded flat showing the cut exposed hillslope.



Photo 7. Cleared graded flat. Perspective standing within the northern extent of the wetland feature facing south.



Photo 8. Cleared graded flat. Perspective standing within the identified wetland feature facing north.

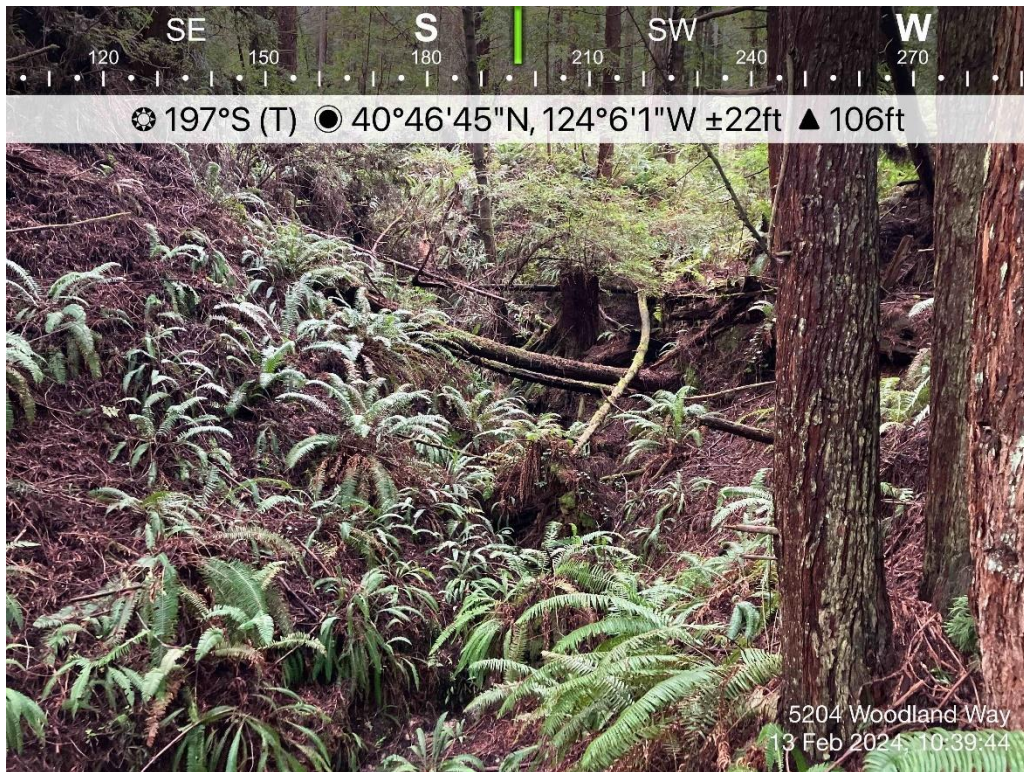


Photo 9. Class III ephemeral watercourse southeast of the cleared flat.



Photo 10. Class III ephemeral watercourse east of the cleared flat.



Photo 11. Portion of the wetland feature identified within the Study Area.



Photo 12. Portion of the wetland feature identified within the Study Area.

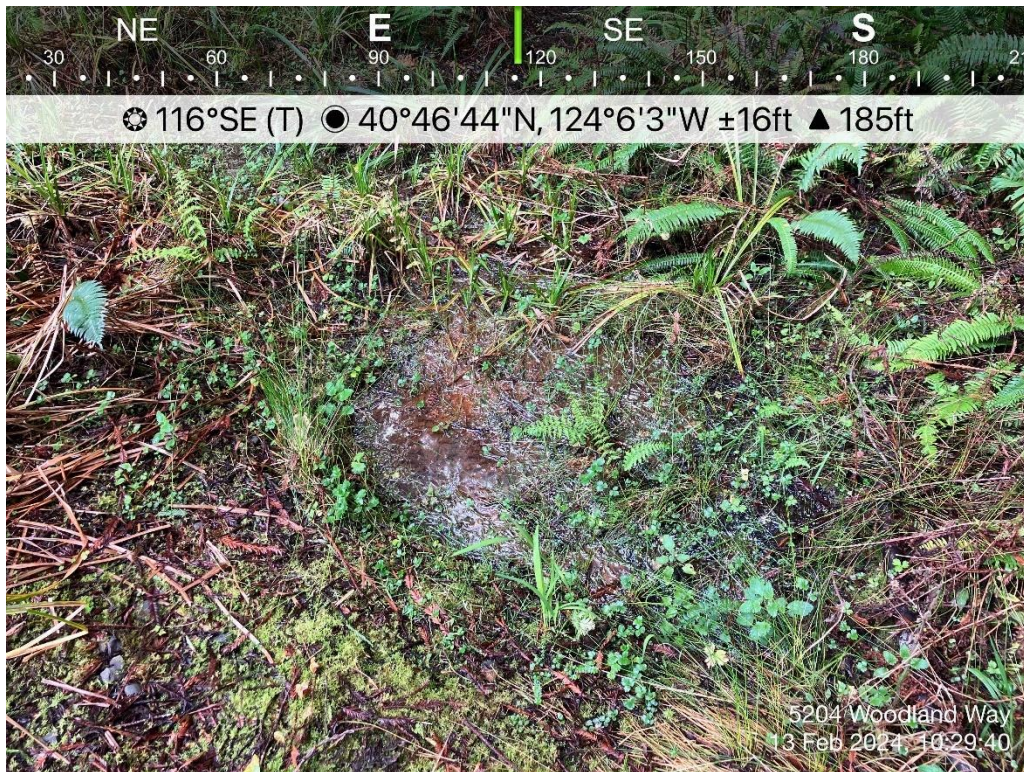


Photo 13. Evidence of hydrology and hydric sheen within the wetland feature.

Appendix A

TABLES

BIOLOGICAL RESOURCES ASSESSMENT

Nick Bowman Construction Inc.

5204 Woodland Way
Eureka, CA, 95503

Assessor Parcel Number (APN):

403 – 051 – 032

March 2024



Table 2 – Special-Status Animal Species – March 2024 – Arcata South and surrounding 7.5 min quadrangles

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	Habitat	Potential of Occurrence within Study Area	Intensity of Impact	Mitigation Measure Proposed
Amphibians								
<i>Ascaphus truei</i>	Pacific tailed frog	None	None	SSC	<i>Ascaphus truei</i> , commonly known as the Coastal Tailed Frog, is primarily found in cold, clear, and fast-flowing streams and rivers with rocky substrates in the Pacific Northwest of North America. They require cool water temperatures and are often associated with dense vegetation along the water's edge.	None due to lack of suitable stream habitat within Study Area.	No Effect	NA
<i>Plethodon elongatus</i>	Del Norte salamander	None	None	WL	The Del Norte salamander thrives in moist, forested habitats, particularly in montane and coastal forests with dense vegetation cover. These elusive amphibians seek shelter in leaf litter, woody debris, and rocky outcrops within mixed coniferous and deciduous forests, as well as redwood and mixed-evergreen environments. Maintaining suitable moisture levels and preserving the integrity of their forested habitats are crucial for their survival.	High to high due to presence of aquatic habitat.	May affect, but not likely to adversely affect since preconstruction surveys, BMPs, and a 50 ft aquatic resource setback are recommended	BIO-1; BIO-2; BIO-3
<i>Rana aurora</i>	northern red-legged frog	None	None	SSC	<i>Rana aurora</i> , also known as the Northern Red-legged Frog, inhabits a variety of aquatic habitats including ponds, lakes, marshes, and slow-moving streams. They prefer habitats with abundant aquatic vegetation and ample cover such as fallen logs and rocks. They are typically found in forested regions of the Pacific Northwest and California.	High due to suitable habitat in the wetland features within Study Area.	May affect, but not likely to adversely affect since preconstruction surveys, BMPs, and a 50 ft aquatic resource setback are recommended	BIO-1; BIO-2; BIO-3
<i>Rana boylei pop. 1</i>	foothill yellow-legged frog - north coast DPS	None	None	SSC	<i>Rana boylei</i> , commonly called the Foothill Yellow-legged Frog, is a stream-dwelling amphibian found in California. They inhabit rocky streams and rivers in foothill and mountainous regions. They require clear, cool water with moderate to fast flow rates. They are often found in areas with a mix of vegetation and exposed boulders for basking and shelter.	Low due to only Class III within Study Area.	May affect, but not likely to adversely affect since preconstruction surveys, BMPs, and a 50 ft aquatic resource setback are recommended	BIO-1; BIO-2; BIO-3

<i>Rhyacotriton variegatus</i>	southern torrent salamander	None	None	SSC	<i>Rhyacotriton variegatus</i> , known as the southern torrent salamander, is a small salamander species found in the Pacific Northwest of North America. They inhabit small, cold, and clear mountain streams with dense vegetation and rocky substrates. They are often associated with old-growth forests and are mainly nocturnal, seeking cover under rocks and logs during the day.	Low due to only Class III within Study Area.	May affect, but not likely to adversely affect since preconstruction surveys, BMPs, and a 50 ft aquatic resource setback are recommended	BIO-1; BIO-2; BIO-3
Birds								
<i>Accipiter cooperii</i>	Coopers hawk	None	None	WL	<i>Accipiter cooperii</i> , commonly known as the Cooper's Hawk, occupies a variety of forested habitats across North America. They can be found in dense woodlands, forest edges, and riparian areas. They require a mix of trees for nesting and perching, as well as open spaces for hunting. They are adaptable and can also be found in urban and suburban environments.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL	<i>Accipiter striatus</i> , commonly known as the Sharp-shinned Hawk, is a small forest raptor that inhabits woodlands, forests, and mixed coniferous-deciduous habitats across North America. They prefer areas with dense vegetation for cover and nesting. They can be found in various ecosystems, including suburban and urban areas, where they prey on small birds and mammals.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP WL	The golden eagle, or <i>Aquila chrysaetos</i> , inhabits a diverse range of habitats across its vast distribution, including open landscapes such as mountains, deserts, grasslands, and tundra. These impressive raptors typically prefer rugged terrain with cliffs, canyons, and open spaces, which provide ideal hunting grounds for their prey. They often nest in tall trees, on cliffs, or even on the ground in more remote areas. Golden eagles are known for their adaptability and can be found in various ecosystems, from Arctic tundra to temperate forests, displaying remarkable resilience to a wide range of environmental conditions.	Low due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4

<i>Circus hudsonius</i>	northern harrier	None	None	SSC	<i>Circus hudsonius</i> , known as the Northern Harrier or Marsh Hawk, occupies a wide range of habitats, including marshes, wetlands, grasslands, and agricultural fields. They require open areas with low vegetation for hunting, as they rely on their keen eyesight to locate prey. They can be found in both coastal and inland regions throughout North America.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	<i>Elanus leucurus</i> , commonly known as the White-tailed Kite, is a raptor species found in open habitats such as grasslands, marshes, agricultural fields, and coastal areas. They require areas with tall grasses or shrubs for nesting and perch hunting. They can often be seen hovering in search of small	Low due to lack of suitable habitat in the Study Area.	No effect	BIO-4
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	FP	<i>Haliaeetus leucocephalus</i> , commonly known as the Bald Eagle, inhabits a variety of habitats near large bodies of water, such as rivers, lakes, and coastal areas. They require mature trees for nesting and prefer areas with an abundance of fish, their primary food source.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Brachyramphus marmoratus</i>	marbled murrelet	Threatened	Endangered	-	<i>Brachyramphus marmoratus</i> , also known as the Marbled Murrelet, nests in old-growth forests along the Pacific coast. They rely on large trees, especially conifers like shore pine, for nesting platforms. They primarily forage in nearshore marine waters.	Low due to lack of suitable old-growth habitat in the Study Area.	No effect	BIO-4
<i>Chaetura vauxi</i>	Vauxs swift	None	None	SSC	<i>Chaetura vauxi</i> , or <i>Vaux's Swift</i> , can be found in various forested habitats, particularly coniferous forests, where they nest in tree cavities or chimneys. They are highly aerial and often forage for insects over open areas.	Moderate due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Ardea alba</i>	great egret	None	None	-	<i>Ardea alba</i> , commonly referred to as the Great Egret, inhabits wetland areas such as marshes, swamps, and coastal lagoons. They require shallow water for foraging and nest in trees or shrubs near water.	Moderate due to suitable habitat in the Study Area. More likely roosting than foraging/hunting.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4

<i>Ardea herodias</i>	great blue heron	None	None	-	<i>Ardea herodias</i> , known as the Great Blue Heron, is found in a range of aquatic habitats, including wetlands, marshes, and rivers. They nest in trees and forage in both freshwater and saltwater environments, primarily targeting fish and other small aquatic prey.	Moderate due to suitable habitat in the Study Area. More Likely roosting than foraging/hunting	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Botaurus lentiginosus</i>	American bittern	None	None	-	<i>Botaurus lentiginosus</i> , commonly called the American Bittern, is found in marshes, wetlands, and other aquatic habitats with dense vegetation. They require tall, emergent vegetation for nesting and rely on camouflage for hunting small fish and invertebrates.	Moderate due to suitable habitat in the Study Area. More Likely roosting than foraging/hunting	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Egretta thula</i>	snowy egret	None	None	-	<i>Egretta thula</i> , known as the Snowy Egret, is typically found in coastal areas, estuaries, and wetlands. They require shallow water for foraging and nest in trees or shrubs near water. They feed on fish, amphibians, and invertebrates.	Moderate due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	<i>Nycticorax nycticorax</i> , commonly known as the Black-crowned Night Heron, inhabits wetlands, marshes, and wooded swamps. They nest in trees or shrubs near water and forage during twilight and nighttime, feeding on fish, frogs, and other small animals.	Low due to lack of suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Charadrius montanus</i>	mountain plover	None	None	SSC	<i>Charadrius montanus</i> , or the Mountain Plover, is primarily found in open grasslands, sagebrush flats, and prairies. They nest on bare ground, often in sparsely vegetated areas. They rely on these open habitats for foraging, feeding mainly on insects.	Low due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Charadrius nivosus nivosus</i>	western snowy plover	Threatened	None	SSC	<i>Charadrius nivosus nivosus</i> , known as the Snowy Plover, prefers sandy or gravelly coastal beaches and dunes as nesting sites. They require open areas near the shoreline for foraging on small invertebrates.	None due to lack of suitable habitat in the Study Area.	No effect	BIO-4
<i>Falco columbarius</i>	merlin	None	None	WL	<i>Falco columbarius</i> , or the Merlin, occupies a variety of habitats, including open woodlands, grasslands, and coastal areas. They nest in trees or on cliffs and feed on small birds, insects, and occasionally small mammals.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4

<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	<i>Falco peregrinus anatum</i> , commonly known as the Peregrine Falcon, can be found in a range of habitats, including coastal cliffs, mountainous regions, and tall buildings in urban areas. They nest on ledges or in tree cavities and prey on birds and small mammals.	Low due to lack suitable habitat in the Study Area. This species would only utilize the study area for foraging but and not likely roosting.	No effect	BIO-4
<i>Riparia riparia</i>	bank swallow	None	Threatened	-	<i>Riparia riparia</i> , or the Bank Swallow, typically nests in colonies on eroded banks, cliffs, or sandbanks near water bodies. They require areas with sandy or loamy substrates and open spaces for foraging, primarily feeding on flying insects.	Low due to suitable habitat in the Study Area. This species would only utilize the study area for foraging and not likely roosting.	No effect	BIO-4
<i>Icteria virens</i>	yellow-breasted chat	None	None	SSC	The yellow-breasted chat, or <i>Icteria virens</i> , is primarily found in dense shrubby habitats such as brushy thickets, overgrown fields, riparian areas, and woodland edges. These habitats provide the dense cover and diverse vegetation structure that the species prefers for nesting, foraging, and breeding. Yellow-breasted chats are often associated with areas of dense understory vegetation, particularly in early successional stages.	Moderate due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Pandion haliaetus</i>	osprey	None	None	WL	<i>Pandion haliaetus</i> , known as the Osprey, is found near water bodies, including coastal areas, lakes, and rivers. They build large stick nests on high structures, such as trees or man-made platforms. They feed almost exclusively on fish.	Low due to suitable habitat in the Study Area.	No effect	BIO-4
<i>Poecile atricapillus</i>	black-capped chickadee	None	None	WL	<i>Poecile atricapillus</i> , commonly called the Black-capped Chickadee, is a resident of various forested habitats, including deciduous and mixed forests. They nest in tree cavities and forage for insects, seeds, and berries in the surrounding vegetation.	Moderate due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Passerculus sandwichensis alaudinus</i>	Bryants savannah sparrow	None	None	SSC	<i>Passerculus sandwichensis alaudinus</i> , also known as the Aleutian Savannah Sparrow, inhabits coastal areas, including salt marshes, dunes, and grasslands. They require low-lying vegetation for nesting and feed on a variety of seeds and insects.	Low due to suitable habitat in the Study Area.	No effect	BIO-4

<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	FP	<i>Pelecanus occidentalis californicus</i> , known as the California Brown Pelican, is found along the coast and requires coastal habitats with access to suitable nesting sites and abundant fish populations for foraging. Their nesting habitat consists of isolated offshore islands, rocky outcrops, and coastal cliffs. These locations provide the pelicans with protection from disturbances and predators.	None due to lack of suitable nesting sites and no prey source.	No effect	NA
<i>Nannopterum auritum</i>	double-crested cormorant	None	None	WL	<i>Nannopterum auritum</i> , commonly called the Least Bittern, inhabits freshwater and brackish marshes with dense emergent vegetation. They require tall grasses and reeds for nesting and feed on small fish and invertebrates found in wetland habitats.	None due to lack of prey source and suitable nesting sites.	No effect	NA
<i>Sphyrapicus ruber</i>	red-breasted sapsucker	None	None	-	<i>Sphyrapicus ruber</i> , or the Red-breasted Sapsucker, is found in mixed coniferous forests and woodlands. They require mature trees, particularly those with sap flow, for nesting cavities and feed on sap, insects, and tree bark.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Coturnicops noveboracensis</i>	yellow rail	None	None	SSC	<i>Coturnicops noveboracensis</i> , commonly known as the Yellow Rail, inhabits wetland habitats such as marshes, sedge meadows, and cattail marshes. They require dense vegetation for nesting and forage on insects and seeds within the wetland habitat.	Low due to suitable habitat in the Study Area.	No effect	BIO-4
<i>Rallus obsoletus obsoletus</i>	California Ridgways rail	Endangered	Endangered	FP	<i>Rallus obsoletus obsoletus</i> , known as the Ridgway's Rail, can be found in coastal salt marshes and tidal wetlands. They require tall vegetation for nesting and forage on small invertebrates, crustaceans, and plant matter found in the marsh habitat.	Low due to suitable habitat in the Study Area.	No effect	BIO-4
<i>Numenius americanus</i>	long-billed curlew	None	None	WL	<i>Numenius americanus</i> , or the Long-billed Curlew, is primarily found in grasslands, prairies, and coastal estuaries. They require open areas for nesting and forage on a variety of insects, crustaceans, and small vertebrates in their habitat.	Low due to suitable habitat in the Study Area.	No effect	BIO-4

<i>Asio flammeus</i>	short-eared owl	None	None	SSC	<i>Asio flammeus</i> , commonly known as the Short-eared Owl, inhabits open grasslands, marshes, and prairies. They nest on the ground or in low vegetation and feed on small mammals, birds, and insects found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Asio otus</i>	long-eared owl	None	None	SSC	The long-eared owl, or <i>Asio otus</i> , inhabits a variety of forested habitats, including deciduous and coniferous woodlands, mixed forests, and wooded riparian areas. These owls prefer areas with dense vegetation and tall trees for roosting, nesting, and hunting. They often choose wooded habitats with a diverse understory, providing ample cover for both daytime roosting and nighttime hunting. Long-eared owls are commonly found in forests with a mixture of tree species, as well as open areas nearby for hunting opportunities.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Strix nebulosa</i>	great gray owl	None	Endangered	-	The great gray owl, or <i>Strix nebulosa</i> , primarily inhabits dense coniferous forests in northern North America, including areas with dense stands of spruce, fir, pine, and cedar trees. These large owls prefer mature forests with tall trees that provide suitable roosting and nesting sites, as well as ample hunting opportunities. They are often found in areas with dense canopy cover and a diverse understory, which provides ideal habitat for their preferred prey species, such as voles, mice, and other small mammals.	None due to no suitable forest habitat within Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Strix occidentalis caurina</i>	Northern Spotted Owl	Threatened	Threatened	-	<i>Strix occidentalis caurina</i> , known as the Northern Spotted Owl, is found in mature coniferous forests with dense canopy cover. They require old-growth trees for nesting and forage on small mammals, birds, and insects found in their forest habitat.	None due to no suitable forest habitat within Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
<i>Contopus cooperi</i>	olive-sided flycatcher	None	None	SSC	<i>Contopus cooperi</i> , or the Olive-sided Flycatcher, inhabits forested habitats, including coniferous and mixed forests. They require tall trees for nesting and perch on exposed branches to catch flying insects, their primary food source.	Moderate due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4

<i>Empidonax traillii</i>	willow flycatcher	None	Endangered	-	Empidonax traillii, known as the Willow Flycatcher, is found in riparian habitats, wetlands, and shrubby areas near water bodies. They nest in shrubs and forage on insects, primarily targeting flying insects and those found near water.	Moderate due to suitable habitat in the Study Area.	May affect, but not likely to adversely affect since preconstruction nesting bird surveys are recommended	BIO-4
Fishes								
<i>Acipenser medirostris</i> pop. 1	green sturgeon - southern DPS	Threatened	None	-	<i>Acipenser medirostris</i> pop. 1, commonly called the Green Sturgeon, inhabits coastal areas and estuaries. They require deepwater habitats and migrate up rivers for spawning. They primarily feed on bottom-dwelling organisms, such as crustaceans and small fish.	None due to no deepwater habitats within the Study Area.	No effect	NA
<i>Acipenser medirostris</i> pop. 2	green sturgeon - northern DPS	None	None	SSC	<i>Acipenser medirostris</i> pop. 2, commonly known as the Green Sturgeon, is found in coastal and estuarine waters. They require deepwater habitats and migrate up rivers for spawning. They primarily feed on bottom-dwelling organisms, such as crustaceans and small fish.	None due to no deepwater habitats within the Study Area.	No effect	NA
<i>Acipenser transmontanus</i>	white sturgeon	None	None	SSC	<i>Acipenser transmontanus</i> , also known as the White Sturgeon, inhabits large rivers, estuaries, and coastal areas. They require deepwater habitats and migrate for spawning. They primarily feed on benthic invertebrates and small fish found in their aquatic habitat.	None due to no deepwater habitats within the Study Area.	No effect	NA
<i>Eucyclogobius newberryi</i>	tidewater goby	Endangered	None	-	<i>Eucyclogobius newberryi</i> , commonly called the Tidewater Goby, is found in coastal lagoons, estuaries, and brackish marshes. They require shallow, protected areas with sandy or muddy substrates and feed on small invertebrates and algae found in their aquatic habitat.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	-	<i>Spirinchus thaleichthys</i> , known as the Longfin Smelt, is found in estuaries, brackish water, and nearshore marine habitats. They require shallow, nearshore areas with sandy or muddy substrates and feed on planktonic organisms and small invertebrates found in their habitat.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Thaleichthys pacificus</i>	eulachon	Threatened	None	-	<i>Thaleichthys pacificus</i> , commonly called the Pacific Sand Lance, is found in coastal waters and sandy or gravelly habitats. They are important forage fish and	None since the only watercourse within the	No effect	NA

					play a vital role in the food chain. They feed on planktonic organisms and small invertebrates found in their habitat.	Study Area is a Class III.		
<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	<i>Entosphenus tridentatus</i> , known as the Pacific Lamprey, inhabits rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They are parasitic, feeding on the body fluids of other fish species during their adult stage.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Lampetra richardsoni</i>	western brook lamprey	None	None	SSC	<i>Lampetra richardsoni</i> , commonly called the Western Brook Lamprey, inhabits rivers and streams. They require clean, well-oxygenated waters with suitable substrates for spawning. They are parasitic, feeding on the body fluids of other fish species during their adult stage.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus clarkii clarkii</i>	coast cutthroat trout	None	None	SSC	<i>Oncorhynchus clarkii clarkii</i> , known as the Coastal Cutthroat Trout, is found in coastal rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They primarily feed on aquatic insects, crustaceans, and small fish found in their habitat.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus gorbuscha</i>	pink salmon	None	None	-	<i>Oncorhynchus gorbuscha</i> , commonly called the Pink Salmon, inhabits coastal marine waters and enters freshwater rivers and streams for spawning. They require well-oxygenated rivers with gravelly substrates. They primarily feed on zooplankton and small fish during their marine phase.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus keta</i>	chum salmon	None	None	-	<i>Oncorhynchus keta</i> , known as the Chum Salmon, is found in coastal marine waters and migrates to freshwater rivers and streams for spawning. They require well-oxygenated rivers with suitable gravelly substrates. They feed on zooplankton, insects, and small fish during their marine phase.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus kisutch pop. 2</i>	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	-	<i>Oncorhynchus kisutch pop. 2</i> , commonly called the Coho Salmon, inhabits coastal marine waters and enters freshwater rivers and streams for spawning. They require well-oxygenated rivers with suitable	None since the only watercourse within the Study Area is a Class III.	No effect	NA

					gravelly substrates. They feed on zooplankton, insects, and small fish during their marine phase.			
<i>Oncorhynchus mykiss irideus</i> pop. 48	steelhead - northern California DPS summer-run	Threatened	Endangered	-	<i>Oncorhynchus mykiss irideus</i> pop. 48, known as steelhead or the Coastal Rainbow Trout, is found in coastal rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They primarily feed on aquatic insects, crustaceans, and small fish found in their habitat.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus mykiss irideus</i> pop. 49	steelhead - northern California DPS winter-run	Threatened	None	-	<i>Oncorhynchus mykiss irideus</i> pop. 49, commonly called steelhead or the Coastal Rainbow Trout, inhabits coastal rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They primarily feed on aquatic insects, crustaceans, and small fish found in their habitat.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus tshawytscha</i> pop. 17	chinook salmon - California coastal ESU	Threatened	None	-	<i>Oncorhynchus tshawytscha</i> pop. 17, known as the Chinook Salmon, is found in coastal marine waters and migrates to freshwater rivers and streams for spawning. They require well-oxygenated rivers with suitable gravelly substrates. They feed on zooplankton, insects, and small fish during their marine phase.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
<i>Oncorhynchus tshawytscha</i> pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	Candidate	Threatened	SSC	<i>Oncorhynchus tshawytscha</i> pop. 17, known as the Chinook Salmon, is found in coastal marine waters and migrates to freshwater rivers and streams for spawning. They require well-oxygenated rivers with suitable gravelly substrates. They feed on zooplankton, insects, and small fish during their marine phase.	None since the only watercourse within the Study Area is a Class III.	No effect	NA
Insects								
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	<i>Bombus caliginosus</i> , commonly known as the obscure bumble bee, can be found in a variety of habitats, including grasslands, meadows, and forest edges. They require abundant flowers for nectar and pollen sources and often nest underground or in grass clumps.	Moderate due to suitable habitat.	May affect, but not likely to adversely affect since preconstruction bumble bee surveys are recommended	BIO-4
<i>Bombus crotchii</i>	Crotch bumble bee	None	Candidate Endangered	-	<i>Bombus crotchii</i> , known as Crotch's Bumblebee, is primarily found in alpine and subalpine habitats, including meadows, open forests, and mountain slopes. They require flowering plants for nectar and	Low due to lack of suitable habitat.	May affect, but not likely to adversely affect since preconstruction	BIO-4

					pollen sources and often nest underground or in grass clumps.		bumble bee surveys are recommended	
<i>Bombus occidentalis</i>	western bumble bee	None	Candidate Endangered	-	<i>Bombus occidentalis</i> , commonly called the Western Bumblebee, is found in a variety of habitats, including meadows, grasslands, and open woodlands. They require abundant flowers for nectar and pollen sources and often nest underground or in grass clumps.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction bumble bee surveys are recommended	BIO-4
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	None	None	-	<i>Cicindela hirticollis gravida</i> , known as the Lane Mountain Tiger Beetle, is found in arid habitats such as sand dunes, gravelly slopes, and barren hillsides. They require open sandy areas with sparse vegetation and are often associated with disturbed or unvegetated habitats.	None due to lack of suitable habitat	No effect	NA
<i>Scaphinotus behrensi</i>	Behrens snail-eating beetle	None	None	-	<i>Scaphinotus behrensi</i> , commonly called the Wandering Ground Beetle, is found in forested habitats, including coniferous and mixed forests. They require moist leaf litter and decaying logs for shelter and feed on small invertebrates found on the forest floor.	Moderate due to suitable habitat	May affect, but not likely to adversely affect	NA
Mammals								
<i>Aplodontia rufa humboldtiana</i>	Humboldt mountain beaver	None	None	-	<i>Aplodontia rufa humboldtiana</i> , known as the Humboldt Mountain Beaver, inhabits mountainous regions with dense vegetation, such as forests and woodlands. They require areas with deep soils for burrowing and feed on a variety of plant material, including leaves, bark, and roots.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5
<i>Arborimus albipes</i>	white-footed vole	None	None	SSC	<i>Arborimus albipes</i> , commonly called the White-footed Vole, inhabits coniferous forests and dense shrub habitats. They require areas with dense vegetation for cover and feed on grasses, herbs, seeds, and bark found in their habitat.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5
<i>Arborimus pomo</i>	Sonoma tree vole	None	None	SSC	<i>Arborimus pomo</i> , known as the Sonoma Tree Vole, is found in coniferous forests and dense shrub habitats. They require areas with dense vegetation for cover and feed on grasses, herbs, seeds, and bark found in their habitat.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5
<i>Erethizon dorsatum</i>	North American porcupine	None	None	-	<i>Erethizon dorsatum</i> , commonly known as the North American Porcupine, inhabits a variety of habitats,	Moderate due to suitable habitat	May affect, but not likely to adversely affect	BIO-5

					including forests, woodlands, and grasslands. They require trees for shelter and feed on bark, twigs, leaves, and vegetation found in their habitat.		since preconstruction mammal surveys are recommended	
<i>Enhydra lutris nereis</i>	southern sea otter	Threatened	None	FP	<i>Enhydra lutris nereis</i> , known as the Southern Sea Otter, is found along the coast in marine habitats such as kelp forests, rocky shores, and estuaries. They require abundant kelp beds for resting and forage on a variety of marine invertebrates, including sea urchins, crabs, and mollusks.	None due to the Study Area's proximity to the coast and bay.	No effect	NA
<i>Martes caurina humboldtensis</i>	Humboldt marten	Threatened	Endangered	SSC	<i>Martes caurina humboldtensis</i> , commonly called the Humboldt Marten, is found in mature coniferous forests and dense shrub habitats. They require dense vegetation for cover and feed on small mammals, birds, insects, and fruits found in their habitat.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5
<i>Pekania pennanti</i>	Fisher	None	None	SSC	<i>Pekania pennanti</i> , commonly known as the Fisher, is found in forests, including coniferous and mixed forests. They require mature trees for denning and feed on a variety of small mammals, birds, and insects found in their habitat.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5
<i>Taxidea taxus</i>	American badger	None	None	SSC	The American badger, or <i>Taxidea taxus</i> , typically inhabits open grasslands, prairies, and shrub-steppe habitats across North America. These solitary mammals prefer areas with well-drained soils suitable for digging their extensive burrow systems. They are commonly found in grasslands, pastures, agricultural fields, and open areas with sparse vegetation, where they can easily hunt for their primary prey, such as ground squirrels, mice, voles, and other small mammals.	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5
<i>Bassariscus astutus raptor</i>	northern California ringtail	None	None	FP	The northern California ringtail, scientifically known as <i>Bassariscus astutus raptor</i> , is a small carnivorous mammal native to the western United States, including parts of northern California. This elusive species primarily inhabits diverse habitats such as woodlands, chaparral, rocky areas, and canyonlands. They are particularly fond of areas with dense vegetation, rocky outcrops, and rugged terrain, which provide ample cover for hunting and denning. Northern California ringtails are also known to occupy riparian zones and	Moderate due to suitable habitat	May affect, but not likely to adversely affect since preconstruction mammal surveys are recommended	BIO-5

					areas with abundant shrubs and bushes, as these environments offer a variety of prey species, including rodents, birds, insects, and small reptiles.			
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	<i>Corynorhinus townsendii</i> , known as Townsend's Big-eared Bat, inhabits a variety of habitats, including forests, woodlands, and caves. They require roosting sites in caves, buildings, or trees and feed on flying insects found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since direct habitat disturbance is not expected to occur	NA
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	-	<i>Lasionycteris noctivagans</i> , commonly called the Silver-haired Bat, is found in a variety of habitats, including forests, woodlands, and riparian areas. They roost in trees, caves, and buildings and feed on flying insects found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since direct habitat disturbance is not expected to occur	NA
<i>Lasiurus cinereus</i>	hoary bat	None	None	-	<i>Lasiurus cinereus</i> , known as the Hoary Bat, inhabits a variety of habitats, including forests, woodlands, and open areas. They roost in trees and feed on flying insects, including moths, beetles, and mosquitoes found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since direct habitat disturbance is not expected to occur	NA
<i>Myotis evotis</i>	long-eared myotis	None	None	-	<i>Myotis evotis</i> , commonly called the Long-eared Bat, is found in a variety of habitats, including forests, woodlands, and riparian areas. They roost in trees, buildings, and caves and feed on flying insects, including moths and beetles, found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since direct habitat disturbance is not expected to occur	NA

<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	<i>Myotis yumanensis</i> , known as the Yuma Myotis, is found in a variety of habitats, including riparian areas, caves, and buildings. They roost in trees, crevices, and buildings and feed on flying insects, including mosquitoes and midges, found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.	May affect, but not likely to adversely affect since direct habitat disturbance is not expected to occur	NA
Mollusks								
<i>Littorina subrotundata</i>	Newcombs littorine snail	None	None	-	<i>Littorina subrotundata</i> , commonly known as the Newcombs littorine snail or the Flat Periwinkle, is found in intertidal rocky shore habitats. They require rocky substrates and can tolerate exposure to air during low tide. They feed on algae and other organic material found on the rocks.	None due to no suitable habitat.	No effect	NA
<i>Margaritifera falcata</i>	western pearlshell	None	None	-	<i>Margaritifera falcata</i> , known as the Western Pearlshell, inhabits rivers and streams with clean, well-oxygenated waters. They require gravel and rocky substrates and are filter feeders, extracting microscopic organic particles from the water column.	None due to no suitable habitat.	No effect	NA
<i>Anodonta californiensis</i>	California floater	None	None	-	<i>Anodonta californiensis</i> , commonly called the California Floater, is found in freshwater habitats such as lakes, ponds, and slow-moving rivers. They require sandy or muddy substrates and are filter feeders, extracting microscopic organic particles from the water.	None due to no suitable habitat.	No effect	NA
Reptiles								
<i>Emys marmorata</i>	Western pond turtle	Proposed Threatened	None	SSC	Freshwater habitats including ponds, lakes, marshes, and slow-moving streams	Low due to no suitable habitat.	No effect	NA

Definitions of CDFW statuses:

FP

Fully Protected: This classification was the State of California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts.

SS

Species of Special Concern: It is the goal and responsibility of the Department of Fish and Wildlife to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long-term viability.

WL

Watch List: The Department of Fish and Wildlife maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Definitions of Federal Statutes (Federal Endangered Species Act):

Endangered species:

As defined in the U.S. Government Code and California Fish and Game Code (16 U.S. Government Code 1532[6] and California Fish and Game Code Section 2062), a native species, subspecies, variety of organism, or distinct population segment that is in serious danger of becoming extinct throughout all or a significant portion of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

Threatened species:

Native species, subspecies, variety, or distinct population segment of an organism that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future throughout all of a significant portion of its range.

Candidate Species:

Not defined or addressed in statute or regulations. Candidate species are those which USFWS has sufficient information on their biological status and threats to propose listing, but for which the development of a proposed listing regulation is precluded by other higher priority listing activities. Candidates receive no protection under the ESA.

Definitions of State Statutes (California Endangered Species Act):

Endangered species:

A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease. Fish & G. Code, §2062

Threatened species:

A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Fish & G. Code, §2067

Candidate Species:

A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the Department for listing. Candidates are given full CESA protection. Fish & G. Code, §2068

Appendix B

BOTANICAL REPORT

BIOLOGICAL RESOURCES ASSESSMENT

Nick Bowman Construction Inc.

5204 Woodland Way
Eureka, CA, 95503

Assessor Parcel Number (APN):

403 – 051 – 032

March 2024



BOTANICAL REPORT OF SPECIAL STATUS NATIVE PLANT POPULATIONS AND NATURAL COMMUNITIES

APN: 403-051-032
Eureka, Humboldt County, CA

Prepared For:

5204 Woodland Way
Eureka, CA 95503

Prepared by:

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1198 P Street, Unit A
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In Conjunction with:



PO Box 121
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Date Prepared:

July 26, 2023

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Summary Information

Legal description:	Portions of section 32 of T5N, R1E, H.B. &M.
APN:	403-051-032
USGS 7.5' Quad:	Arcata South (4012471)
Parcel size:	2.59 Acres
Dates of survey:	April 28 th and July 9 th , 2023
Surveyed by:	Sarah Mason
Field survey effort:	4 hours
Results:	<u>No CRPR 1 or 2 plants were observed</u>

Introduction, Background, and Project Understanding

Purpose and Need

This botanical survey report was prepared to assess potential impacts to botanical resources and summarizes the results of a survey conducted in Eureka, California (APN: 403-051-032). The survey was performed to identify special status plants and sensitive plant communities that could be impacted by operations associated with the subdivision of parcels in accordance with the California Environmental Quality Act (CEQA) using the California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

Project Description and Setting

The proposed project includes the development of residential housing on a 2.59-acre lot within the coastal zone. The project area is located on a flat that was previously altered and graded for residential development. The land was historically utilized for logging and is dominated by several invasive species.

The parcel address is located at 5204 Woodland Way, Eureka, California 95503, within the Arcata South USGS 7.5-minute quadrangle (Quad code: 4012471), section 32, T5N, R1E, H.B.&M. The center location of the parcel is 40°46'44.93" N 124°06'03.10" W at an elevation of 162 feet (49 meters) above sea level (Google Earth Pro, 2023).

Soil, Topography, and Hydrology

Data from *Web Soil Survey* for the project area do not indicate any unique soil types that would provide habitat for rare plants such as serpentinite or peat. The soil consists of fine loams with parent materials composed of colluvium derived from siltstone, residuum weathered from siltstone, and marine deposits derived from sedimentary rock.

The project area is situated within a marine terrace along the Pacific Coast located 11 miles south of Arcata and 5 miles southeast of downtown Eureka. The project area lies within the Freshwater Creek watershed which drains into the Pacific Ocean via Humboldt Bay. Refer to Figure 1 (Appendix C) for locator map.

The project area is mostly flat with a slight southwest facing aspect ranging from ~160 to ~220 feet in elevation. A class III watercourse exist 50 feet south and downslope of the project area.

Definitions

Special Status Plants and Plant Communities

Special status plants include taxa that are listed under the Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA) in addition to plants which meet the definition of rare or endangered under the California Environmental Quality Act (CEQA). CDFW recommends that plants on California Rare Plant Ranks (CRPR) Lists 1A (presumed extinct or extirpated), 1B (rare, threatened, or endangered in California and elsewhere), 2A (presumed extirpated) and 2B (rare, threatened, or endangered in California but more common elsewhere), or other species that warrant consideration based on local or biological significance, be addressed during California Environmental Quality Act (CEQA) review of proposed projects. Plants of rank 3 and 4, which are under review and watch lists respectively, are addressed by Naiad Biological Consulting, and may warrant consideration under CEQA if potential or cumulative impacts to the plant exist.

CDFW's natural community rarity rankings follow NatureServe's 2012 *NatureServe Conservation Status Assessment: Methodology for Assigning Ranks*, in which all alliances are listed with a global (G) and (S) rank. NCSC are those natural communities that are ranked S1 to S3 (CDFW, 2023), where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

Methods

Pre-Site Visit Data Compilation and Preparation

Prior to conducting the field surveys, the following database information was reviewed to determine the location and types of botanical resources that possibly exist in the survey area. This pre-field investigation included searches of the California Natural Diversity Database (CNDDDB, 2023) and the California Native Plant Society's *Inventory of Rare and Endangered Plants* (CNPS, 2023). This list includes CRPR (California Rare Plant Rank) species that have been observed within a 9-quad search centered on the Arcata South quadrangle. USGS quadrangles within the search area include Arcata North (4012481), Blue Lake (4012388), Tyee City (4012482), Eureka (4012472), Arcata South (4012318), Korbel (4012378), Fields Landing (4012462), McWhinney Creek (4012461), and Iaquia Buttes (4012368). The results of the project's scoping are presented below in Table 1 (Appendix 1).

Reference Populations

Reference populations were used to determine the timing of seasonally appropriate surveys. The following reference populations of rare plants were used for this project:

- *Montia howellii* located 52 miles south of the project area, near the Baxter Environmental Camp in Humboldt Redwoods State Park, was observed in bloom April 3rd, 2023.
- *Pleuropogon refractus* located 77 miles north of the project area, in the Mill Creek Campground in Del Norte Coast Redwoods State Park, was observed in bloom on June 29th, 2023.
- *Erythronium revolutum* located 52 miles south of the project area, near the Baxter Environmental Camp in Humboldt Redwoods State Park, was observed in bloom April 24th, 2023.

Botanical Field Survey and Habitat Investigation

The botanical field survey for this project was completed by Sarah Mason. Sarah holds a BS in Botany from Humboldt State University and is currently employed as an Environmental Services Intern with California State Parks in the North Coast Redwoods District. Sarah has worked as an assistant botanist with Caltrans, a Botanical Technician for the Bitterroot and Klamath National Forests, and studied bumble bee communities in the Marble Mountains. Sarah has experience in rare plant identification, protection and monitoring of rare plants, and teaching plant taxonomy at the university level.

Surveys were floristic in nature and conducted in a manner consistent with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). Plants were identified to the lowest taxonomic level necessary to ensure that they were not a species of concern. Plants not identifiable in the field were identified off site with the use of *The Jepson Manual, Vascular Plants of California*. Other resources used to identify plants can be found in the reference section towards the end of this report.

Botanical surveys were conducted throughout the areas proposed for development operations and the associated road system. Surveys were conducted in an intuitive meander focused on areas likely to provide habitat for rare plant species and/or potentially affected (directly or indirectly) by construction operations. These areas include but are not limited to existing permanent and seasonal roads, new road construction, road points and crossings, forest openings (i.e., meadows, landings, and cut banks), springs and watercourses. Refer to Figure 2 (Appendix C) for the survey routes.

Results

Habitats Observed

The surrounding habitat is dominated by redwood forest and woodland (S3). The redwood forest is co-dominated by Douglas fir (*Pseudotsuga menziesii*) with an understory of evergreen huckleberry (*Vaccinium ovatum*) and Western sword fern (*Polystichum munitum*). The project area habitat is a highly altered and disturbed marine terrace. Wetland habitat was identified on May 13th, 2023, by Joe Seney. Identified wetlands are in the southwest corner of the project area and are dominated by lady fern (*Athyrium filix-femina*), deer fern (*Struthiopteris spicant*), small-fruited sedge (*Scirpus microcarpus*), and Pacific rush (*Juncus effusus* ssp. *pacificus*). Refer to wetland delineation report for further inquiry. Much of the northeast section of the project area is dominated by several invasive species including jubata grass (*Cortaderia jubata*), Scotch broom (*Cytisus scoparius*), and Spanish heather (*Erica lusitanica*). See figures 3, 4, and 5 (Appendix D) for example photos of project area and habitats present.

Species Observed

No CRPR 1 or 2 plants were encountered in the project area. A total of 86 plant taxa were observed in the project area, of which approximately 22% are invasive species. Refer to Table 2 (Appendix B) for a list of species observed in the project area.

Conclusion and Discussion

Conclusion

Although no listed species were observed during the field survey, it is possible that previous land use practices and climate and weather patterns may have affected survey results. Heatwaves or drought during the growing season or in previous years can affect phenology and detection probability. Spring was unusually cool and wet, which may have delayed flowering for several species, making them more difficult to detect. Therefore, documented taxa are not necessarily an exhaustive list of special status species growing in the project area.

Recommendations

Due to the low quality of habitat, from prior land use practices and high coverage of invasive species, no sensitive plant species were encountered during the botanical field survey. Sensitive habitat and communities do exist, and it is recommended the project adhere to construction plans for potential impacts. No further botanical surveys are recommended.

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Appendix A. Results from database search

Table 1. Special-Status Plant Species –Arcata South and surrounding 7.5 min quadrangles.

Scientific Name	Common Name	CRPR	Blooming Period	Habitat	Microhabitat	Elevation (meters)	Potential of Occurrence
<i>Abronia umbellata</i> <i>var. breviflora</i>	pink sand-verbena	1B.1	Jun-Oct	Coastal dunes		0-10	unlikely
<i>Angelica lucida</i>	sea-watch	4.2	Apr-Sep	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)		0-150	unlikely
<i>Astragalus pycnostachyus</i> <i>var. pycnostachyus</i>	coastal marsh milk-vetch	1B.2	(Apr)Jun-Oct	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)		0-55	unlikely
<i>Astragalus rattanii</i> <i>var. rattanii</i>	Rattan's milk-vetch	4.3	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest	Gravelly, Streambanks	30-825	unlikely
<i>Cardamine angulata</i>	seaside bittercress	2B.2	(Jan)Mar-Jul	Lower montane coniferous forest, North Coast coniferous forest	Streambanks; wet areas	15-915	unlikely
<i>Carex arcta</i>	northern clustered sedge	2B.2	Jun-Sep	Bogs and fens, North Coast coniferous forest (mesic)		60-1400	unlikely
<i>Carex leptalea</i>	bristle-stalked sedge	2B.2	Mar-Jul	Bogs and fens, Marshes and swamps, Meadows and seeps (mesic)		0-700	somewhat likely
<i>Carex lyngbyei</i>	Lyngbye's sedge	2B.2	Apr-Aug	Marshes and swamps (brackish, freshwater)		0-10	somewhat likely
<i>Carex praticola</i>	northern meadow sedge	2B.2	May-Jul	Meadows and seeps (mesic)		0-3200	likely
<i>Castilleja ambigua</i> <i>var. humboldtensis</i>	Humboldt Bay owl's-clover	1B.2	Apr-Aug	Marshes and swamps (coastal salt)		0-3	somewhat likely
<i>Castilleja litoralis</i>	Oregon coast paintbrush	2B.2	Jun	Coastal bluff scrub, Coastal dunes, Coastal scrub	Sandy	15-100	unlikely

<i>Chloropyron maritimum ssp. palustre</i>	Point Reyes salty bird's-beak	1B.2	Jun-Oct	Marshes and swamps (coastal salt)		0-10	unlikely
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	4.3	Feb-Jun	North Coast coniferous forest, Riparian forest	Roadsides (sometimes), Seeps (sometimes), Streambanks	10-540	somewhat likely
<i>Collinsia corymbosa</i>	round-headed collinsia	1B.2	Apr-Jun	Coastal dunes		0-20	unlikely
<i>Coptis laciniata</i>	Oregon goldthread	4.2	(Feb)Mar-May(Sep-Nov)	Meadows and seeps, North Coast coniferous forest (streambanks)	Mesic	0-1000	somewhat likely
<i>Eleocharis parvula</i>	small spikerush	4.3	(Apr)Jun-Aug(Sep)	Marshes and swamps		1-3020	somewhat likely
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	4.3	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest	Rocky (sometimes), Sandy (sometimes)	45-1800	unlikely
<i>Erysimum menziesii</i>	Menzies' wallflower	1B.1	Mar-Sep	Coastal dunes		0-35	unlikely
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	Openings, Rocky, Serpentinite (sometimes)	100-1150	somewhat likely
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Mesic, Streambanks	0-1600	likely
<i>Fissidens pauperculus</i>	minute pocket moss	1B.2		North Coast coniferous forest (damp coastal soil)		10-1024	unlikely
<i>Fritillaria purdyi</i>	Purdy's fritillary	4.3	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest	Serpentinite (usually)	175-2255	unlikely
<i>Gilia capitata ssp. pacifica</i>	Pacific gilia	1B.2	Apr-Aug	Chaparral (openings), Coastal bluff scrub, Coastal prairie, Valley and foothill grassland		5-1665	unlikely

<i>Gilia millefoliata</i>	dark-eyed gilia	1B.2	Apr-Jul	Coastal dunes		2-130	unlikely
<i>Glehnia littoralis</i> ssp. <i>leiocarpa</i>	American glehnia	4.2	May-Aug	Coastal dunes		0-20	unlikely
<i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Tracy's tarplant	4.3	(Mar-Apr)May-Oct	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest	Openings, Serpentinite (sometimes)	120-1200	unlikely
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	1B.2	Mar-Jun	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie		0-215	unlikely
<i>Hosackia gracilis</i>	harlequin lotus	4.2	Mar-Jul	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland	Roadsides; wetlands	0-700	somewhat likely
<i>Iliamna latibracteata</i>	California globe mallow	1B.2	Jun-Aug	Chaparral (montane), Lower montane coniferous forest, North Coast coniferous forest (mesic), Riparian scrub (streambanks)	Burned areas (often)	60-2000	unlikely
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	1B.2	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub		5-520	unlikely
<i>Lathyrus glandulosus</i>	sticky pea	4.3	Apr-Jun	Cismontane woodland		300-800	unlikely
<i>Lathyrus japonicus</i>	seaside pea	2B.1	May-Aug	Coastal dunes		1-30	unlikely
<i>Lathyrus palustris</i>	marsh pea	2B.2	Mar-Aug	Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest	Mesic	1-100	somewhat likely
<i>Layia carnosa</i>	beach layia	1B.1	Mar-Jul	Coastal dunes, Coastal scrub (sandy)		0-60	unlikely
<i>Lilium kelloggii</i>	Kellogg's lily	4.3	(Feb)May-Aug	Lower montane coniferous forest, North Coast coniferous forest	Openings, Roadsides	3-1300	somewhat likely

<i>Lilium occidentale</i>	western lily	1B.1	Jun-Jul	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest (openings)		2-185	somewhat likely
<i>Lilium rubescens</i>	redwood lily	4.2	(Mar)Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Roadsides (sometimes), Serpentinite (sometimes)	30-1910	somewhat likely
<i>Listera cordata</i>	heart-leaved twayblade	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest		5-1370	somewhat likely
<i>Lycopodium clavatum</i>	running-pine	4.1	Jun-Aug(Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	Edges (often), Openings, Roadsides	45-1225	somewhat likely
<i>Mitellastra caulescens</i>	leafy-stemmed mitrewort	4.2	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Mesic, Roadsides (sometimes)	5-1700	unlikely
<i>Monotropa uniflora</i>	ghost-pipe	2B.2	Jun-Aug(Sep)	Broadleafed upland forest, North Coast coniferous forest		10-550	somewhat likely
<i>Montia howellii</i>	Howell's montia	2B.2	(Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	Roadsides (sometimes), Vernal Mesic	0-835	likely
<i>Noccaea fendleri</i> ssp. <i>californica</i>	Kneeland Prairie pennycress	1B.1	May-Jun	Coastal prairie (serpentinite)		760-815	unlikely
<i>Oenothera wolfii</i>	Wolf's evening-primrose	1B.1	May-Oct	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	Mesic (usually), Sandy	3-800	unlikely
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2B.2	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	Roadsides (sometimes)	30-650	unlikely
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	(Mar-Apr)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Serpentinite (sometimes)	30-1310	somewhat likely

<i>Pityopus californicus</i>	California pinefoot	4.2	(Mar-Apr)May-Aug	Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Mesic	15-2225	somewhat likely
<i>Platismatia lacunosa</i>	crinkled rag lichen	2B.3		North Coast coniferous forest, Riparian woodland	Usually growing on Alnus	20-2000	somewhat likely
<i>Pleuropogon refractus</i>	nodding semaphore grass	4.2	(Feb-Mar)Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	Mesic	0-1600	likely
<i>Ribes laxiflorum</i>	trailing black currant	4.3	Mar-Jul(Aug)	North Coast coniferous forest	Roadsides (sometimes)	5-1395	somewhat likely
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2	(Mar)Apr-Aug	Broadleaved upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	Disturbed areas (often)	0-730	likely
<i>Sidalcea malviflora ssp. patula</i>	Siskiyou checkerbloom	1B.2	(Mar)May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	Roadsides (often); often road cuts	15-1230	somewhat likely
<i>Sidalcea oregana ssp. eximia</i>	coast checkerbloom	1B.2	Jun-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest		5-1340	somewhat likely
<i>Silene scouleri ssp. scouleri</i>	Scouler's catchfly	2B.2	(Mar-May)Jun-Aug(Sep)	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland		0-600	unlikely
<i>Spergularia canadensis var. occidentalis</i>	western sand-spurrey	2B.1	Jun-Aug	Marshes and swamps (coastal salt)		0-3	unlikely
<i>Sulcaria spiralifera</i>	twisted horsehair lichen	1B.2		Coastal dunes (SLO Co.), North Coast coniferous forest (immediate coast)	Usually on conifers.	0-90	unlikely
<i>Tiarella trifoliata var. trifoliata</i>	trifoliolate laceflower	3.2	(May)Jun-Aug	Lower montane coniferous forest, North Coast coniferous forest	Edges, Streambanks; moist shady banks	170-1500	unlikely
<i>Trichodon cylindricus</i>	cylindrical trichodon	2B.2		Broadleaved upland forest, Meadows and seeps, Upper montane coniferous forest	Roadsides, Sandy; exposed soil	50-2002	unlikely

<i>Usnea longissima</i>	Methuselah's beard lichen	4.2		Broadleafed upland forest, North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers	50-1460	unlikely
<i>Viola palustris</i>	alpine marsh violet	2B.2	Mar-Aug	Bogs and fens (coastal), Coastal scrub (mesic)		0-150	unlikely

Appendix B. Plant Species Observed

Table 2. List of plant species encountered during surveys.

Botanical Name	Common Name	Origin
Trees		
<i>Abies grandis</i>	grand fir	Native
<i>Alnus rubra</i>	red alder	Native
<i>Picea sitchensis</i>	sitka spruce	Native
<i>Pseudotsuga menziesii</i>	Douglas fir	Native
<i>Quercus chrysolepis</i>	canyon live oak	Native
<i>Sequoiua sempervirens</i>	redwood	Native
Shrubs		
<i>Ceanothus thyrsiflorus</i>	blue blossom	Native
<i>Cotoneaster franchetii</i>	contoneaster	Cal-IPC: Moderate
<i>Crataegus monogyna</i>	hawthorn	Cal-IPC: Limited
<i>Cytisus scoparius</i>	Scotch broom	Cal-IPC: High
<i>Erica lusitanica</i>	Spanish heather	Cal-IPC: Limited
<i>Frangula purshiana</i>	cascara	Native
<i>Fuchsia magellanica</i>	fuchsia	Non-native
<i>Gaultheria shallon</i>	salal	Native
<i>Genista monospeulana</i>	French broom	Cal-IPC: High
<i>Hedera helix</i>	English ivy	Cal-IPC: High
<i>Ilex aquifolium</i>	English holly	Cal-IPC: Moderate
<i>Lonicera involucrata</i>	twinberry	Native
<i>Morella californica</i>	wax myrtle	Native
<i>Ribes sanguineum</i>	red flowering currant	Native
<i>Rubus armeniacus</i>	Himalayan blackberry	Cal-IPC: High
<i>Rubus parviflorus</i>	thimbleberry	Native
<i>Rubus ursinus</i>	California blackberry	Native
<i>Syringia vulgaris</i>	lilac	Non-native
<i>Vaccinium ovatum</i>	California huckleberry	Native
<i>Vaccinium parvifolium</i>	red huckleberry	Native
Grasses & Graminoids		
<i>Agrostis capillaris</i>	colonial bentgrass	Non-native
<i>Anthoxanthum odoratum</i>	sweet vernal grass	Cal-IPC: Moderate
<i>Bromus catharticus</i> var. <i>elatus</i>	Chilean brome	Non-native
<i>Carex leptopoda</i>	slender-footed sedge	Native

<i>Carex subbracteata</i>	small bracted sedge	Native
<i>Cortaderia jubata</i>	purple pampass grass	Cal-IPC: High
<i>Dactylis glomerata</i>	orchard grass	Cal-IPC: Limited
<i>Festuca arundinacea</i>	tall fescue	Cal-IPC: Moderate
<i>Holcus lanatus</i>	velvet grass	Cal-IPC: Moderate
<i>Juncus effusus</i> ssp. <i>pacificus</i>	Pacific rush	Native
<i>Juncus patens</i>	spreading rush	Native
<i>Luzula comosa</i>	hairy wood rush	Native
<i>Luzula parviflora</i>	wood rush	Native
<i>Scirpus microcarpus</i>	small fruited bulrush	Native
<i>Trisetum canescens</i>	tall false oats	Native
Forbs		
<i>Allium triquetrum</i>	white flowered onion	Non-native
<i>Bellis perennis</i>	English daisy	Non-native
<i>Boykinia occidentalis</i>	Western brook foam	Native
<i>Cerastium glomeratum</i>	sticky mouse-ear chickweed	Non-native
<i>Claytonia perfoliata</i>	miner's lettuce	Native
<i>Claytonia sibirica</i>	candy flower	Native
<i>Crepis capillaris</i>	smooth hawksbeard	Native
<i>Crococsmia Xcrococsmiiflora</i>	crococsmia	Cal-IPC: Limited
<i>Daucus carota</i>	Queen Anne's lace	Non-native
<i>Digitalis purpurea</i>	foxglove	Cal-IPC: Limited
<i>Epilobium ciliatum</i>	willowherb	Native
<i>Epilobium ciliatum</i>	willowherb	Native
<i>Galium triflorum</i>	sweet bedstraw	Native
<i>Gamochaeta ustulata</i>	featherweed	Native
<i>Hypochaeris radicata</i>	rough cat's ear	Cal-IPC: Moderate
<i>Iris douglasiana</i>	Douglas iris	Native
<i>Lapsana communis</i>	common nipplewort	Non-native
<i>Leucanthemum vulgare</i>	oxe eye daisy	Cal-IPC: Moderate
<i>Linum bienne</i>	pale flax	Non-native
<i>Lysimachia arvensis</i>	scarlet pimpernel	Non-native
<i>Lysimachia latifolia</i>	Pacific starflower	Native
<i>Marah oregana</i>	coast man-root	Native
<i>Myosotis latifolia</i>	broadleaved forget-me-not	Cal-IPC: Limited
<i>Oenanthe sarmentosa</i>	water parsley	Native
<i>Oxalis oregana</i>	redwood sorrel	Native

<i>Plantago lanceolata</i>	English plantain	Non-native
<i>Plantago major</i>	common plantain	Non-native
<i>Prosartes smithii</i>	fairybells	Native
<i>Prunella vulgaris</i>	self heal	Native
<i>Ranunculus repens</i>	creeping butercup	Cal-IPC: Limited
<i>Rumex crispus</i>	curly dock	Non-native
<i>Sanicula crassicaulis</i>	Pacific sanicle	Native
<i>Stachys mexicana</i>	Mexican hedgenettle	Native
<i>Stellaria media</i>	chickweed	Non-native
<i>Taraxacum officinale</i>	dandelion	Non-native
<i>Tolmiea diplomenziesii</i>	pig a back	Native
<i>Torilis nodosa</i>	short sock-destroyer	Non-native
<i>Trifolium campestre</i>	hop clover	Non-native
<i>Trifolium subterraneum</i>	subterranean clover	Non-native
<i>Trillium ovatum</i> ssp. <i>ovatum</i>	Western trillium	Native
<i>Vicia sativa</i>	spring vetch	Non-native
<i>Viola sempervirens</i>	redwood violet	Native
Ferns		
<i>Athyrium filix-femina</i>	lady fern	Native
<i>Equisetum arvense</i>	common horsetail	Native
<i>Polystichum munitum</i>	western sword fern	Native
<i>Pteridium aquilinum</i>	western bracken fern	Native
<i>Struthiopteris spicant</i>	deer fern	Native

Appendix C. Maps

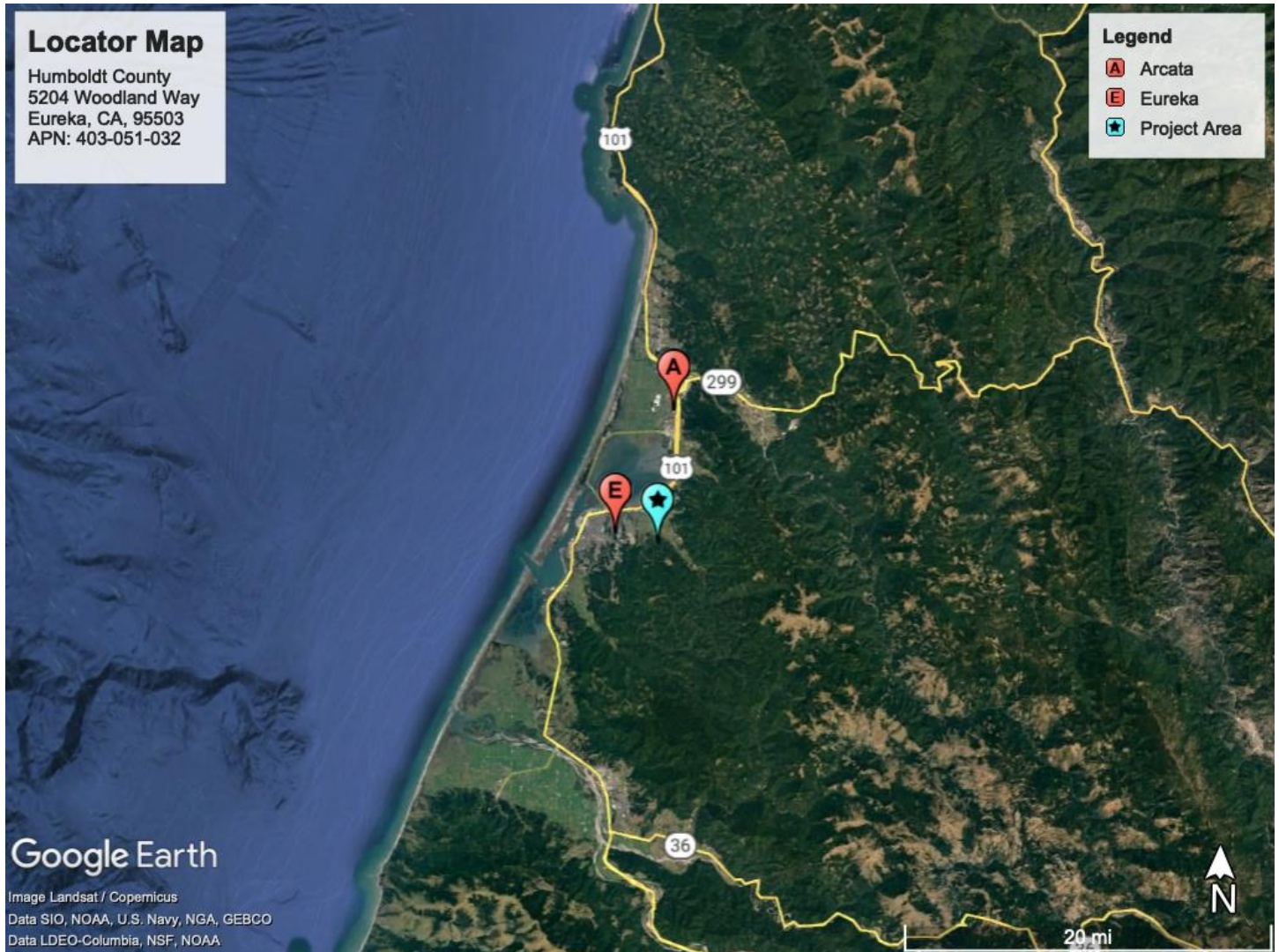


Figure 1. Locator Map of Project Area (blue star) located at 5204 Woodland Way, Eureka, California 11 miles south of Arcata (red “A”) and 4.8 miles east of downtown Eureka (red “E”).

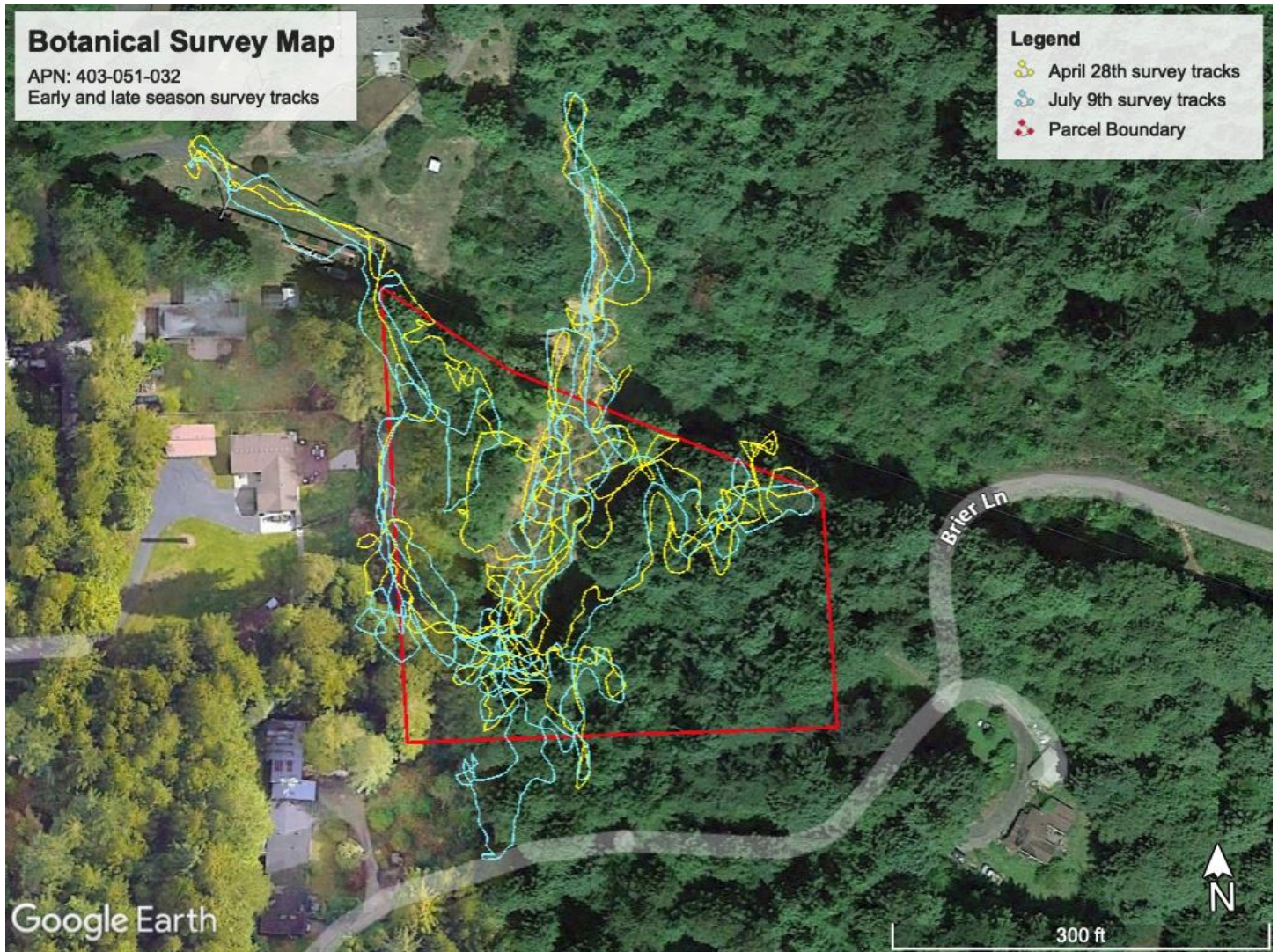


Figure 2. Map of project area and survey tracks.

Appendix D. Project Area and Habitat



Figure 3. Survey area, facing southwest, dominated by several invasive species including jubata grass (*Cortaderia jubata*), Scotch broom (*Cytisus scoparius*), and Spanish heather (*Erica lusitanica*). Regeneration of Sitka Spruce, Douglas fir and red alder occurring in project area as well.



Figure 4. Project area's southwestern edge, facing northeast. Several wetland indicator species present in the southwest corner of project area. Second growth redwood forest surrounds project area.



Figure 5. Class III watercourse in surrounding redwood forest and woodland with an understory of evergreen huckleberry (*Vaccinium ovatum*) and Western sword fern (*Polystichum munitum*).

Appendix C

AQUATIC RESOURCES DELINEATION REPORT

BIOLOGICAL RESOURCES ASSESSMENT

Nick Bowman Construction Inc.

5204 Woodland Way
Eureka, CA, 95503

Assessor Parcel Number (APN):

403 – 051 – 032

March 2024



Aquatic Resources Delineation Report
5204 Woodland Way, Eureka, California 95503

APN# 403-051-032



July 2023

Prepared for:

Nick Bowman Construction

7201 Wistira Way
Carlsbad, CA 92011

Prepared by:

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Executive Summary

Landowners and associated contractors are evaluating residential house design alternatives. The landowner requested assistance in identifying and mapping of aquatic resources, including wetlands, within the parcel as part of the anticipated compliance requirements. Wetland scientist Joe Seney conducted an investigation of aquatic resources and delineated wetlands on Humboldt County parcel APN 403-051-032 on May 13th and July 1st, 2023. The parcel is located in Humboldt County, California, near the town of Eureka. This parcel is located approximately five miles southeast of downtown Eureka within the Freshwater Creek Watershed. The parcel is approximately 2.60 acres in size.

The survey was conducted in accordance with the three-parameter method of the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the 2010 Regional Supplement: Western Mountains, Valleys and Coast Region. The US Army Corps of Engineers and California North Coast Regional Water Quality Board regulates wetlands and other waters under section 404 of the Clean Water Act (CWA). The USACE defines “wetlands” as those areas that exhibit hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were determined when at least one of the three parameters were no longer present. In addition, I used LiDAR derived one-foot and two-foot contours to delineate wetlands and channels. Wetland -upland boundaries were evident based on the presence of a transition from a dense rush-fern plant community to a sparse grass forb plant community, and the presence of a grayish, iron depleted soil horizon in the mapped wetland soils, and a compacted reddish-orange soil in adjacent non-wetland areas.

On May 13th, 2023 seven soil pits were excavated to a depth of 15 to 20 inches. These seven soil pit locations exhibited hydrophytic vegetation and hydric soil features, such as depleted horizons with iron concentrations within the upper 12 inches of the soil profiles. Soils were significantly disturbed due to site preparation; removal of 5 to 15 feet of soil and placement of 1 to 2 feet of reddish orange soil to level and smooth out the site. For each soil profile examined I determined soil horizons, soil texture, soil moist color, described redoximorphic features present, and documented depth to groundwater and soil saturation if present. On July 1st, 2023, during a second site visit, I observed groundwater seeping into a couple of soil pits at a depth of 11 to 16 inches.

There are 0.07 acres (3,070 sq ft) of USACE jurisdictional three-parameter wetland. Three-parameter wetlands are classified as Palustrine, Emergent, Herbaceous, Seasonally saturated. In addition, I mapped 293 ft of Class III watercourse. The water source appears to springs and wet season overland flow. Potential wetland setbacks of 50, 100 or 150 ft and a 50 ft setback for the Class III watercourse are displayed on the Aquatic resources map.

Water sources are springs/seeps and wet season overland flow. Wetland hydrology is probably enhanced by very low permeability of the clay and silty clay soils, which act as a shallow aquitard, the geomorphic position, lower elevation, downslope of the potential building site and concave shape of the wetlands. Wetland Hydrology Indicators identified were groundwater, in the upper 12” of soil, (A2), saturated soil, in the upper 12” of soil, (A3), geomorphic position (D2), and shallow aquitard (D3), FAC-neutral test (D5).

Dominate plants in the three-parameter wetlands are common rush (*Juncus effusus*, FACW), lady fern (*Athyrium filix-femina*, FAC), deer fern and (*Blechnum spicant*, FAC). Other plants present in some plots are: red alder (*Alnus rubra*, FAC), Sitka spruce, (*Picea sitchensis*, FAC), and paniced bulrush (*Scirpus microcarpus*, FACW).

Methods

The survey was conducted in accordance with the three-parameter method of the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the 2010 Regional Supplement: Western Mountains, Valleys and Coast Region (Version 2.0) (USACE, 1987 and 2010). The US Army Corps of Engineers and California North Coast Regional Water Quality Board regulates wetlands and other waters under section 404 of the Clean Water Act (CWA). The USACE defines “wetlands” as those areas that exhibit hydric soils, hydrophytic vegetation, and wetland hydrology. For purposes of identifying wetlands protected under the CWA when requesting a Nationwide or Individual CWA Permit from the USACE, wetland maps should be no more than five years old. The Army Corps of Engineers also has jurisdiction and permit authority over other “Waters of the U.S.” – those additional aquatic systems such as streams, rivers, and mudflats, which are also protected by the CWA. The State of California has jurisdiction and permit authority over “Waters of the State”, which includes “isolated wetlands” (California State Water Resources Control Board, 2019). In addition, I used LiDAR derived one-foot and two-foot contours to delineate potential wetlands and channels in the project area.

Climate

Climate exerts an influence on soil, hydrology, and vegetation at regional, local, and micro-scales. Regionally, cool, wet winters and nearly rainless summers characterize the climate of Humboldt County, California. Precipitation in the region follows a very strong seasonal pattern of a wet season (October to April) and a dry season (May to September). The average annual precipitation recorded (2000-2023) at the Eureka Weather Station is 38.7 inches and 22.47 inches from January 1 through June 30th (Table 1). From January 1st through June 30, 2023, the area received 24.08 inches of precipitation compared to the 2000-2023 mean of 22.47 inches, 107 percent of normal. Precipitation for the months of April, May and June 2023 was significantly drier than normal, 3.86 inches compared to 5.72 inches (68%).

Wetland Hydrology

Presence or absence of wetland hydrology is one of the three parameters used by the 1987 USACE manual (along with hydric soils and hydrophytic vegetation) to delineate wetland boundaries. Although wetland hydrology indicators are important in delineating wetlands, they are the least credible compared to soil and vegetation indicators due to variability of seasonal and local weather patterns that influence hydrology. Wetland hydrology exists at a site when it is flooded (A1), ponded (A1), or has groundwater within 12 inches of the ground surface (A2) for 14 or more consecutive days during the growing season in at least 5 out of 10 years. Wetland hydrology is the most seasonal and transitory of the three parameters.

The USACE manual describes primary and secondary wetland hydrology “Indicators” that allow delineators to evaluate hydrology throughout the growing season, even late in the dry season when saturation in the upper part of the soil may no longer be present. Examples of primary indicators include surface water (A1), a high-water table (A2) (groundwater within 12 inches of soil surface), saturated soil (A3), oxidized iron along live root channels or on live root surfaces (C3), sparsely vegetated concave surfaces (B8), water-stained leaves (B9), sediment deposits (B2), stunted vegetation or stressed plants (D1) or drainage patterns (B10). Examples of secondary indicators include presence of a “dry season water table” between 12 and 24 inches below the ground surface (C2), a shallow aquitard (D3), a dense layer within 24 inches of the soil surface, the FAC Neutral Test (D5), and “geomorphic position” (D2) of the site (e.g., toe slopes, drainageways, depressions, and swales). The presence of one primary or two secondary indicators confirms wetland hydrology.

Soils

The 1987 *Wetlands Delineation Manual* (USACE 1987) suggests evaluating existing soil maps before conducting in-field wetland delineations. Soils mapped in the parcel are primarily the Salmoncreek, Tepona and Rootcreek soil series (USDA-NRCS, 2023 online access, July 2023).

Salmoncreek series consist of very deep, poorly drained soils formed in colluvium and residuum derived from siltstone. These are soils are on moderately steep to steep hillslopes. A typical soil profile consists of a 2 to 4-inch-thick layer of decomposing organic material; 4 to 10 inches of grayish brown silt loam over 40 to 60 inches of pale brown to light gray silty clay loam. These (sometimes hydric) soils tend to have redoximorphic features within 4 to 10 inches of the soil surface due to soils be saturated for at least 14 consecutive days during the growing season in at least five out of ten years.

Tepona series consist of very deep moderately well drained soils formed in marine sediments. A typical soil profile consists of a 1 to 3 inches thick layer of decomposing organic material, 14 to 25 inches of very dark brown loam over 35 to 60 inches of dark yellowish brown to dark grayish brown sandy loam. These soils do not have redoximorphic features within the upper 40 inches of the soil profile.

Rootcreek series consist of very deep moderately well drained soils formed in colluvium and residuum derived from siltstone. These are soils are on moderately steep to steep hillslopes. A typical soil profile consists of a 1 to 3-inch-thick layer of decomposing organic material; 2 to 25 inches of very dark grayish brown silt loam over 40 to 60 inches of light olive to dark grayish brown silty clay loam. These soils have redoximorphic features at a depth of 20 to 40 inches in the soil profile.

Hydric soils are one of the three parameters used to delineate wetlands. Most hydric soils exhibit characteristic, identifiable morphologies that result from anaerobic conditions and persist in the soil during both saturated (reduced) and dry (oxidized) conditions in the upper 12 inches of soil. Examples include a mottled color pattern resulting from reduction and reoxidation of iron or manganese, and accumulation of organic matter due to increased plant production and slow decomposition rates in saturated environments. Hydric soil field indicators display characteristic morphologies as a result of the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment (USACE, 2010).

Hydrophytic Vegetation

Predominance of “hydrophytic” (wetland) vegetation is one of the three parameters used to identify wetlands. According to the USACE wetland delineation procedures, calls regarding presence or absence of hydrophytic vegetation are based on the “wetland indicator status” of each dominant species in the plant community being evaluated. Lichvar and others (2016) classified plant species into indicator status categories ranked from wettest to driest as follows: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), Upland (UPL), and Not Listed (NI). Plant communities are considered to be hydrophytic (wetland vegetation) if greater than 50 percent of the plant cover by dominant species are ranked as OBL, FACW, or FAC (Dominance Test). The FAC-Neutral Test was calculated and used as a Wetland Hydrology secondary indicator, and is essentially the same as the Dominance Test, but it disregards dominant facultative plant species. See Table 2 for the list of plant species identified during field work.

Results

The survey was conducted in accordance with the three-parameter method of the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the 2010 Regional Supplement: Western Mountains, Valleys and Coast Region. The US Army Corps of Engineers and California North Coast Regional Water Quality Board regulates wetlands and other waters under section 404 of the Clean Water Act (CWA). The USACE defines “wetlands” as those areas that exhibit hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were determined when at least one of the three parameters were no longer present. In addition, I used LiDAR derived one-foot and two-foot contours to delineate wetlands and channels. Wetland -upland boundaries were evident based on the presence of a transition from a dense rush-fern plant community to a sparse grass forb plant community, and the presence of a grayish, iron depleted soil horizon in the mapped wetland soils, and a compacted reddish-orange soil in adjacent non-wetland areas (Photos 1, 3 and 4).

On May 13th, 2023 seven soil pits were excavated to a depth of 15 to 20 inches (Tables 3a and 3b). These seven soil pit locations exhibited hydrophytic vegetation and hydric soil features, such as depleted horizons with iron concentrations within the upper 20 inches of the soil profiles (Photo 2). Soils were significantly disturbed due to site preparation; removal of 5 to 15 feet of soil and placement of 1 to 2 feet of reddish orange soil to level and smooth out the site (Photo 2). For each soil profile examined I determined soil horizons, soil texture, soil moist color, described redoximorphic features present, and documented depth to groundwater and soil saturation if present. On July 1st, 2023, during a second site visit, I observed groundwater seeping into a couple of soil pits at a depth of 11 to 16 inches (Photo 4).

There are 0.07 acres (3,070 sq ft) of USACE jurisdictional three-parameter wetland (Figure 2). Three-parameter wetlands are classified as Palustrine, Emergent, Herbaceous, Seasonally saturated. In addition, I mapped 293 ft of Class III channel. The water source appears to springs and wet season overland flow. Potential wetland setbacks of 50, 100 or 150 ft and a 50 ft setback for the Class III watercourse are displayed on the Aquatic resources map (Figure 2).

Hydrology

Water sources are springs/seeps and wet season overland flow. Wetland hydrology is probably enhanced by very low permeability of the clay and silty clay soils, which act as a shallow aquitard, the geomorphic position, lower elevation, downslope of the potential building site and concave shape of the wetlands.

Wetland Hydrology Indicators identified were groundwater, in the upper 12” of soil, (A2), saturated soil, in the upper 12” of soil, (A3), geomorphic position (D2), and shallow aquitard (D3), FAC-neutral test (D5) (Table 3).

Soils

Of the seven locations I described soils, three soil profiles exhibited a hydric soil indicator and four profiles did not (Table 3). The hydric soil indicators identified were Depleted Below Dark Surface (A11) or Depleted Matrix (F3) (Photo 2). Due to the removal of a significant amount of soil and the use of reddish-orange subsoil to level the site, hydric soil indicators were not present in all of the soil profiles described, within the upper 12 inches. Reddish-orange color soils tend to be iron rich, and usually do not exhibit typical hydric soil indicators, although many reddish-orange color near soil surface soil layers did exhibit iron concentrations and iron depletions.

Vegetation

Dominate plants in the three-parameter wetlands are common rush (*Juncus effusus*, FACW), lady fern (*Athyrium filix-femina*, FAC), deer fern and (*Blechnum spicant*, FAC) (Table 2). Other plants present in

some plots are: red alder (*Alnus rubra*, FAC), Sitka spruce, (*Picea sitchensis*, FAC), and paniced bulrush (*Scirpus microcarpus*, FACW).

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Aquatic Resources Map for 5204 Woodland Way, Eureka, CA 95503, APN: 403-051-032

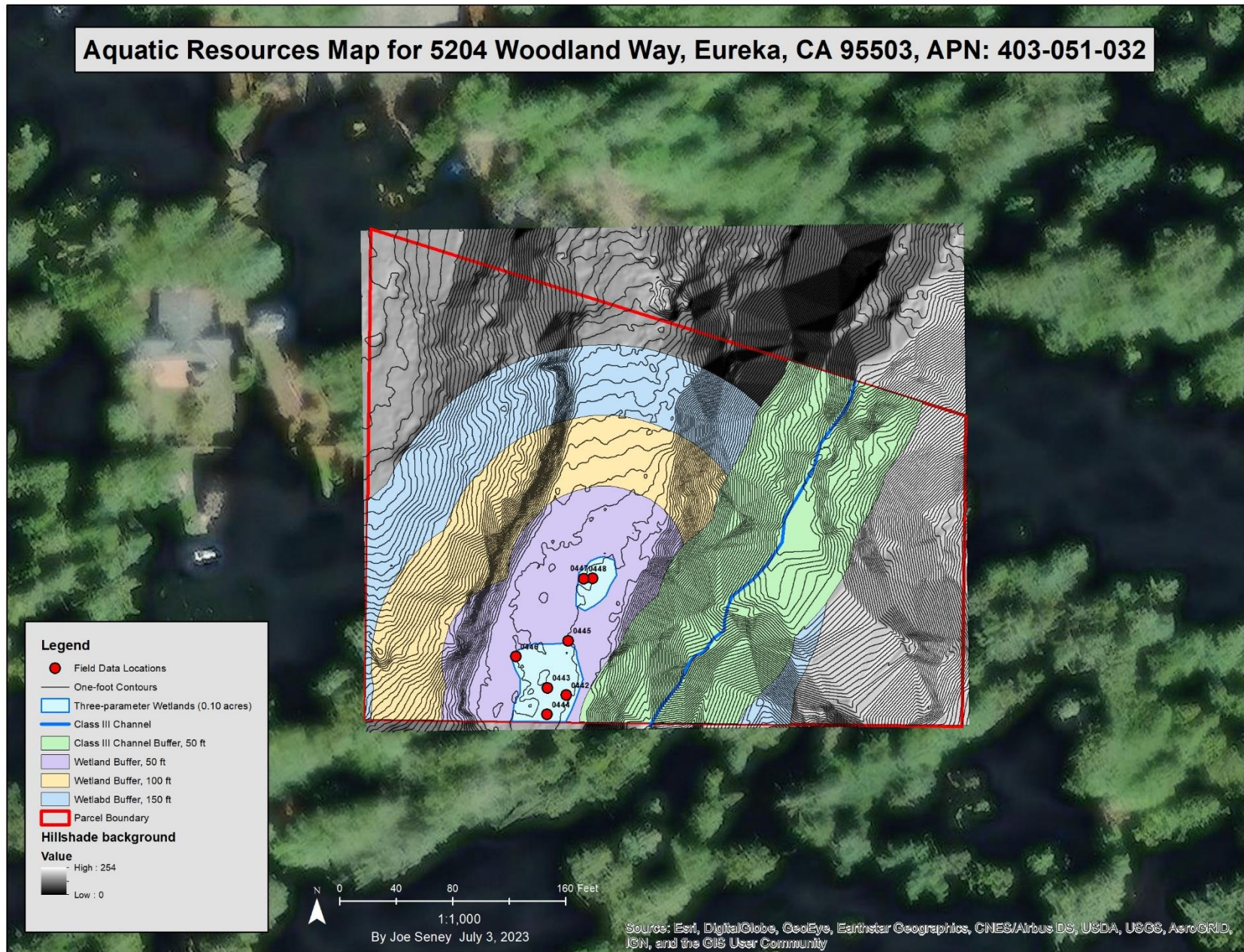


Figure 2. Aquatic Resources Map for 5204 Woodland Way, APN# 403-051-032.

Table 1. Year to date monthly mean precipitation amounts (inches) for Eureka Weather Station on Woodley Island, CA.

Time Frame	Jan	Feb	Mar	Apr	May	Jun	Year to Date
2023	7.89	5.74	9.25	2.66	0.97	0.23	24.08
2000-2023	6.13	5.13	5.49	3.52	1.49	0.71	22.47

Table 2. Plant Species Identified during field work.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Wetland Plant Status</u>
<i>Alnus rubra</i>	red alder	FAC
<i>Anthoxanthum odoratum</i>	vernal grass	FACU
<i>Athyrium filix-femina</i>	Lady fern	FAC
<i>Blechnum spicant</i>	deer fern	FAC
<i>Cortaderia jubata</i>	pampas grass	FACU
<i>Holcus lanatus</i>	velvetgrass	FAC
<i>Juncus effusus</i>	common rush	FACW
<i>Picea sitchensis</i>	Sitka spruce	FAC
<i>Polystichum munitum</i>	sword fern	FACU
<i>Scirpus microcarpus</i>	panicled bulrush	FACW
<i>Vaccinium ovatum</i>	evergreen huckleberry	FACU

Table 3a. Soil profile descriptions and hydrology data

Plot #	442	443	444	445
Wetland (3-parameter)	Yes	Yes	Yes	No
Location	40.778998	40.779012	40.77886	40.779104
	-124.100842	-124.100891	-124.100875	-124.100839
Local Relief	depression	planar	depression	convex
Hydrology	Yes	Yes	Yes	No
Water Table	na	na	11"	na
Saturation	3"	4"	na	na
Oxidized Rhizospheres	na	na	na	na
Geomorphic position	Yes	No	Yes	No
Indicators	A3, D2, D3, D5	A3, D3, D5	A2, D2, D3, D5	D3
Soils	-	-	-	-
Layer 1	0-3" cl 7.5YR 3/2	0-4" gravel	0-4" cl 7.5YR 3/2	0-6" c 5YR 4/6, 5% Fe Conc 5YR 5/8
Layer 2	3-9" c 7.5YR 4/2, 10% Fe con 5YR 4/6	4-5" grvcl 7.5YR 3/2	4-8" c 7.5YR 4/2, 5% Fe con 5YR 4/6	6-15" c 5YR 5/6, 20% Fe conc 10YR 4/6,
Layer 3	9-13" c 5YR 5/6, 20% Fe con 2.5YR 5/8 10% Fe dep 7.5YR 3/1 platy structure	5-11" c 5YR 4/6, 5% fe conc 5YR 5/8	8-14" c 5YR 5/6, 20% Fe con 2.5YR 5/8	15-20" c 15% Fe dep 10YR 4/1 platy structure
Layer 4	13-20" c 10YR 4/1	11-16" c 7.5YR 4/1, 5% Fe conc 5YR 5/8	14-20" c 10YR 4/1	
Hydric Soil	Yes	Yes	Yes	Yes
Indicators	F3	A11	None	none
Vegetation				
Species 1	<i>Juncus effusus</i> 60% FACW/Dom	<i>Juncus effusus</i> 55% FACW/Dom	<i>Juncus effusus</i> 55% FACW/Dom	<i>Juncus effusus</i> 50% FACW/Dom
Species 2	<i>Scirpus microcarpus</i> 20% FACW/Dom	<i>Holcus lanatus</i> 10% FAC	<i>Scirpus microcarpus</i> 15% FACW	<i>Picea sitchensis</i> 20% FAC/Dom
Species 3	<i>Blechnum spicant</i> 10% FAC	<i>Scirpus microcarpus</i> 10% FACW	<i>Blechnum spicant</i> 10% FAC	Moss 30% ?/Dom
Species 4	<i>Athyrium filix-femina</i> 7% FAC	<i>Blechnum spicant</i> 10% FAC	<i>Athyrium filix-femina</i> 7% FAC	<i>Alnus rubra</i> 3% FAC
Species 5	<i>Picea sitchensis</i> 5% FAC/Dom	<i>Athyrium filix-femina</i> 5% FAC	<i>Polystichum munitum</i> 7% FACU	<i>Holcus lanatus</i> 3% FAC
Species 6		<i>Polystichum munitum</i> 5% FACU		<i>Anthoxanthum odoratum</i> 1% FACU
Dominant Species	FACW, FACW, FAC	FACW	FACW	FACW, FAC
Hydrophyic Vegetation	Yes	Yes	Yes	Yes
Pass FAC Neutral Test	Yes	Yes	Yes	Yes

Table 3b. Soil profile descriptions and hydrology data

Plot #	446	447	448
Wetland (3-parameter)	Yes	Yes	Yes
Location	40.779072	40.779226	40.779225
	-124.100973	-124.100779	-124.100802
Local Relief	depression	planar	depression
Hydrology	Yes	Yes	Yes
Water Table	na	na	na
Saturation	na	na	na
Oxidized Rhizospheres	na	na	na
Geomorphic position	Yes	No	Yes
Indicators	D2, D3	D2, D3	D2, D3
Soils	-	-	-
Layer 1	0-3" cl 7.5YR 3/2	0-4" cl 7.5YR 3/2	0-2" cl 7.5YR 3/2
Layer 2	3-10" c 5YR 4/6, 10% Fe con 2.5YR 5/6	4-8" c 7.5YR 4/2, 5% Fe con 5YR 4/6	2-8" c 7.5YR 4/2, 5% Fe con 5YR 4/6
Layer 3	10-15" c 5YR 5/6, 20% Fe con 2.5YR 5/8	8-17" c 5YR 5/6, 20% Fe con 2.5YR 5/8	8-17" c 5YR 5/6, 3% Fe con 2.5YR 5/8
	10% Fe dep 7.5YR 3/1 platy structure		
Layer 4			
Hydric Soil	Yes	Yes	Yes
Indicators	A11	none	none
Vegetation	-	-	-
Species 1	<i>Juncus effusus</i> 55% FACW/Dom	<i>Juncus effusus</i> 55% FACW/Dom	<i>Juncus effusus</i> 40% FACW/Dom
Species 2	<i>Cortaderia jubata</i> 5% FACU	<i>Holcus lanatus</i> 10% FAC	<i>Cortaderia jubata</i> 5% FACU
Species 3	<i>Vaccinium ovatum</i> 7% FACU/Dom	<i>Scirpus microcarpus</i> 10% FACW	<i>Vaccinium ovatum</i> 10% FACU/Dom
Species 4	<i>Alnus rubra</i> 3% FAC/Dom	<i>Blechnum spicant</i> 10% FAC	<i>Alnus rubra</i> 3% FAC/Dom
Species 5	<i>Picea sitchensis</i> 5% FAC/Dom	<i>Athyrium filix-femina</i> 5% FAC	<i>Picea sitchensis</i> 5% FAC/Dom
Species 6		<i>Polystichum munitum</i> 5% FACU	
Dominant Species	FACW, FAC, FAC, FACU	FACW	FACW, FAC, FAC, FACU
Hydrophyic Vegetation	Yes	Yes	Yes
Pass FAC Neutral Test	No	Yes	No



Photo 1. Wetland vegetation is dense and consists of sedges, ferns and bulrush.



Photo 2. Hydric soil profile with gray, depleted matrix underlying reddish orange soil surface layer (probably fill used to level site).



Photos 3 and 4. Non-wetland areas have sparse vegetation, plants that are adapted to drier sites, and reddish orange-colored soils to a soil depth of greater than 30 inches.



Photo 5. Groundwater seeping into soil pit on July 3, 2023.

Appendix D

SPECIAL-STATUS SPECIES OCCURRENCE REPORTS

BIOLOGICAL RESOURCES ASSESSMENT

Nick Bowman Construction Inc.

5204 Woodland Way
Eureka, CA, 95503

Assessor Parcel Number (APN):

403 – 051 – 032

March 2024





Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Species IS (Falco peregrinus anatum)

Map Index Number: B8157	EO Index: 121271
Key Quad: Arcata South (4012471)	Element Code: ABNKD06071
Occurrence Number: 66	Occurrence Last Updated: 2022-06-06

Scientific Name: <i>Falco peregrinus anatum</i>	Common Name: American peregrine falcon
Listing Status: Federal: Delisted	Rare Plant Rank:
* SENSITIVE * State: Delisted	Other Lists: CDF_S-Sensitive
CNDDDB Element Ranks: Global: G4T4	
State: S3S4	

General Habitat: NEAR WETLANDS, LAKES, RIVERS, OR OTHER WATER; ON CLIFFS, BANKS, DUNES, MOUNDS; ALSO, HUMAN-MADE STRUCTURES.	Micro Habitat: NEST CONSISTS OF A SCRAPE OR A DEPRESSION OR LEDGE IN AN OPEN SITE.
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Last Date Observed: 2019-06-18	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2021-03-16	Occurrence Rank: Good
Owner/Manager:	Trend: Unknown
Presence: Presumed Extant	

Location:
SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:
PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:
NEST IN GREEN OLD GROWTH REDWOOD SNAG. DESCRIBED AS SECOND AND THIRD-GROWTH REDWOOD FOREST WITH SCATTERED RESIDUAL OLD GROWTH TREES. SURROUNDING AREA USED FOR TIMBER (GROWING AND HARVESTING TREES) AND WILDLIFE CONSERVATION.

Threats:
General:

PLSS:	Accuracy: specific area	Area (acres): 10
UTM:	Latitude/Longitude:	Elevation (feet): 272

County Summary: Humboldt	Quad Summary: Arcata South (4012471)
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Sources:

CHI16F0001	CHINNICI, S. (HUMBOLDT REDWOOD COMPANY, LLC) - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2016-06-24
DFW19D0004	BATTISTONE, C. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - PEREGRINE FALCON OBSERVATIONS (BIOS DATASET DS2837). 2019-XX-XX
HRC18R0004	HUMBOLDT REDWOOD COMPANY - PEREGRINE FALCON ANNUAL REPORT, 2017 2018-02-01
HRC19R0002	HUMBOLDT REDWOOD COMPANY - PEREGRINE FALCON ANNUAL REPORT, 2018 2019-02-01
HRC20R0002	HUMBOLDT REDWOOD COMPANY - PEREGRINE FALCON ANNUAL REPORT, 2019 2020-02-01
HRC21R0002	HUMBOLDT REDWOOD COMPANY - PEREGRINE FALCON ANNUAL REPORT, 2020 2021-02-01
HRC22R0002	HUMBOLDT REDWOOD COMPANY - PEREGRINE FALCON ANNUAL REPORT, 2021 2022-02-01



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Species IS (*Falco peregrinus anatum*)



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: B8159	EO Index: 121272
Key Quad: Arcata South (4012471)	Element Code: ABNKD06071
Occurrence Number: 67	Occurrence Last Updated: 2022-06-06

Scientific Name: <i>Falco peregrinus anatum</i>	Common Name: American peregrine falcon
Listing Status: Federal: Delisted	Rare Plant Rank:
* SENSITIVE *	Other Lists: CDF_S-Sensitive
CNDDB Element Ranks: State: Delisted	
Global: G4T4	
State: S3S4	

General Habitat: NEAR WETLANDS, LAKES, RIVERS, OR OTHER WATER; ON CLIFFS, BANKS, DUNES, MOUNDS; ALSO, HUMAN-MADE STRUCTURES.	Micro Habitat: NEST CONSISTS OF A SCRAPE OR A DEPRESSION OR LEDGE IN AN OPEN SITE.
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Last Date Observed: 2012-XX-XX	Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-XX-XX	Occurrence Rank: Good
Owner/Manager:	Trend: Unknown
Presence: Presumed Extant	

Location:
SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:
PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:
TERRITORY CONSISTED OF 2 LIVE REDWOODS AND 1 REDWOOD SNAG USED FOR NESTING. BELIEVED TO BE ONE TERRITORY AS NONE WERE OCCUPIED CONCURRENTLY AND TERRITORIAL DISPUTES WERE NOT OBSERVED.

Threats:

General:

PLSS:	Accuracy: specific area	Area (acres): 15
UTM:	Latitude/Longitude:	Elevation (feet): 586

County Summary: Humboldt	Quad Summary: Arcata South (4012471)
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Sources:

BUC14A0001	BUCHANAN, J. ET AL. - TREE-NESTING BY PEREGRINE FALCONS IN NORTH AMERICA: HISTORICAL AND ADDITIONAL RECORDS. JOURNAL OF RAPTOR RESEARCH 48(1):61-67. 2014-XX-XX
DFW19D0004	BATTISTONE, C. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - PEREGRINE FALCON OBSERVATIONS (BIOS DATASET DS2837). 2019-XX-XX
GDR03F0146	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2003-XX-XX
GDR06F0402	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2006-XX-XX
GDR07F0467	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2007-XX-XX
GDR08F0412	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2008-XX-XX
GDR09F0086	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2009-XX-XX
GDR10F0202	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2010-XX-XX
GDR11F0256	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2011-XX-XX
GDR12D0002	GREEN DIAMOND RESOURCE COMPANY - TABLE OF KNOWN PEREGRINE FALCON NESTS ON GREEN DIAMOND OWNED LANDS 2012-12-27
GDR12F0002	GREEN DIAMOND RESOURCE COMPANY - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2012-02-23

Data Version Date:
02/29/2024

Report Generation Date:
3/20/2024

Report #2 - Observations Reported

List of observations reported by site.



Meridian, Township, Range, Section (MTRS) searched:

H_05N_01E Sections(22,26,27,28,31,32,33,34);

H_04N_01E Sections(03,04,05,06,07,08,09,10);

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
Masterowl: HUM0446 Subspecies: NORTHERN											
POS	1992		1	UU				40.803524	-124.052112	H 05N 01E 22	Contributor
NEG	1993		0					40.803524	-124.052112	H 05N 01E 22	Contributor
NEG	1994		0					40.803524	-124.052111	H 05N 01E 22	Contributor
ABAN	1995		1	UM				40.815187	-124.061867	H 05N 01E 15	Contributor
NEG	1997-03-20	1843	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	1997-04-05	1845	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	1997-08-30	1910	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	1998		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	1999		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2000		0					40.815187	-124.061867	H 05N 01E 15	Contributor
NEG	2000-04-05	0651	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2000-04-20	1910	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2000-05-10	0741	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2000-05-10	2037	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2000-05-19	2033	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2000-05-24	2040	0					40.802418	-124.073342	H 05N 01E 21	Section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2000-05-30	2044	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2000-06-06	2048	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2000-06-08	2110	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2000-06-13	2100	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2000-06-19	2107	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2000-06-26	2145	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2001		0					40.815187	-124.061867	H 05N 01E 15	Contributor
NEG	2001-03-17	2137	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2001-04-13	2036	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2001-05-16	2234	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2002		0					40.815187	-124.061867	H 05N 01E 15	Contributor
NEG	2002-03-04	1916	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2002-03-19	0556	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2002-04-02	2202	0					40.802418	-124.073342	H 05N 01E 21	Section centroid
NEG	2003		0					40.815187	-124.061867	H 05N 01E 15	Contributor
NEG	2003-04-15	1950	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2003-05-05	2020	0					40.802550	-124.054246	H 05N 01E 22	Section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2003-05-12	2042	0					40.802550	-124.054246	H 05N 01E 22	Section centroid
NEG	2004		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2005		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2006		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2007		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2008		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2011		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2012		0					40.815186	-124.061866	H 05N 01E 15	Contributor
NEG	2013		0					40.815187	-124.061867	H 05N 01E 15	Contributor
NEG	2014		0				0	40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2015		0				0	40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2016		0					40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2017		0					40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2018		0					40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2019		0					40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2020		0					40.815187	-124.061867	H 05N 01E 15	Activity center
NEG	2021		0					40.815187	-124.061867	H 05N 01E 15	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2022		0					40.815187	-124.061867	H 05N 01E 15	Activity center
Masterowl: HUM0447 Subspecies: NORTHERN											
POS	1992		1	UU				40.790482	-124.034068	H 05N 01E 26	Contributor
POS	1993		2	UMUF	Y			40.788097	-124.026414	H 05N 01E 26	Contributor
POS	1994		1	UU				40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
POS	1995-04-29		2	UMUF	Y		0	40.787172	-124.034423	H 05N 01E 26	Contributor
POS	1995-05-24		2	UMUF	Y		0	40.787172	-124.034423	H 05N 01E 26	Contributor
POS	1995-06-03	1328	2	AMAF	Y	N		40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
POS	1995-07-24		1	UU				40.791805	-124.040125	H 05N 01E 26	Quarter-section centroid
POS	1996		2	UMUF	Y	Y	1	40.785926	-124.033103	H 05N 01E 26	Contributor
POS	1996-04-23		2	UMUF	Y	Y	1	40.785926	-124.033103	H 05N 01E 26	Contributor
POS	1997		2	UMUF	Y			40.785119	-124.032415	H 05N 01E 26	Contributor
POS	1997-04-15		2	UMUF	Y	N		40.787172	-124.034423	H 05N 01E 26	Contributor
POS	1998		2	AMAF	Y	Y	1	40.785433	-124.034315	H 05N 01E 26	Contributor
POS	1998-04-20		2	UMUF	Y	Y	1	40.785433	-124.034315	H 05N 01E 26	Contributor
POS	1999		2	UMUF	Y			40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
POS	1999		2	UMUF	Y	N	0	40.785800	-124.033105	H 05N 01E 26	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	1999-04-14	2207	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	1999-04-29	2203	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	1999-06-04	2043	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	1999-06-29	2118	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
POS	2000		2	UMUF	Y	N	0	40.786530	-124.034853	H 05N 01E 26	Contributor
NEG	2000-04-03	2001	0					40.791851	-124.020853	H 05N 01E 25	Quarter-section centroid
NEG	2000-04-13	2040	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	2000-04-20	2248	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	2000-04-22	2040	0					40.791851	-124.020853	H 05N 01E 25	Quarter-section centroid
NEG	2000-05-04	2150	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	2000-06-04	2112	0					40.791851	-124.020853	H 05N 01E 25	Quarter-section centroid
NEG	2000-06-05	2214	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
POS	2001		2	UMUF	Y	N	0	40.786530	-124.034853	H 05N 01E 26	Contributor
POS	2001-04-12	2024	1	UU				40.784355	-124.040115	H 05N 01E 26	Quarter-section centroid
NEG	2001-04-24	2022	0					40.791851	-124.020853	H 05N 01E 25	Quarter-section centroid
NEG	2001-05-10	2046	0					40.791851	-124.020853	H 05N 01E 25	Quarter-section centroid
NEG	2001-05-24	2053	0					40.791851	-124.020853	H 05N 01E 25	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2002		2	UMUF	Y			40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
NEG	2003		0					40.788020	-124.034329	H 05N 01E 26	Contributor
POS	2003-03-01	2018	1	UM				40.788092	-124.035338	H 05N 01E 26	Section centroid
POS	2003-03-15	1921	1	UF				40.788092	-124.035338	H 05N 01E 26	Section centroid
NEG	2003-05-01	2158	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2003-05-12	2343	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2003-05-22	0038	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2003-06-27	2111	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2004-03-16	2022	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2004-04-29	2115	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2004-05-19	2138	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
POS	2005		2	UMUF	Y			40.786090	-124.032545	H 05N 01E 26	Contributor
POS	2005-03-03	0730	2	UMUF	Y			40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
NEG	2005-03-08	1942	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2005-03-17	2050	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
POS	2005-03-17	1005	2	UMUF	Y			40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
POS	2005-03-24	0840	2	UMUF	Y			40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2005-04-16	0650	1	UM	Y			40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
POS	2005-05-10	1020	1	UU				40.784442	-124.030469	H 05N 01E 26	Quarter-section centroid
NEG	2005-05-30	2124	0					40.788183	-124.015937	H 05N 01E 25	Section centroid
NEG	2006		0					40.786574	-124.032473	H 05N 01E 26	Activity center
NEG	2008		0					40.786574	-124.032473	H 05N 01E 26	Activity center
NEG	2009		0					40.786574	-124.032473	H 05N 01E 26	Activity center
NEG	2010		0					40.786574	-124.032473	H 05N 01E 26	Activity center
NEG	2011		0					40.786574	-124.032473	H 05N 01E 26	Activity center
NEG	2012		0					40.786574	-124.032473	H 05N 01E 26	Activity center
AC	2022		2	UMUF	Y		1	40.782305	-124.025944	H 05N 01E 26	Contributor
Masterowl: HUM0576 Subspecies: NORTHERN											
POS	1988-07-19		1	UU				40.748207	-124.059640	H 04N 01E 10	Contributor
POS	1992		1	UM				40.756413	-124.080064	H 04N 01E 04	Contributor
POS	1992		1	UF				40.747628	-124.087965	H 04N 01E 08	Contributor
POS	1992-05-04		1	UM				40.757439	-124.083955	H 04N 01E 05	Contributor
POS	1992-06-14		1	UM				40.757439	-124.083955	H 04N 01E 05	Contributor
POS	1993		2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	1994-05-17		2	AMAF	Y		2	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1994-07-06		1	SF				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1994-07-06		2	SMSF	Y			40.753884	-124.079025	H 04N 01E 04	Activity center
POS	1994-07-26		1	UM				40.747755	-124.059835	H 04N 01E 10	Quarter-section centroid
POS	1995-04-11		2	UMUF	Y		0	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1995-05-19		2	UMUF	Y		0	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1996-07-02		2	UMUF	Y	Y	1	40.754415	-124.079878	H 04N 01E 04	Contributor
POS	1997-03-27		2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1997-03-27	1509	2	AMAF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1997-03-27	1509	2	AMAF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	1997-03-27		2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	1997-04-02	1833	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
NEG	1997-04-03	1833	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
POS	1997-05-01		1	UM				40.755120	-124.088205	H 04N 01E 05	Quarter-section centroid
NEG	1997-06-17	2039	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
POS	1998-03-18	1905	1	UU				40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	1998-03-19	0741	0					40.758760	-124.092873	H 04N 01E 05	Section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	1998-04-04	2024	1	UU				40.755156	-124.097707	H 04N 01E 05	Quarter-section centroid
NEG	1998-04-05	0650	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	1998-04-09		2	UMUF	Y	Y	0	40.754416	-124.079759	H 04N 01E 04	Contributor
NEG	1998-04-27	1434	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
NEG	1998-05-16	2130	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	1999		2	UMUF	Y		2	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	1999-02-10	0932	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
POS	1999-03-15	1123	2	AMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	1999-03-20	2153	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	1999-05-13	2112	1	UM				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	1999-05-17	0000	0					40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
NEG	1999-05-22	0145	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	1999-06-04	0049	0					40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
POS	1999-06-07	1334	2	AMUF	Y	Y	2	40.754415	-124.079878	H 04N 01E 04	Contributor
NEG	1999-06-08	2050	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	1999-06-14	1731	2	AMAF	Y		1	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2000		2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2000		1	UU				40.740944	-124.079292	H 04N 01E 09	Quarter-section centroid
POS	2000-03-15	0825	1	UF				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2000-04-25	1931- 2050	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2000-05-02	1939	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2000-05-08	0748	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2000-05-15	1950	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2000-06-21	2106	0					40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
POS	2000-07-06	1578	1	UM				40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
POS	2000-07-06	0158	1	UM				40.747873	-124.069419	H 04N 01E 09	Quarter-section centroid
NEG	2000-07-07	0135	0					40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
NEG	2000-07-23	2304	0					40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
NEG	2000-07-25	0945	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
POS	2000-08-01	0202	1	UM				40.762463	-124.068871	H 04N 01E 04	Quarter-section centroid
NEG	2000-08-12	0702	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
NEG	2000-09-11	1945	0					40.755047	-124.069131	H 04N 01E 04	Quarter-section centroid
POS	2001		2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2001-03-05	0725	0					40.753884	-124.079025	H 04N 01E 04	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2001-03-14	1017	0					40.753884	-124.079025	H 04N 01E 04	Activity center
POS	2001-03-20	1930	1	UM				40.755120	-124.088205	H 04N 01E 05	Quarter-section centroid
POS	2001-03-21	0622	1	UM				40.755120	-124.088205	H 04N 01E 05	Quarter-section centroid
POS	2001-03-22	1713	1	UU				40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2001-04-02	0738	0					40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2001-04-29	0601	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2001-05-11	2050	2	UMUF	Y			40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2001-05-12	0531	0					40.762338	-124.088015	H 04N 01E 05	Quarter-section centroid
NEG	2001-05-13	0528	0					40.755120	-124.088205	H 04N 01E 05	Quarter-section centroid
NEG	2001-05-20	2007	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
POS	2001-06-04	2227	2	UMUF	Y			40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
NEG	2001-06-05	0515	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
NEG	2001-06-08	2124	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2001-06-18	2102	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2001-06-19	2105	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
POS	2001-06-20	0120	1	UF				40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
POS	2001-06-21	0700	1	UU				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2001-07-31	1945	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2001-08-01		2	AMAF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2001-08-01	0750	2	AMAF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2001-08-18	2030	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2002		2	UMUF	Y	Y	1	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2002-03-20	0750	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2002-03-20	0915	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2002-03-20	2034	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
NEG	2002-04-05	1920	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2002-05-03	2025	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2002-05-06	1020	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2002-05-16	1940	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
POS	2002-05-25	1835	1	UF	Y	Y		40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2002-05-26	2112	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2002-06-18	2112	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
POS	2002-06-21	0800	2	UMUF	Y	Y	1	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2002-07-22	1630	0					40.753884	-124.079025	H 04N 01E 04	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2002-07-27	0803	1	UM	Y	Y	1	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2002-07-29	0710	1	UM	Y	Y	1	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2002-08-13	1850	1	UU				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2002-08-29	2131	2	UMUF	Y	Y	1	40.753884	-124.079025	H 04N 01E 04	Activity center
POS	2003		2	UMUF	Y		2	40.755340	-124.078258	H 04N 01E 04	Contributor
NEG	2003-03-01	0747	0					40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2003-03-28	1900	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2003-04-07	1825	2	UMUF	Y	Y		40.753889	-124.078329	H 04N 01E 04	Contributor
POS	2003-04-07	1700	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2003-05-01	0700	2	UMUF	Y	Y		40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2003-05-01	1833	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
NEG	2003-05-09	2036	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2003-05-10	1838	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
NEG	2003-05-19	2036	0					40.762356	-124.078442	H 04N 01E 04	Quarter-section centroid
POS	2003-06-05	2135	1	UU				40.758742	-124.073728	H 04N 01E 04	Section centroid
NEG	2003-06-06	2045	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2003-06-10	1300	2	UMUF	Y	Y	2	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2003-06-20	0800	2	UMUF	Y	Y	2	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2003-07-10	1930	1	UM	Y	Y	1	40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2004	2400	0					40.764892	-124.092814	H 04N 01E 05	Contributor
POS	2004	2039	2	UMUF	Y	Y		40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2004-04-06	0810	1	UF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2004-04-16	1951	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2004-04-21	1400	1	UF	Y	Y		40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2004-04-24	0424	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
NEG	2004-05-03	2026	0					40.758760	-124.092873	H 04N 01E 05	Section centroid
POS	2004-06-21	0823	2	UMUF	Y	Y	0	40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2004-07-09	0635	0					40.753884	-124.079025	H 04N 01E 04	Activity center
POS	2005		2	UMUF	Y			40.753439	-124.078251	H 04N 01E 04	Contributor
POS	2005-03-19	2010	2	UMUF	Y			40.758724	-124.088110	H 04N 01E 05	Half-section centroid
POS	2005-03-20		1	UM				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
POS	2005-03-22	1520	2	UMUF	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2005-05-10	1215	0					40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2005-06-01	0822	0					40.753884	-124.079025	H 04N 01E 04	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2005-06-21	1705	0					40.753884	-124.079025	H 04N 01E 04	Activity center
POS	2005-08-02	0818	1	UU	Y			40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2005-08-12	0645	0					40.758742	-124.073728	H 04N 01E 04	Section centroid
NEG	2005-08-31	0715	0					40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2006	2400	0					40.764892	-124.092814	H 04N 01E 05	Contributor
POS	2006		2	UMUF	Y	Y	2	40.753884	-124.079025	H 04N 01E 04	Contributor
NEG	2006-04-28	1310	0					40.753884	-124.079025	H 04N 01E 04	Activity center
POS	2006-05-04	1912- 2035	1	UM				40.753793	-124.076631	H 04N 01E 04	Contributor
NEG	2006-05-12	1300	0					40.753884	-124.079025	H 04N 01E 04	Activity center
NEG	2006-05-31	2045	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2006-05-31	2157- 2207	0					40.761710	-124.088950	H 04N 01E 05	Contributor
NEG	2006-05-31	2102	0					40.754910	-124.088950	H 04N 01E 05	Contributor
NEG	2006-06-06	2127	0					40.754910	-124.088950	H 04N 01E 05	Contributor
NEG	2006-06-06	2212- 2222	0					40.761710	-124.088950	H 04N 01E 05	Contributor
NEG	2006-06-06	2100	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2006-06-09	0840	0					40.753884	-124.079025	H 04N 01E 04	Activity center
POS	2006-07-14	0900	1	UU	Y	Y	2	40.753884	-124.079025	H 04N 01E 04	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2007		2	UMUF	Y			40.753884	-124.079025	H 04N 01E 04	Contributor
NEG	2007-03-14	1950	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2007-03-14	2040- 2050	0					40.761710	-124.088950	H 04N 01E 05	Contributor
NEG	2007-03-14	1730- 1920	0					40.754910	-124.088950	H 04N 01E 05	Contributor
NEG	2007-03-28	1945	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2007-03-28	2210- 2220	0					40.761710	-124.088950	H 04N 01E 05	Contributor
POS	2007-03-28	2145	2	UMUF	Y			40.753050	-124.085580	H 04N 01E 05	Contributor
POS	2007-03-29	1750- 1945	2	UMUF	Y			40.753769	-124.079822	H 04N 01E 04	Contributor
POS	2008		2	UMUF	Y	Y	2	40.753884	-124.079025	H 04N 01E 04	Contributor
POS	2008		2	UMUF	Y	Y	2	40.753884	-124.079025	H 04N 01E 04	Contributor
POS	2009		2	UMUF	Y	N	0	40.753884	-124.079025	H 04N 01E 04	Contributor
POS	2009		1	UU				40.753964	-124.078209	H 04N 01E 04	Contributor
AC	2010		2	UMUF	Y	Y	2	40.752576	-124.085541	H 04N 01E 05	Contributor
POS	2011		2	UMUF	Y	N	0	40.752577	-124.085502	H 04N 01E 05	Contributor
POS	2012		2	UMUF	Y	N	0	40.752577	-124.085502	H 04N 01E 05	Contributor
POS	2013		1	UF				40.752577	-124.085502	H 04N 01E 05	Contributor
NEG	2013		0					40.752577	-124.085502	H 04N 01E 05	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2013-08-07	1000-1355	0					40.755116	-124.088211	H 04N 01E 05	Quarter-section centroid
POS	2014	0810-0915	1	UF			0	40.755116	-124.088211	H 04N 01E 05	Quarter-section centroid
NEG	2014-04-17	1204-1300	0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2014-06-06	0820-1000	0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2014-07-24	1300-1500	0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2014-08-04	1950-2050	0					40.752577	-124.085502	H 04N 01E 05	Activity center
POS	2015		1	UF			0	40.752577	-124.085505	H 04N 01E 05	Activity center
NEG	2015-03-09	1455-1700	0					40.752576	-124.085541	H 04N 01E 05	Activity center
POS	2015-03-18	1150-1300	1	UF				40.755120	-124.088205	H 04N 01E 05	Quarter-section centroid
NEG	2015-08-05	1601-1848	0					40.752576	-124.085541	H 04N 01E 05	Activity center
NEG	2015-08-14	1100-1310	0					40.752576	-124.085541	H 04N 01E 05	Activity center
NEG	2015-08-26	1522-1640	0					40.752576	-124.085541	H 04N 01E 05	Activity center
NEG	2016-03-14	1445-1540	0					40.752576	-124.085541	H 04N 01E 05	Activity center
POS	2016-06-01	1600-1615	1	UM				40.755084	-124.078668	H 04N 01E 04	Quarter-section centroid
NEG	2016-06-06	1008-1245	0					40.752576	-124.085541	H 04N 01E 05	Activity center
NEG	2016-08-26	0810-1127	0					40.752576	-124.085541	H 04N 01E 05	Activity center
NEG	2017-03-01	1558-1720	0					40.752577	-124.085502	H 04N 01E 05	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2017-04-04	0905-1110	0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2017-06-12	1800-2000	0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2017-07-20	1230-1515	0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2018		0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2019		0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2020		0					40.752577	-124.085502	H 04N 01E 05	Activity center
NEG	2021		0					40.752576	-124.085502	H 04N 01E 05	Activity center
POS	2022		1	UU				40.752577	-124.085502	H 04N 01E 05	Activity center
Masterowl: HUM0577 Subspecies: NORTHERN											
POS	1992		1	UU		Y		40.741845	-124.113311	H 04N 01E 07	Contributor
POS	1992		1	UM				40.736559	-124.110381	H 04N 01E 07	Contributor
NEG	1993		0					40.744011	-124.111962	H 04N 01E 07	Section centroid
NEG	1994		0					40.744011	-124.111962	H 04N 01E 07	Section centroid
NEG	1995		0					40.744011	-124.111962	H 04N 01E 07	Section centroid
NEG	1996		0					40.734901	-124.104787	H 04N 01E 18	Activity center
POS	1999		2	UMUF		Y		40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2000		0					40.736954	-124.110960	H 04N 01E 07	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2001		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2002		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2003		0					40.736954	-124.110959	H 04N 01E 07	Contributor
NEG	2004		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2005		0					40.736954	-124.110960	H 04N 01E 07	Contributor
AC	2005		2	UMUF	Y	Y	2	40.733943	-124.103132	H 04N 01E 18	Contributor
NEG	2006		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2006		0					40.733943	-124.103132	H 04N 01E 18	Contributor
NEG	2007		0					40.733942	-124.103131	H 04N 01E 18	Contributor
NEG	2008		0					40.733943	-124.103132	H 04N 01E 18	Contributor
NEG	2008		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2009		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2009		0					40.733943	-124.103132	H 04N 01E 18	Contributor
NEG	2010		0					40.733942	-124.103131	H 04N 01E 18	Contributor
NEG	2010		0					40.736954	-124.110959	H 04N 01E 07	Contributor
NEG	2011		0					40.736954	-124.110959	H 04N 01E 07	Contributor
NEG	2011		0					40.733942	-124.103131	H 04N 01E 18	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2012		0					40.736954	-124.110959	H 04N 01E 07	Contributor
NEG	2012		0					40.733942	-124.103131	H 04N 01E 18	Contributor
NEG	2013		0					40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2013		0					40.733943	-124.103132	H 04N 01E 18	Contributor
NEG	2014		0				0	40.736954	-124.110960	H 04N 01E 07	Contributor
NEG	2014		0				0	40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2015		0				0	40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2015		0				0	40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2016		0					40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2016		0					40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2017		0					40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2017		0					40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2018		0					40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2018		0					40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2019		0					40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2019		0					40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2020		0					40.736954	-124.110960	H 04N 01E 07	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2020		0					40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2021		0					40.733943	-124.103132	H 04N 01E 18	Activity center
NEG	2021		0					40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2022		0					40.736954	-124.110960	H 04N 01E 07	Activity center
NEG	2022		0					40.733943	-124.103132	H 04N 01E 18	Activity center
Masterowl: HUM0646 Subspecies: NORTHERN											
NEG	1991-05-23		0					40.744141	-124.055087	H 04N 01E 10	Section centroid
POS	1991-06-01		2	UMUF	Y			40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	1992		2	UMUF	Y			40.739521	-124.042045	H 04N 01E 11	Contributor
POS	1994-04-19		2	AMAF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1994-04-22		2	SMSF				40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1995-03-30	1647	2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1995-07-05		2	UMUF	Y		2	40.740720	-124.040927	H 04N 01E 11	Contributor
POS	1996-05-22	1542	2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1996-06-03		2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1996-06-04	1310	2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1997-01-24	0945	1	UF				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	1997-03-15	1652	2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1997-04-18	1022	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1997-05-14	1000	2	UMUF	Y	Y		40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1997-06-17	1130	2	UMUF	Y	Y	2	40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1998-01-20	1055	1	UF				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1998-02-24	1010	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
NEG	1998-04-06	1141	0					40.744141	-124.055087	H 04N 01E 10	Section centroid
NEG	1998-04-09	0920	0					40.744141	-124.055087	H 04N 01E 10	Section centroid
POS	1998-04-20	1130	2	UMUF	Y	Y		40.737985	-124.044555	H 04N 01E 11	Contributor
POS	1998-06-10		2	UMUF	Y	Y	2	40.737985	-124.044555	H 04N 01E 11	Contributor
POS	1998-06-18	0829	2	UMUF	Y	Y	2	40.737985	-124.044555	H 04N 01E 11	Contributor
POS	1998-07-02	1253	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1998-07-13	1426	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1998-07-27	1042	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1998-08-04	1815	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1998-08-11	1258	2	UMUF	Y			40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
POS	1998-08-21	1832	2	UMUF	Y		2	40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	1998-08-30	0805	2	UMUF	Y		2	40.740490	-124.050362	H 04N 01E 10	Quarter-section centroid
NEG	1999		0					40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	1999-05-25	0915	2	UMUF	Y	Y		40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	1999-06-24	1130	2	UMUF	Y	Y	1	40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
NEG	2000		0					40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2001		1	UU				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2001-03-14	0745	2	UMUF	Y			40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2001-03-31	0809	2	UMUF	Y			40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2001-04-13	1940	2	UMUF	Y			40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2001-05-13	1830	2	UMUF	Y			40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2001-06-01	0834	2	UMUF	Y	Y		40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2001-06-05	0224	1	UM				40.733300	-124.050545	H 04N 01E 15	Quarter-section centroid
POS	2001-06-23	0700	2	UMUF	Y		2	40.747546	-124.031154	H 04N 01E 11	Quarter-section centroid
NEG	2001-07-20	1715	0					40.739482	-124.043323	H 04N 01E 11	Activity center
POS	2001-08-01	0745	2	UMUF	Y		2	40.747546	-124.031154	H 04N 01E 11	Quarter-section centroid
POS	2001-08-16	2020	1	UM				40.726010	-124.050774	H 04N 01E 15	Quarter-section centroid
POS	2001-08-16	2017	1	UM				40.733300	-124.050545	H 04N 01E 15	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2001-08-27	1049	1	UU				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2002		2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2002		2	UMUF	Y	Y		40.747546	-124.031154	H 04N 01E 11	Quarter-section centroid
NEG	2003-03-10	0838	0					40.739482	-124.043323	H 04N 01E 11	Activity center
POS	2003-03-30	2156	1	UF				40.743953	-124.036050	H 04N 01E 11	Section centroid
POS	2003-03-31	1644	1	UM				40.741863	-124.044012	H 04N 01E 11	Contributor
POS	2003-04-30	2336	1	UU				40.743953	-124.036050	H 04N 01E 11	Section centroid
NEG	2003-05-01	0656	0					40.739482	-124.043323	H 04N 01E 11	Activity center
NEG	2003-06-11	1825	0					40.739482	-124.043323	H 04N 01E 11	Activity center
NEG	2003-08-05	1840	0					40.739482	-124.043323	H 04N 01E 11	Activity center
NEG	2004-03-16	0747	0					40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
NEG	2004-04-29	0834	0					40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
NEG	2004-05-19	0858	0					40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2005		1	UU				40.739950	-124.044373	H 04N 01E 11	Contributor
NEG	2005-05-31	2210	0					40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
NEG	2005-06-10	2253	0					40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
POS	2005-06-13	0730	1	UU				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2005-06-24	0510	0					40.747590	-124.050273	H 04N 01E 10	Quarter-section centroid
NEG	2005-07-07	0945	0					40.739482	-124.043323	H 04N 01E 11	Activity center
NEG	2005-07-13	1745	0					40.739482	-124.043323	H 04N 01E 11	Activity center
POS	2005-08-05	0830	1	UU				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2005-08-09	0610	1	UU				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
AC	2006		2	AMAF	Y	Y	0	40.739482	-124.043323	H 04N 01E 11	Contributor
POS	2006-03-06	1610	1	UM				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2006-03-29	0802	1	UM				40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2006-04-18	1725	2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2006-04-28	0904	2	UMUF	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2006-06-02	0743	1	UM	Y			40.740315	-124.040873	H 04N 01E 11	Quarter-section centroid
POS	2006-06-09	1150	2	UMUF	Y	Y	0	40.739482	-124.043323	H 04N 01E 11	Contributor
POS	2006-08-04	0920	1	UM	Y	Y	0	40.739482	-124.043323	H 04N 01E 11	Contributor
NEG	2008		0					40.739527	-124.043336	H 04N 01E 11	Contributor
POS	2009		1	UF				40.739497	-124.043310	H 04N 01E 11	Contributor
NEG	2010		0					40.739497	-124.043310	H 04N 01E 11	Contributor
NEG	2011		0					40.739498	-124.043307	H 04N 01E 11	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2012		0					40.739497	-124.043310	H 04N 01E 11	Contributor
NEG	2020	2400	0					40.743965	-124.047085	H 04N 01E 10	Contributor
NEG	2020	2400	0					40.747352	-124.047471	H 04N 01E 10	Contributor
NEG	2021	2400	0					40.747352	-124.047471	H 04N 01E 10	Contributor
NEG	2021	2400	0					40.743965	-124.047085	H 04N 01E 10	Contributor
NEG	2022	2400	0					40.747352	-124.047471	H 04N 01E 10	Contributor
Masterowl: HUM0648 Subspecies: NORTHERN											
POS	1992		2	UMUF	Y	Y		40.766367	-124.029905	H 05N 01E 35	Contributor
POS	1994-06-09		2	AMUF	Y		2	40.762383	-124.040234	H 04N 01E 02	Quarter-section centroid
POS	1994-07-07		1	SM				40.762383	-124.040234	H 04N 01E 02	Quarter-section centroid
POS	1994-07-28		0				1	40.762383	-124.040234	H 04N 01E 02	Quarter-section centroid
NEG	1995		0					40.773409	-124.035240	H 05N 01E 35	Section centroid
NEG	1996-05-25	0910	0					40.761880	-124.032016	H 04N 01E 02	Activity center
POS	1996-06-12		1	UF	Y			40.754918	-124.030854	H 04N 01E 02	Quarter-section centroid
POS	1997-05-01		2	UMUF	Y		2	40.763031	-124.034285	H 04N 01E 02	Contributor
POS	1998-04-29		2	UMUF	Y	N		40.763031	-124.034285	H 04N 01E 02	Contributor
NEG	1999		0					40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	1999-02-19	1319	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-03-05	1416	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-03-19	1342	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-03-26	1130	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-04-12	1130	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-04-22	1140	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-07-10	2030	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
NEG	1999-07-29	1131	0					40.758632	-124.035567	H 04N 01E 02	Section centroid
POS	2000		1	UM				40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
POS	2001		2	UMUF	Y		2	40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
POS	2001-05-16	0725	2	UMUF	Y	Y		40.763600	-124.029045	H 04N 01E 02	Contributor
POS	2001-05-22	1100	2	UMUF	Y	Y		40.763600	-124.029045	H 04N 01E 02	Contributor
POS	2002		2	UMUF	Y			40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
POS	2003		2	UMUF	Y			40.764230	-124.032183	H 04N 01E 02	Contributor
NEG	2003-03-11	1705	0					40.761880	-124.032016	H 04N 01E 02	Activity center
POS	2003-03-22	0810	1	UU				40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
POS	2003-04-07	0510	2	UMUF	Y			40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2003-06-09	0731	1	UF	Y			40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
POS	2004-04-05	1045	2	UMUF	Y			40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
POS	2004-04-21	1535	2	UMUF	Y	Y		40.761880	-124.032016	H 04N 01E 02	Contributor
POS	2004-04-25	2230	1	UU				40.758632	-124.035567	H 04N 01E 02	Section centroid
POS	2004-06-07	1055	2	UMUF	Y	Y		40.761880	-124.032016	H 04N 01E 02	Contributor
POS	2004-06-30	1009	2	UMUF	Y	Y	1	40.761880	-124.032016	H 04N 01E 02	Contributor
NEG	2004-07-07	0655	0					40.761880	-124.032016	H 04N 01E 02	Activity center
POS	2004-09-07	0601	2	UMUF	Y		1	40.758632	-124.035567	H 04N 01E 02	Section centroid
POS	2005		2	UMUF	Y			40.762329	-124.032165	H 04N 01E 02	Contributor
POS	2005-03-10	0905	2	UMUF	Y			40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
NEG	2005-04-29	1205	0					40.761880	-124.032016	H 04N 01E 02	Activity center
NEG	2005-05-20	0640	0					40.761880	-124.032016	H 04N 01E 02	Activity center
POS	2005-06-09	1820	2	UMUF	Y			40.762370	-124.030625	H 04N 01E 02	Quarter-section centroid
NEG	2006		0					40.762320	-124.032189	H 04N 01E 02	Contributor
NEG	2006-03-03	1106	0					40.761880	-124.032016	H 04N 01E 02	Activity center
NEG	2006-03-27	1545	0					40.761880	-124.032016	H 04N 01E 02	Activity center
NEG	2006-05-25	0910	0					40.758632	-124.035567	H 04N 01E 02	Section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2006-06-29	1530	0					40.761880	-124.032016	H 04N 01E 02	Activity center
NEG	2006-07-07	0930	0					40.761880	-124.032016	H 04N 01E 02	Activity center
NEG	2006-08-11	0900	0					40.761880	-124.032016	H 04N 01E 02	Activity center
NEG	2008		0					40.759804	-124.032170	H 04N 01E 02	Contributor
NEG	2009		0					40.762330	-124.032179	H 04N 01E 02	Contributor
NEG	2010		0					40.762330	-124.032180	H 04N 01E 02	Contributor
POS	2011		2	UMUF	Y			40.762326	-124.032183	H 04N 01E 02	Contributor
POS	2012		2	UMUF	Y			40.762330	-124.032179	H 04N 01E 02	Contributor
NEG	2013		0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2014-06-13	1100- 1300	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2014-08-20	1955- 2030	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2015-07-14	1602- 1800	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2016-07-22	0755- 1030	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2017-03-13	1700- 1822	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2017-04-17	1630- 1851	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2017-07-07	0930- 1130	0					40.762330	-124.032180	H 04N 01E 02	Activity center
NEG	2018		0					40.762330	-124.032180	H 04N 01E 02	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2019-03-12	1445-1535	1	UM				40.762216	-124.032105	H 04N 01E 02	Contributor
POS	2019-03-21	1654-1806	2	UMUF	Y			40.763005	-124.038746	H 04N 01E 02	Contributor
NEG	2019-03-29	0846-1000	0					40.762875	-124.038615	H 04N 01E 02	Activity center
AC	2019-04-09	1747-1852	2	UMUF	Y	Y		40.763051	-124.038601	H 04N 01E 02	Contributor
POS	2019-04-19	1032-1122	2	UMUF	Y			40.762994	-124.038708	H 04N 01E 02	Contributor
POS	2019-05-01	1836-1900	2	UMUF	Y			40.763136	-124.038414	H 04N 01E 02	Contributor
POS	2019-05-28	1656-1838	2	UMUF	Y			40.763625	-124.038999	H 04N 01E 02	Contributor
POS	2019-06-17	1616-1851	2	UMUF	Y		1	40.762598	-124.040133	H 04N 01E 02	Contributor
POS	2019-07-03	1133-1220	2	UMUF	Y		2	40.761492	-124.036633	H 04N 01E 02	Contributor
POS	2019-07-28	1133-1220	2	UMUF	Y		2	40.769306	-124.046727	H 05N 01E 34	Contributor
NEG	2019-08-30	0830-1000	0					40.762875	-124.038615	H 04N 01E 02	Activity center
NEG	2020	2400	0					40.756774	-124.047491	H 04N 01E 03	Contributor
NEG	2020		0					40.762875	-124.038615	H 04N 01E 02	Activity center
NEG	2021	2400	0					40.756774	-124.047491	H 04N 01E 03	Contributor
NEG	2021		0					40.762875	-124.038615	H 04N 01E 02	Activity center
NEG	2022		0					40.762875	-124.038615	H 04N 01E 02	Activity center
NEG	2022	2400	0					40.756774	-124.047491	H 04N 01E 03	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
Masterowl: HUM0649 Subspecies: NORTHERN											
POS	1992		1	UF				40.781333	-124.056387	H 05N 01E 27	Contributor
POS	1994-06-14		2	AMUF	Y			40.784335	-124.059184	H 05N 01E 27	Quarter-section centroid
POS	1994-07-07		2	SMSF				40.777074	-124.059199	H 05N 01E 34	Quarter-section centroid
POS	1995-06-19	2000	2	UMUF	Y			40.777074	-124.059199	H 05N 01E 34	Quarter-section centroid
POS	1995-07-18		2	UMUF	Y			40.777074	-124.059199	H 05N 01E 34	Quarter-section centroid
POS	1996-06-08		2	UMUF	Y			40.774209	-124.053300	H 05N 01E 34	Contributor
POS	1997-05-01		2	UMUF	Y	N		40.776999	-124.049694	H 05N 01E 34	Quarter-section centroid
POS	1998-03-10		2	UMUF	Y			40.776999	-124.049694	H 05N 01E 34	Quarter-section centroid
POS	1999		1	UF				40.776999	-124.049694	H 05N 01E 34	Quarter-section centroid
NEG	1999-04-14	2207	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
POS	1999-04-16	2226	1	UF				40.769792	-124.049675	H 05N 01E 34	Quarter-section centroid
NEG	1999-04-29	2116	0					40.769792	-124.049675	H 05N 01E 34	Quarter-section centroid
NEG	1999-06-04	2043	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	1999-06-29	2118	0					40.784322	-124.049679	H 05N 01E 27	Quarter-section centroid
NEG	1999-07-09	0003	0					40.784335	-124.059184	H 05N 01E 27	Quarter-section centroid
NEG	1999-07-21	2330	0					40.784335	-124.059184	H 05N 01E 27	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2000-04-03	2257	0					40.784335	-124.059184	H 05N 01E 27	Quarter-section centroid
NEG	2000-04-13	2024	0					40.776999	-124.049694	H 05N 01E 34	Quarter-section centroid
NEG	2000-04-20	2200	0					40.769792	-124.049675	H 05N 01E 34	Quarter-section centroid
NEG	2000-05-04	2120	0					40.769792	-124.049675	H 05N 01E 34	Quarter-section centroid
NEG	2000-07-27	2246	0					40.784335	-124.059184	H 05N 01E 27	Quarter-section centroid
POS	2003-03-09	2221	2	UMUF				40.773424	-124.054448	H 05N 01E 34	Section centroid
POS	2003-03-10	0940	1	UF				40.779932	-124.055950	H 05N 01E 34	Contributor
POS	2003-03-30	2223	1	UM				40.773424	-124.054448	H 05N 01E 34	Section centroid
POS	2003-03-31	0830	1	UM				40.777074	-124.059199	H 05N 01E 34	Quarter-section centroid
NEG	2003-05-14	0651	0					40.773489	-124.054248	H 05N 01E 34	Activity center
NEG	2003-07-18	0936	0					40.773489	-124.054248	H 05N 01E 34	Activity center
NEG	2005		0					40.778031	-124.055943	H 05N 01E 34	Contributor
NEG	2005-06-21	1630	0					40.773489	-124.054248	H 05N 01E 34	Activity center
NEG	2006		0					40.778022	-124.055955	H 05N 01E 34	Contributor
NEG	2006-04-19	1650	0					40.773489	-124.054248	H 05N 01E 34	Activity center
NEG	2006-05-02	1855	0					40.773489	-124.054248	H 05N 01E 34	Activity center
POS	2008		2	UMUF	Y	Y	2	40.773489	-124.054248	H 05N 01E 34	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2009		2	UMUF	Y		2	40.773733	-124.054773	H 05N 01E 34	Contributor
POS	2010		2	UMUF	Y			40.773733	-124.054773	H 05N 01E 34	Contributor
POS	2011		2	UMUF	Y			40.773734	-124.054767	H 05N 01E 34	Contributor
POS	2012		2	UMUF	Y	Y		40.773733	-124.054773	H 05N 01E 34	Contributor
POS	2013-03-07	1520- 1550	2	UMUF	Y			40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
POS	2013-04-12	1100- 1155	2	UMUF	Y			40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
POS	2013-04-26	1105- 1148	2	UMUF	Y			40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
AC	2013-06-06	1115- 1200	2	UMUF	Y	Y	2	40.773733	-124.054773	H 05N 01E 34	Contributor
POS	2013-07-31	1745- 1840	2	UMUF	Y		2	40.777003	-124.049690	H 05N 01E 34	Quarter-section centroid
POS	2013-08-16	1030- 1210	2	UMUF	Y		2	40.769788	-124.049673	H 05N 01E 34	Quarter-section centroid
NEG	2014-03-10	1610- 1740	0					40.773733	-124.054773	H 05N 01E 34	Activity center
POS	2014-04-02	1550- 1655	1	UM				40.769788	-124.049673	H 05N 01E 34	Quarter-section centroid
POS	2014-04-25	1128- 1314	1	UM				40.777003	-124.049690	H 05N 01E 34	Quarter-section centroid
NEG	2014-06-06	1030- 1230	0					40.773733	-124.054773	H 05N 01E 34	Activity center
POS	2014-07-03	0810- 0910	2	UMUF	Y			40.777003	-124.049690	H 05N 01E 34	Quarter-section centroid
POS	2015-03-09	1534- 1645	2	UMUF	Y			40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
POS	2015-04-14	1515- 1620	1	UF				40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2015-05-29	1000-1200	2	UMUF	Y			40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
POS	2015-06-23	1835-1910	2	UMUF	Y			40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
NEG	2015-08-20	1200-1241	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2016-03-01	1740-1809	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2016-03-18	0935-1150	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2016-04-04	1845-1918	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2016-04-29	1150-1340	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2016-07-18	1050-1330	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2017-03-03	0800-1043	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2017-04-17	0930-1045	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2017-05-08	1809-1917	0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2017-05-08	1638-1741	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2017-08-01	1019-1531	0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2017-08-29	1730-1950	0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2018		0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2018		0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2019		0					40.779964	-124.056601	H 05N 01E 34	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2019		0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2020		0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2020		0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2021		0					40.773733	-124.054773	H 05N 01E 34	Activity center
NEG	2021		0					40.779963	-124.056601	H 05N 01E 34	Activity center
NEG	2022		0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2022		0					40.773733	-124.054773	H 05N 01E 34	Activity center
Masterowl: HUM0987 Subspecies: NORTHERN											
NEG	2001-03-20	1842	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2001-03-21	0600	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2001-04-29	0501	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2002-03-18	2120	1	UM				40.760036	-124.109326	H 04N 01E 06	Contributor
NEG	2002-04-05	1920	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2002-04-21	2118	1	UM				40.755111	-124.116435	H 04N 01E 06	Quarter-section centroid
NEG	2002-05-03	2025	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2002-05-26	2112	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2003		2	UMUF	Y	N	0	40.754350	-124.115535	H 04N 01E 06	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2003-03-04	1800	2	UMUF	Y			40.755110	-124.125817	H 04N 01W 01	Quarter-section centroid
POS	2003-03-05	1730	2	UMUF	Y			40.755111	-124.116435	H 04N 01E 06	Quarter-section centroid
POS	2003-03-05		1	UM				40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2003-03-06		1	UF				40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2003-03-28	1900	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2003-03-28		2	UMUF				40.758713	-124.130499	H 04N 01W 01	Section centroid
NEG	2003-04-22	1930	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2003-05-09	2036	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2003-05-09	2056	0					40.762237	-124.116389	H 04N 01E 06	Quarter-section centroid
NEG	2003-05-15	2130	0					40.762237	-124.116389	H 04N 01E 06	Quarter-section centroid
NEG	2003-05-19	2003	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2003-06-06	2045	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2003-07-22	2100	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2003-08-07	2104	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2004		2	UMUF	Y	Y	1	40.755982	-124.114562	H 04N 01E 06	Contributor
NEG	2004-04-16	1951	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2004-04-24	0424	0					40.758734	-124.111698	H 04N 01E 06	Section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2004-05-03	2026	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2005		2	UMUF	Y	Y	0	40.753822	-124.116263	H 04N 01E 06	Contributor
NEG	2005-04-20	1610	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
NEG	2005-05-10	1830	0					40.758734	-124.111698	H 04N 01E 06	Section centroid
POS	2006		1	UM				40.753822	-124.116263	H 04N 01E 06	Contributor
POS	2006		1	UM				40.756613	-124.113901	H 04N 01E 06	Contributor
NEG	2007		0					40.753821	-124.116262	H 04N 01E 06	Contributor
NEG	2008		0					40.753822	-124.116263	H 04N 01E 06	Contributor
NEG	2009		0					40.753822	-124.116263	H 04N 01E 06	Contributor
NEG	2010		0					40.753821	-124.116262	H 04N 01E 06	Contributor
POS	2011		1	UU				40.753251	-124.117640	H 04N 01E 06	Contributor
POS	2012		2	UMUF	Y			40.753250	-124.117639	H 04N 01E 06	Contributor
POS	2013		2	UMUF	Y	N	0	40.753251	-124.117640	H 04N 01E 06	Contributor
NEG	2014		0				0	40.753251	-124.117640	H 04N 01E 06	Contributor
AC	2015-05-19		2	UMAF	Y	Y	0	40.753075	-124.111752	H 04N 01E 06	Contributor
POS	2015-06-17		2	UMAF	Y	Y	2	40.753075	-124.111752	H 04N 01E 06	Contributor
POS	2016		1	AM				40.753075	-124.111752	H 04N 01E 06	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2017		0					40.753075	-124.111752	H 04N 01E 06	Activity center
NEG	2018		0					40.753075	-124.111752	H 04N 01E 06	Activity center
NEG	2019		0					40.753075	-124.111752	H 04N 01E 06	Activity center
NEG	2019	2400	0					40.760533	-124.111707	H 04N 01E 06	Contributor
NEG	2020		0					40.753075	-124.111752	H 04N 01E 06	Activity center
NEG	2021		0					40.753075	-124.111752	H 04N 01E 06	Activity center
NEG	2022		0					40.753075	-124.111752	H 04N 01E 06	Activity center
Masterowl: HUM0995 Subspecies: NORTHERN											
NEG	1996		0					40.744141	-124.055087	H 04N 01E 10	Section centroid
POS	1999-04-15	0033	1	UU				40.747755	-124.059835	H 04N 01E 10	Quarter-section centroid
POS	1999-06-04	2159	1	UU				40.740807	-124.060032	H 04N 01E 10	Quarter-section centroid
POS	1999-06-04	0136	1	UU				40.733744	-124.079567	H 04N 01E 16	Quarter-section centroid
POS	1999-07-16	2223	1	UU				40.733770	-124.069927	H 04N 01E 16	Quarter-section centroid
POS	2000-04-04	2214	1	UF				40.747947	-124.088479	H 04N 01E 08	Quarter-section centroid
POS	2000-08-01	0031	1	UM				40.740944	-124.079292	H 04N 01E 09	Quarter-section centroid
POS	2000-08-02	0126	1	UU				40.740944	-124.079292	H 04N 01E 09	Quarter-section centroid
AC	2001-06-03	2119	1	UF				40.745830	-124.073106	H 04N 01E 09	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2001-06-03	2201	1	UF				40.747937	-124.078991	H 04N 01E 09	Quarter-section centroid
POS	2001-06-03	2148	1	UF				40.747873	-124.069419	H 04N 01E 09	Quarter-section centroid
POS	2001-06-03	2227	1	UU				40.740944	-124.079292	H 04N 01E 09	Quarter-section centroid
POS	2001-06-03	2142	1	UF				40.740944	-124.079292	H 04N 01E 09	Quarter-section centroid
POS	2001-06-03	2121	1	UM				40.747873	-124.069419	H 04N 01E 09	Quarter-section centroid
Masterowl: HUM1028 Subspecies: NORTHERN											
NEG	2006-05-31	2045	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2006-05-31	2119	0					40.750170	-124.095560	H 04N 01E 08	Contributor
NEG	2006-06-06	2100	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2006-06-06	2135	0					40.750170	-124.095560	H 04N 01E 08	Contributor
NEG	2007-03-14	2030	0					40.750170	-124.095560	H 04N 01E 08	Contributor
NEG	2007-03-14	1950	0					40.759430	-124.098130	H 04N 01E 05	Contributor
NEG	2007-03-28	1945	0					40.759430	-124.098130	H 04N 01E 05	Contributor
AC	2008		2	UMUF	Y	Y	2	40.752544	-124.100383	H 04N 01E 05	Contributor
NEG	2009		0					40.752544	-124.100383	H 04N 01E 05	Contributor
NEG	2010		0					40.752544	-124.100383	H 04N 01E 05	Contributor
POS	2011		2	UMUF	Y			40.749905	-124.093413	H 04N 01E 08	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2012		2	UMUF	Y			40.749905	-124.093413	H 04N 01E 08	Contributor
NEG	2013		0					40.749905	-124.093413	H 04N 01E 08	Contributor
NEG	2014		0				0	40.749905	-124.093413	H 04N 01E 08	Contributor
NEG	2015		0				0	40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2016		0					40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2017		0					40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2018		0					40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2019		0					40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2020		0					40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2021		0					40.749905	-124.093413	H 04N 01E 08	Activity center
NEG	2022		0					40.749905	-124.093413	H 04N 01E 08	Activity center

Masterowl: HUM1088 Subspecies: NORTHERN

AC	2013		2	UMUF	Y			40.741214	-124.097247	H 04N 01E 08	Contributor
POS	2014		1	UM			0	40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2015		0				0	40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2016		0					40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2017		0					40.741214	-124.097247	H 04N 01E 08	Activity center

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2018		0					40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2019		0					40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2020		0					40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2021		0					40.741214	-124.097247	H 04N 01E 08	Activity center
NEG	2022		0					40.741214	-124.097247	H 04N 01E 08	Activity center
Positive Spotted Owl detections not associated with a known Activity Center Subspecies: NORTHERN											
POS	1981-11-21		2	UUUU				40.765655	-124.116660	H 04N 01E 06	Contributor
POS	1981-12-23		1	UU				40.765655	-124.116660	H 04N 01E 06	Contributor
POS	1982-11-14		1	UU				40.762237	-124.116389	H 04N 01E 06	Quarter-section centroid
POS	1991		1	UF				40.779581	-124.072488	H 05N 01E 33	Contributor
POS	1995-08-21		1	UM				40.762422	-124.049796	H 04N 01E 03	Quarter-section centroid
POS	1997-07-14	1907	1	UF				40.754982	-124.059594	H 04N 01E 03	Quarter-section centroid
POS	2000-08-01	0202	1	UM				40.754982	-124.059594	H 04N 01E 03	Quarter-section centroid
POS	2000-08-02	0147	1	UM				40.762479	-124.059322	H 04N 01E 03	Quarter-section centroid
POS	2004-06-03	0945	1	UU				40.754982	-124.059594	H 04N 01E 03	Quarter-section centroid
POS	2004-07-15	0944	1	UU				40.754982	-124.059594	H 04N 01E 03	Quarter-section centroid
POS	2012		2	UMUF	Y			40.779963	-124.056600	H 05N 01E 34	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
POS	2015-07-14	1617-1715	1	UM				40.777071	-124.059203	H 05N 01E 34	Quarter-section centroid
POS	2019-05-10	2136	1	UU				40.774296	-124.112181	H 05N 01E 31	Contributor
Additional surveys within the search area with no Spotted Owls detected											
NEG	1998		0					40.754982	-124.059594	H 04N 01E 03	Quarter-section centroid
NEG	1999	2103	0					40.784283	-124.068724	H 05N 01E 28	Quarter-section centroid
NEG	1999	2400	0					40.762479	-124.059322	H 04N 01E 03	Quarter-section centroid
NEG	1999	2400	0					40.762310	-124.111686	H 04N 01E 06	Half-section centroid
NEG	1999		0					40.754982	-124.059594	H 04N 01E 03	Quarter-section centroid
NEG	1999	2400	0					40.777040	-124.068738	H 05N 01E 33	Quarter-section centroid
NEG	1999-03-19	2040	0					40.776861	-124.087838	H 05N 01E 32	Quarter-section centroid
NEG	1999-03-19	2053	0					40.769591	-124.087885	H 05N 01E 32	Quarter-section centroid
NEG	1999-05-13	2039	0					40.769591	-124.087885	H 05N 01E 32	Quarter-section centroid
NEG	1999-05-13	2027	0					40.776861	-124.087838	H 05N 01E 32	Quarter-section centroid
NEG	1999-06-26	0535	0					40.769626	-124.078335	H 05N 01E 33	Quarter-section centroid
NEG	1999-06-29	0538	0					40.769591	-124.087885	H 05N 01E 32	Quarter-section centroid
NEG	2000	2400	0					40.784283	-124.068724	H 05N 01E 28	Quarter-section centroid
NEG	2000	2400	0					40.762310	-124.111686	H 04N 01E 06	Half-section centroid

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2000	2400	0					40.777040	-124.068738	H 05N 01E 33	Quarter-section centroid
NEG	2000	2400	0					40.762479	-124.059322	H 04N 01E 03	Quarter-section centroid
NEG	2000-04-12	1955	0					40.769626	-124.078335	H 05N 01E 33	Quarter-section centroid
NEG	2000-04-30	2026	0					40.769591	-124.087885	H 05N 01E 32	Quarter-section centroid
NEG	2000-04-30	2012	0					40.776861	-124.087838	H 05N 01E 32	Quarter-section centroid
NEG	2000-08-01	0027	0					40.776861	-124.087838	H 05N 01E 32	Quarter-section centroid
NEG	2000-08-01	0039	0					40.769591	-124.087885	H 05N 01E 32	Quarter-section centroid
NEG	2000-08-03	2359	0					40.769626	-124.078335	H 05N 01E 33	Quarter-section centroid
NEG	2000-08-10	2223	0					40.769626	-124.078335	H 05N 01E 33	Quarter-section centroid
NEG	2000-08-10	2200	0					40.776861	-124.087838	H 05N 01E 32	Quarter-section centroid
NEG	2001-05-29	2245	0					40.773228	-124.111726	H 05N 01E 31	Section centroid
NEG	2002-02-26	2211	0					40.773228	-124.111726	H 05N 01E 31	Section centroid
NEG	2003-03-16	2001	0					40.773228	-124.111726	H 05N 01E 31	Section centroid
NEG	2004	2400	0					40.777150	-124.085110	H 05N 01E 32	Contributor
NEG	2004	2400	0					40.771234	-124.068217	H 05N 01E 33	Contributor
NEG	2004	2400	0					40.769450	-124.093570	H 05N 01E 32	Contributor
NEG	2005		0					40.754020	-124.062303	H 04N 01E 03	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2005	2400	0					40.771795	-124.068550	H 05N 01E 33	Contributor
NEG	2006	2400	0					40.777150	-124.085110	H 05N 01E 32	Contributor
NEG	2006	2400	0					40.769450	-124.093570	H 05N 01E 32	Contributor
NEG	2006-07-19	0822	0					40.754010	-124.062327	H 04N 01E 03	Contributor
NEG	2010		0					40.754022	-124.062319	H 04N 01E 03	Contributor
NEG	2012		0					40.754022	-124.062319	H 04N 01E 03	Contributor
NEG	2013		0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2013		0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2013-08-09	0740- 0930	0					40.754984	-124.059598	H 04N 01E 03	Quarter-section centroid
NEG	2014-07-03	0920- 1140	0					40.779964	-124.056601	H 05N 01E 34	Activity center
NEG	2014-07-11	1200- 1300	0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2015-07-24	0802- 0940	0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2017-04-03	1841- 1928	0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2017-04-27	1900- 2008	0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2018		0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2019		0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2019	2400	0					40.765094	-124.106926	H 04N 01E 06	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2019	2400	0					40.768666	-124.116342	H 05N 01E 31	Contributor
NEG	2019-03-23	1940- 1952	0					40.774296	-124.112181	H 05N 01E 31	Contributor
NEG	2019-04-13	2126- 2138	0					40.774296	-124.112181	H 05N 01E 31	Contributor
NEG	2019-05-14	1845- 1945	0					40.769634	-124.106943	H 05N 01E 31	Quarter-section centroid
NEG	2019-05-23	2126- 2136	0					40.774296	-124.112181	H 05N 01E 31	Contributor
NEG	2020	2400	0					40.792412	-124.055660	H 05N 01E 27	Contributor
NEG	2020		0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2020	2400	0					40.753209	-124.048897	H 04N 01E 03	Contributor
NEG	2020	2400	0					40.795676	-124.050544	H 05N 01E 22	Contributor
NEG	2020	2400	0					40.799487	-124.049901	H 05N 01E 22	Contributor
NEG	2020	2400	0					40.749422	-124.050762	H 04N 01E 10	Contributor
NEG	2021		0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2021	2400	0					40.792412	-124.055660	H 05N 01E 27	Contributor
NEG	2021	2400	0					40.749422	-124.050762	H 04N 01E 10	Contributor
NEG	2021	2400	0					40.795676	-124.050544	H 05N 01E 22	Contributor
NEG	2021	2400	0					40.799487	-124.049901	H 05N 01E 22	Contributor
NEG	2021	2400	0					40.753209	-124.048897	H 04N 01E 03	Contributor

<i>Type</i>	<i>Date</i>	<i>Time</i>	<i>#Adults</i>	<i>Age/Sex</i>	<i>Pair</i>	<i>Nest</i>	<i>#Young</i>	<i>Latitude DD NAD83</i>	<i>Longitude DD NAD83</i>	<i>MTRS</i>	<i>Coordinate Source</i>
NEG	2022	2400	0					40.799487	-124.049901	H 05N 01E 22	Contributor
NEG	2022	2400	0					40.792412	-124.055660	H 05N 01E 27	Contributor
NEG	2022	2400	0					40.753209	-124.048897	H 04N 01E 03	Contributor
NEG	2022		0					40.754023	-124.062319	H 04N 01E 03	Activity center
NEG	2022	2400	0					40.749422	-124.050762	H 04N 01E 10	Contributor
NEG	2022	2400	0					40.795676	-124.050544	H 05N 01E 22	Contributor
NEG	2023	2400	0					40.795676	-124.050544	H 05N 01E 22	Contributor
NEG	2023	2400	0					40.792412	-124.055660	H 05N 01E 27	Contributor
NEG	2023	2400	0					40.799487	-124.049901	H 05N 01E 22	Contributor

Appendix E

WEB SOIL SURVEY REPORTS

BIOLOGICAL RESOURCES ASSESSMENT

Nick Bowman Construction Inc.

5204 Woodland Way
Eureka, CA, 95503

Assessor Parcel Number (APN):
403 – 051 – 032

March 2024



Humboldt County, Central Part, California

397—Salmoncreek-Tepona-Rootcreek complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2ljdm
Elevation: 50 to 1,070 feet
Mean annual precipitation: 41 to 50 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Salmoncreek and similar soils: 35 percent
Tepona and similar soils: 25 percent
Rootcreek and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Salmoncreek

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Residuum weathered from siltstone

Typical profile

A - 0 to 7 inches: silt loam
Bt1 - 7 to 20 inches: silty clay loam
Bt2 - 20 to 30 inches: silty clay loam
Bt3 - 30 to 39 inches: silty clay loam
C1 - 39 to 57 inches: silt loam
C2 - 57 to 65 inches: silty clay loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 4 to 10 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F004B1103CA - Fog-influenced, cool, wet, low elevation mountain slopes and terraces

Hydric soil rating: Yes

Description of Tepona

Setting

Landform: Terraces, hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear, convex

Across-slope shape: Linear

Parent material: Marine deposits derived from sedimentary rock

Typical profile

A - 0 to 8 inches: very fine sandy loam

Bw1 - 8 to 20 inches: fine sandy loam

Bw2 - 20 to 26 inches: fine sandy loam

Bw3 - 26 to 49 inches: fine sandy loam

C - 49 to 69 inches: fine sandy loam

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B/D

Ecological site: F004B1103CA - Fog-influenced, cool, wet, low elevation mountain slopes and terraces

Hydric soil rating: No

Description of Rootcreek

Setting

Landform: Mountains

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

A - 0 to 7 inches: silt loam

ABt - 7 to 22 inches: silt loam

Bt1 - 22 to 30 inches: silt loam

Bt2 - 30 to 39 inches: silt loam

Bt3 - 39 to 49 inches: silt loam

Btg - 49 to 63 inches: clay loam

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F004B1104CA - Fog-influenced, upper elevation mountain slopes

Hydric soil rating: No

Minor Components

Cannonball

Percent of map unit: 5 percent

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Nose slope, tread

Down-slope shape: Linear

Across-slope shape: Convex

Hydric soil rating: No

Scoutcamp

Percent of map unit: 5 percent

Landform: Benches

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Urban land, residential

Percent of map unit: 5 percent

Landform: Marine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California

Survey Area Data: Version 10, Aug 28, 2023

Humboldt County, Central Part, California

399—Salmoncreek-Tepona-Rootcreek complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2ljdt
Elevation: 80 to 1,070 feet
Mean annual precipitation: 41 to 50 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Salmoncreek and similar soils: 32 percent
Tepona and similar soils: 30 percent
Rootcreek and similar soils: 28 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Salmoncreek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

A - 0 to 7 inches: silt loam
Bt1 - 7 to 20 inches: silty clay loam
Bt2 - 20 to 31 inches: silty clay loam
Bt3 - 31 to 43 inches: silty clay loam
Btg1 - 43 to 59 inches: silty clay loam
Btg2 - 59 to 79 inches: silt loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 4 to 10 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C/D

Ecological site: F004B1104CA - Fog-influenced, upper elevation
mountain slopes

Hydric soil rating: Yes

Description of Tepona

Setting

Landform: Terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Marine deposits derived from mixed

Typical profile

A - 0 to 7 inches: fine sandy loam

ABt - 7 to 20 inches: fine sandy loam

Bw1 - 20 to 33 inches: fine sandy loam

Bw2 - 33 to 49 inches: fine sandy loam

Bw3 - 49 to 59 inches: fine sandy loam

C - 59 to 71 inches: fine sandy loam

Properties and qualities

Slope: 30 to 50 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): High
(2.00 to 6.00 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0
mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.4
inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A/D

Ecological site: F004B1101CA - Low elevation marine and
floodplain terraces

Hydric soil rating: No

Description of Rootcreek

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank, center third
of mountainflank

Down-slope shape: Linear

Across-slope shape: Linear, concave, convex

Parent material: Colluvium derived from siltstone and/or residuum
weathered from siltstone

Typical profile

A - 0 to 7 inches: silt loam

Bt1 - 7 to 12 inches: silt loam

Bt2 - 12 to 20 inches: silty clay loam

Bt3 - 20 to 33 inches: silt loam

Bt4 - 33 to 59 inches: silt loam

Bt5 - 59 to 65 inches: silt loam

Properties and qualities

Slope: 30 to 50 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0
mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F004B1104CA - Fog-influenced, upper elevation
mountain slopes

Hydric soil rating: No

Minor Components

Cannonball

Percent of map unit: 5 percent

Landform: Erosion remnants

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Scoutcamp

Percent of map unit: 5 percent

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Linear

Across-slope shape: Convex

Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 10, Aug 28, 2023