

Biological Resource Assessment

Whyman Commercial Cannabis Cultivation CEQA Compliance

Prepared by
Corrina Kamoroff
5/18/2020

For
**Hohman and Associates
and Mad River Properties
Hydesville, CA**

Signature:



Date: 5/18/2020

CONTENTS

1. Summary	1
2. Introduction.....	1
2.1 Project Description.....	1
2.2 Setting	2
2.3 Zoning	2
2.4 Purpose.....	2
2.5 Qualifications	2
2.6 Terms	3
3. Methods.....	4
3.1 Biological Assessment Area	4
3.2 Database Search	4
3.3 Field Surveys	5
3.4 Trustee and Other Agency Consultation	5
4 Results.....	5
4.1 Existing Conditions.....	5
4.2 Habitats	6
4.2.1 Upland Communities	6
4.2.2 Wetland and Riparian Communities.....	6
4.3 Special Status Animals	6
4.3.1 Special Status Animals Documented by CNDDDB in the Maple Creek 9-Quad Area ...	7
4.3.2 Potential Impacts to Special Status Animals	10
4.4 Wildlife Movement and Connectivity	24
5. Conclusions.....	24
5.1 Summary of Potential Impacts and Mitigations.....	24
5.2 Recommended Surveys and Mitigation Measures for Potentially Significant Impacts.....	26
6. References	28
Attachment A. CALVEG Vegetation Alliance Map of Surrounding Area	31
Attachment B. CNDDDB Special Status Taxa Search Map	32
Attachment C. Habitat Photos.....	33
Attachment D. Rank Definitions.....	36
Attachment E. NSO Habitat Assessment.....	37
Attachment F. Marbled Murrelet Habitat Assessment	41

1. Summary

This Biological Habitat Assessment was prepared on behalf of Zach Whyman, who is seeking permits for commercial cannabis cultivation under the Humboldt County Commercial Medical Marijuana Land Use Ordinance (CMMLUO, a.k.a Ordinance 1.0). This document assesses habitats and potentially occurring special-status animals and identifies potential impacts of cultivation-related activities on biological resources. This assessment also recommends mitigation needed to reduce potential impacts to less-than-significant levels, and it identifies additional surveys needed to adequately evaluate impacts.

The property is located approximately 2.2 miles up Titlow Hill Road in Humboldt County, which has the potential to support numerous special status animal species (details are provided in Section 4.3 Special Status Animals). Restoration is recommended to compensate for oak woodland habitat removal as well as cultivation activity within the Streamside Management Area (SMA). If habitat removal is proposed, further surveys are recommended to evaluate and mitigate potential impacts to special-status plants, raptors, nesting birds, amphibians (See table in Section 5.2). Additional mitigation measures have been recommended to address potential impacts of light and noise disturbance. A table summarizing all mitigation measures recommended to reduce biological impacts to less-than-significant levels can be found in Section 5.2.

2. Introduction

2.1 Project Description

Zach Whyman is seeking permitting for commercial cannabis cultivation on Assessor's Parcel No (APN): 316-171-005. The entire parcel is a contiguous parcel broken up into three APNs: 316-171-005, 316-185-008, and 316-186-006 but cannabis cultivation will only occur on APN: 316-171-005. The parcel is approximately 160 acres. The proposed project seeks permitting for prior unauthorized conversion of timberland. The project includes four green houses, three outdoor cultivation areas, processing building and a septic system. The project also includes existing storage sheds and parking. The total cultivation area is approximately 15,000 square feet.

Aerial imagery shows that the planned footprint area has had some level of development for at least 27 years, but additional vegetation removal and grading has occurred since 2016. An assessment of riparian vegetation communities on the parcel and proper SMA buffers from the riparian dripline on 4/14/20 showed that cultivation has occurred within the 100-foot SMA setbacks (Photos 1-3). The site visit conducted on 4/14/20 also shows the removal of Oak woodland habitat. Mitigation is recommended to minimize meadow encroachment by Douglas Fir (Photos 4 and 5).

2.2 Setting

The Whyman Commercial Cannabis Cultivation Project is located in Sections 29, 31 and 32, Township 6 North, Range 4 East HB&M; Humboldt County, on the Maple Creek USGS 7.5' quadrangle. The biogeographic region can be described using a three-tiered hierarchy of province, region and sub-region. This site lies within the California Floristic Province, Northwestern California region, and North Coast sub-region. The parcel is located off of Titlow Hill road accessed from Highway 299. The elevation ranges from approximately 2,500 to 4,000 feet. Slopes on the property are steep, and the aspect is primarily south-facing. The Zach Whyman property is within Douglas fir, Oregon white oak and Madrone forest. The surrounding forest composition consists primarily of even-aged second growth Douglas-fir, oak, and pacific madrone with a minor amount of other hardwood species.

2.3 Zoning

The parcel is zoned Unclassified (U). The General Plan designation is Unclassified.

2.4 Purpose

The primary purpose of this Biological Resource Assessment is to evaluate the potential effects of the applicant's cannabis cultivation operations on biological resources. The applicant is seeking permitting for commercial cultivation of cannabis in Humboldt County, and this is a discretionary project subject to the California Environmental Quality Act (CEQA). This assessment provides the following information for the permitting process:

- An evaluation of biological resources on the site
- Determinations of whether the project has the potential to significantly impact biological resources
- Recommendations of additional surveys needed to adequately assess potential impacts
- Recommended mitigations to avoid, minimize, or compensate for any potentially significant impacts

2.5 Qualifications

The Biological Resource Assessment for this project was conducted by Corrina Kamoroff. Corrina Kamoroff is a Biologist for Hohman and Associates Forestry Consultants. Corrina received her B.S. in Evolution, Ecology and Biodiversity from University of California, Davis. Corrina is currently pursuing her M.S. in Natural Resources with a concentration in Wildlife from Humboldt State University. Corrina has over 8 years of wildlife experience in Northern California, including over two years conducting biological surveys and evaluating potential impacts in fulfillment of CEQA requirements.

2.6 Terms

Biological Assessment Area (BAA): The area evaluated for potential impacts to biological resources, defined in this document as the property area surrounded by a 1.3 mile buffer.

Biological Habitat Assessment: Referring to this document, a review of potential impacts to biological resources that informs agency review of discretionary projects subject to CEQA.

California Department of Fire (CDF) Sensitive: Species that warrant protection during timber harvest operations, listed in California Forest Practice Rules.

California Environmental Quality Act (CEQA): A state environmental law that applies to discretionary projects subject to state agency review. The purposes of CEQA include disclosing environmental impacts, minimizing environmental damage, and involving the public.

California Endangered Species Act (CESA): A state law that prohibits “take” of species protected by CDFW, including Threatened, Endangered, and Candidate Species.

California Department of Fish and Wildlife (CDFW): A trustee agency that protects California’s fish and wildlife resources.

California Native Plant Society (CNPS): A non-profit organization dedicated to preserving and protecting native plants and their habitats. CNPS provides protocols and information relevant to plant conservation, including rankings of rare plants recognized by CDFW.

Commercial Medical Marijuana Land Use Ordinance (CMMLUO): “Ordinance 1.0,” a Humboldt County ordinance that regulates commercial cultivation, processing, manufacturing and distribution of cannabis for medical use.

Commercial Cannabis Land Use Ordinance (CCLUO): “Ordinance 2.0,” a Humboldt County ordinance regulating commercial cannabis cultivation for adult use.

Endangered: Taxa in immediate jeopardy of extinction in all or part of their range.

Federal Endangered Species Act (FESA): A federal law enacted in 1973 that protects species listed as Threatened or Endangered by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS).

Fully Protected (FP): Take of species is strictly prohibited by CDFW.

NatureServe: A non-profit dedicated to providing scientific information to support informed decisions. NatureServe provides information on species and rankings of rare species (see Attachment D).

Special Animals: All animals tracked by CDFW, including threatened, endangered, rare, sensitive, and otherwise vulnerable species.

Species of Special Concern (SSC): Species considered by CDFW to be vulnerable because of declining populations, limited range, or other threats.

State Water Resources Control Board Order WQ 2019-0001-DWQ: The order sets requirements for waste discharge related to cannabis cultivation. The State Water Resources Control Board Cannabis Cultivation Regulatory Program will replace the regional program, which is no longer accepting enrollment. The state program has set similar standards to minimize impacts to water quality. Information is available on the website:
https://www.waterboards.ca.gov/water_issues/programs/cannabis/

Streamside Management Area (SMA): Protective buffers around permanent or intermittent streams. The Humboldt County General Plan (2017) defines Streamside Management Areas as follows:

- 1. 100 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of perennial streams.*
- 2. 50 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of intermittent streams.*
- 3. The width of Streamside Management Areas shall not exceed 200 feet measured as a horizontal distance from the top of bank.*

Threatened: Taxa likely to become endangered in the foreseeable future.

3. Methods

3.1 Biological Assessment Area

The Biological Assessment Area (BAA) for this project includes a 1.3-mile buffer area around the property. The assessment considers off-site impacts to habitats and species that may be in the BAA buffer area. Consideration of offsite impacts in the BAA is potentially relevant to sensitive species and habitats downslope or downstream of operations (e.g. riparian habitat or salmonids), and to species that require a large range and may be sensitive to disturbance (e.g. the northern spotted owl).

3.2 Database Search

A list of special-status animal species was downloaded from CNDDDB for the Maple Creek 9-quad area. Potential habitats on the project area and within the Biological Assessment Area (BAA) for species occurring in the 9-quad areas were evaluated. The potential for the project to impact each species was evaluated based on the potential for the species to occur in the area of impact and sensitivity of the species to potential loss of habitat, disturbance, or other effects of operations. Surveys and mitigations needed are specified for species that could incur significant impacts. Attachment A contains a vegetation map showing the CALVEG

(Classification and Assessment with LANDSAT of Visible Ecological Groupings) dominant vegetation alliances for the project and surrounding area (U.S. Forest Service 2000), which was used to assess habitat in the surrounding area. Attachment B shows nearby occurrences of special status taxa as mapped in CNDDDB.

3.3 Field Surveys

The site was evaluated for potential habitat value to protected, endangered, threatened, rare, and sensitive species by walking around the project area to observe species, habitat types, and quality. Habitat and potential impacts were evaluated during a visit to the cultivation site on April 14, 2020. Table 5.2 provides a list of surveys and mitigation measures needed to reduce the potential impact of the project on biological resources to less than significant. Attachments A and B provide maps with data from CNDDDB and USFS CalVeg used in initial scoping for the project. Photos taken of the project footprint and surrounding habitat can be found in Attachment C. Attachment D provides an explanation of NatureServe rankings. Attachment E provides a Northern Spotted Owl Habitat Assessment. Attachment F provides a Marbled Murrelet Habitat Assessment.

3.4 Trustee and Other Agency Consultation

California Department of Fish and Wildlife (CDFW) has been consulted.

4 Results

4.1 Existing Conditions

There are four sites, totaling 0.74 acres of converted land on the property. One of the four sites (Site 1) was first converted with tree clearing in 2015. Aerial images from NAIP show the clearing occurred between 2014 and 2016. The land owner claims that the clearing at Site 1 occurred before December 31, 2015. Currently Site 1 is unoccupied and is now open grassland. A second site (Site 2) is a Cannabis site that was first converted to cultivate cannabis with grading and installation of a structure in 1993 and 2004. Currently the site is occupied by an outdoor garden. The conversion is within a riparian buffer of a class III watercourse. The closest structure is 13 feet from the watercourse. There is also a Quonset storage structure within 24 feet from the class III watercourse. The third site (Site 3) is a Cannabis site that was first converted to cultivate cannabis with grading and the installation of a hoop house between 2006 and 2009. It was expanded to the south in 2010 and 2012 with clearing of trees and the construction of a second hoop house. Between 2014 and 2016, the second hoop house was replaced with an outdoor garden. Currently the site is occupied by a 25 ft. by 100 ft. green house and an outdoor garden. The fourth site (Site 4) was first converted with the removal of trees, and grading 2014 and 2016. Currently the site is occupied by a compost pile and agriculture. The compost pile is well covered and is actively mitigating for potential invasive plant species. No permit was obtained from CALFIRE to convert the area for such use of the four sites. Mitigation measures have been proposed for each potentially significant biological impact of current and planned operations on the property. Relevant mitigation measures for the impacts discussed in this report are listed in parentheses (e.g. BIO-1, BIO-2, etc.), and these mitigation measures can be found in the table of Section 5.2 Mitigation for Potentially Significant Impacts.

4.2 Habitats

4.2.1 Upland Communities

Upland areas of the property contained primarily mixed coniferous forest dominated by Douglas fir (*Pseudotsuga menziesii*) with California bay laurel (*Umbellularia californica*), madrone (*Arbutus menziesii*), canyon live oak (*Quercus chrysolepis*), tanoak (*Notholithocarpus densiflorus*), and California black oak (*Quercus kelloggii*). The forest understory was dominated by poison oak (*Toxicodendron diversilobum*) and pink honeysuckle (*Lonicera hispidula*). The property also contained open grasslands and small patches of woodland dominated by Oregon white oak (*Quercus garryana*). Some Douglas fir encroachment was observed along the transition to oak woodland. The majority of the property is considered upland habitat.

4.2.2 Wetland and Riparian Communities

This property contains class II and III watercourses which exists within the boundaries of the parcel or immediate vicinity of the project. The property also has an artificial perennial pond that may support sensitive amphibians and other wildlife. The class II and III watercourses may provide habitat for sensitive amphibians and other species. Specific measures are recommended for each parcel below to address potential impacts to wetland and aquatic communities. See Section 4.3.2 Potential Impacts to Special Status Animals for discussion of specific habitat needs and potential impacts to sensitive species that may be found in the area.

4.3 Special Status Animals

Special status animals evaluated in this report include animal taxa listed or proposed for listing under Federal and State Endangered Species Acts, CDFW Fully Protected, CDFW Watch List, CDFW Species of Special Concern, California Department of Forestry and Fire Protection Sensitive Species, and other special species and other taxa tracked by CDFW. Impacts to special status animals are evaluated in this section based on their likelihood of occurrence in the area, habitat and life-history needs, and sensitivity to operations. Likelihood of inhabiting the area was based on documented occurrences in the Maple Creek 9-quad area (Tables 1-5), and availability of potential habitat. Details on potentially occurring taxa, potential impacts, and surveys and mitigations needed for these animals can be found in Section 4.3.2 Potential Impacts to Special Status Animals.

4.3.1 Special Status Animals Documented by CNDDDB in the Maple Creek 9-Quad Area

Table 1. Birds

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential in BAA
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	G5	S4	Yes
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	G5	S3	Yes
<i>Accipiter gentilis</i>	Northern goshawk	None	None	SSC	G5	S3	Yes
<i>Accipiter striatus</i>	Sharp-shinned hawk	None	None	WL	G5	S4	Yes
<i>Ammodramus savannarum</i>	Grasshopper sparrow	None	None	SSC	G5	S2S3	Yes
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Threatened	Endangered	None	G3G4	S1	Yes
<i>Charadrius montanus</i>	Mountain plover	None	None	SSC	G3	S2S3	Yes
<i>Contopus cooperi</i>	olive-sided flycatcher	None	None	SSC	G4	S4	Yes
<i>Empidonax traillii</i>	willow flycatcher	None	Endangered	-	G5T3T4	S1S2	Yes
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	G4T4	S3S4	Yes
<i>Haliaeetus leucocephalus</i>	Bald eagle	Delisted	Endangered	FP	G5	S3	Yes
<i>Icteria virens</i>	Yellow-breasted chat	None	None	SSC	G5	S3	Yes
<i>Pandion haliaetus</i>	Osprey	None	None	WL	G5	S4	Yes
<i>Phalacrocorax auritus</i>	Double crested cormorant	None	None	WL	G5	S4	Unlikely
<i>Poecile atricapillus</i>	Black-capped chickadee	None	None	WL	G5	S2	Yes
<i>Riparia riparia</i>	Bank swallow	None	Threatened	-	G5	S2	Yes
<i>Strix occidentalis caurina</i>	Northern spotted owl	Threatened	Threatened	SSC	G4T3	S2S3	Yes

Table 2. Mammals

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential in BAA
<i>Arborimus albipes</i>	White-footed vole	None	None	SSC	G3G4	S2	Yes
<i>Arborimus pomo</i>	Sonoma tree vole	None	None	SSC	G3	S3	Yes
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	G3G4	S2	Yes
<i>Martes caurina humboldtensis</i>	Humboldt marten	None	Endangered	SSC	G5T1	S1	Yes
<i>Pekania pennanti</i>	fisher - West Coast DPS	None	Threatened	SSC	G5T2T3Q	S2S3	Yes

Table 3. Amphibians and Reptiles

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential in BAA
<i>Ascaphus truei</i>	Pacific tailed frog	None	None	SSC	G4	S3S4	Yes
<i>Plethodon elongatus</i>	Del Norte salamander	None	None	WL	G4	S3	Yes
<i>Rana aurora</i>	Northern red-legged frog	None	None	SSC	G4	S3	Yes
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	SSC	G3	S3	Yes
<i>Rhyacotriton variegatus</i>	Southern torrent salamander	None	None	SSC	G3G4	S2S3	Yes
<i>Emys marmorata</i>	Western pond turtle	None	None	SSC	G3G4	S3	Yes

Table 4. Fish

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential in BAA
<i>Acipenser medirostris</i>	green sturgeon	Threatened	None	SSC	G3T1	S1S2	Yes
<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	G4	S4	Yes
<i>Lampetra richardsoni</i>	Western brook lamprey	None	None	SSC	G4	S4	Yes
<i>Oncorhynchus clarkia clarkii</i>	Coast cutthroat trout	None	None	SSC	T3	S3	Yes
<i>Oncorhynchus kisutch</i>	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	-	G4T2Q	S2?	Yes
<i>Oncorhynchus mykiss irideus</i>	steelhead - northern California DPS	Threatened	None	-	G5T2T3Q	S2S3	Yes
<i>Oncorhynchus mykiss irideus</i>	summer-run steelhead trout	None	None	SSC	G5T4Q	S2	Yes
<i>Oncorhynchus tshawytscha</i>	chinook salmon - California coastal ESU	Threatened	None	-	G5	S1	Yes
<i>Oncorhynchus tshawytscha</i>	Chinook salmon-upper Klamath Trinity Rivers ESU	None	Candidate Endangered	SSC	G5	S1S2	Yes
<i>Thaleichthys pacificus</i>	eulachon	Threatened	None	-	G5	S1	Yes

Table 5. Invertebrates

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential in BAA
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	G2	S1S2	Yes
<i>Bombus occidentalis</i>	western bumble bee	None	Candidate Endangered	-	G2G3	S1	Yes

4.3.2 Potential Impacts to Special Status Animals

BIRDS

Potential impacts are evaluated for potentially occurring threatened, endangered, rare and sensitive bird species that have been documented in the surrounding Maple Creek 9-quad area. California Department of Forestry and Fire Protection Sensitive species— the great blue heron, and the yellow-breasted chat—have been added to the list of sensitive species from the Maple Creek CNDDDB 9-quad area. Raptor surveys and pre-construction nesting bird surveys are recommended (**BIO-4**, **BIO-5**).

1. Cooper's hawk (*Accipiter cooperii*)

Special Status: CDFW Watch List; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S4

Family: Accipitridae

Habitat/Life-history Requirements: Cooper's hawks are common year-round residents in wooded areas of California, and they can be found in urban and suburban areas as well (Cornell Lab). The medium-sized hawk builds nests made of piles of sticks over two feet wide in tall trees, typically 25-50 feet off the ground (Cornell Lab). Nesting trees include pines, oaks and Douglas firs (Cornell Lab). Dense stands are typically used for nesting and patchy open areas are commonly used for hunting (Zeiner et al. 1988).

Potential Impact/Mitigation: The area could provide habitat for the Cooper's hawk. The raptor is on the CDFW Watch List and protected under the Migratory Bird Treaty Act (MBTA). Pre-construction raptor scans are recommended prior to any construction or additional vegetation removal during the breeding season (**BIO-4**). Additionally, the project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

1. Sharp-shinned hawk (*Accipiter striatus*)

Special Status: CDFW Watch List; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S4

Family: Accipitridae

Habitat/Life-history Requirements: The sharp-shinned hawk is an uncommon breeder in California, and is more commonly a migrant or winter resident (Zeiner et al. 1988). The small hawk is typically found in mature mixed forests. Breeding habitats include mixed coniferous forest and riparian habitat, especially areas characterized by ponderosa pine, Jeffrey pine, or black oak (Zeiner et al. 1988). Nests are typically placed high in dense stands of trees, and they are less conspicuous than the nests of most other raptors (Zeiner et al. 1988).

Potential Impact: The area could provide habitat for the sharp-shinned hawk. The raptor is on the CDFW Watch List and protected under the Migratory Bird Treaty Act (MBTA). Pre-construction raptor scans are recommended prior to any construction or additional vegetation removal during the breeding season (**BIO-4**). Additionally, the project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

2. Grasshopper sparrow (*Ammodramus savannarum*)

Special Status: CDFW Species of Special Concern; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S2S3

Family: Chararidae

Habitat/Life-history Requirements: Occur widespread in grasslands, prairies, hayfields and open pastures across North America. Winters primarily in grass-dominated fields. The grasshopper sparrow nest on the ground, often at the base of grass within an extensive patch of tall grass. In recent decades, the sparrow has undergone population declines throughout most of its breeding range.

Potential Impact: Habitat may occur in the BAA. If further construction or vegetation removal is planned pre-construction nesting bird surveys may be needed (**BIO-5**).

Additionally, the project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

3. Golden eagle (*Aquila chrysaetos*)

Special Status: CDFW Fully Protected and Watch List; Protected under Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act; NatureServe Ranks: G5, S3

Family: Accipitridae

Habitat/Life-history Requirements: The golden eagle is an uncommon migrant and year-round resident (Zeiner et al. 1988). The golden eagle typically utilizes open habitats away from human environments (Sibley 2003). Small mammals are the primary prey for the golden eagle (Sibley 2003). One of the largest raptors in North America, the golden eagle builds massive nests, about 6 feet across (Cornell Lab). Nests are typically located on cliffs, but may also be found on trees, man-made structures, or on the ground (Cornell Lab).

Potential Impact/Mitigation: Open areas for foraging occur within the BAA. The nearest occurrence mapped in CNDDB is over 13 miles from the project. Pre-construction raptor scans are recommended prior to any construction or additional vegetation removal during the breeding season (**BIO-4**). Additionally, the project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

4. Marbled murrelet (*Brachyramphus marmoratus*)

Special Status: Federally Threatened; California Endangered; NatureServe Ranks: G3G4, S1

Family: Alcidae

Habitat/Life History Requirements: The federally Threatened and state Endangered marbled murrelet nests in large trees in mature coastal forests along the Pacific coast, especially old-growth redwood and Douglas-fir forests (Zeiner et al. 1988). Fish are the primary source of food for the unique alcid, which travels daily between nesting areas in mature forests and feeding grounds offshore during the breeding season (Cornell Lab). U.S. Fish and Wildlife Service has designated areas of mature coastal forest in Northern California as critical habitat based on the presence of individual trees with potential nesting platforms, and forested areas within 0.5 miles of individual trees with potential nesting platforms that had a canopy height of at least one-half the average maximum potential height for trees given local growing conditions (USFWS 2011). The presence of trees with potential nesting platforms (flat areas at least 4 inches wide, 33 feet high in the canopy of coniferous forests) is the most important predictor of marbled murrelet presence (Evans Mack et al.

2003). Audio-visual surveys should be conducted in areas that contain mature coniferous forest or trees with suitable platforms (Evans Mack et al. 2003).

Potential Impact: The nearest occurrence of the Marbled murrelet is mapped in the Hupa Mountain quad over 10 miles away from the Whyman parcel boundary. There is designated Critical habitat within 2 miles of the parcel boundary. If habitat removal is proposed, surveys for the Marbled murrelet will be recommended (See Attachment F).

5. Mountain plover (*Charadrius montanus*)

Special Status: CDFW Species of Special Concern; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G3, S2S3

Family: Charadriidae

Habitat/Life-history Requirements: Population declining and very local; occasionally fairly common. Winter resident from September through March. Found on short grasslands and plowed fields of the Central Valley from Sutter and Yuba cos. southward. Also found in foothill valleys west of San Joaquin Valley, Imperial Valley, plowed fields of Los Angeles and western San Bernardino counties, and along the central Colorado river valley. Recent extralimital records exist for locations along the northern coast of California (Hunting and Edson 2008). Winters below 1000 m (3200 ft).

Potential Impact: Habitat may occur in the area. If further construction or vegetation removal is planned, and pre-construction nesting bird surveys may be needed (**BIO-5**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

6. Olive-sided flycatcher (*Contopus cooperi*)

Special Status: CDFW Species of Special Concern; Protected under Migratory Bird Treaty Act; NatureServe Ranks:

Family: Tyrannidae

Habitat/Life-history Requirements: The olive-sided flycatcher is a CDFW Species of Special Concern. The songbird occurs in a variety of forest habitats, preferring to nest in mixed conifer, montane hardwood-conifer, Douglas-fir, and redwood stands (Zeiner et al. 1988). The songbird forages near canyons, meadows, lakes, clearings, and other open terrains (Zeiner et al. 1988).

Potential Impact/Mitigation: There are no CNDDDB recorded occurrences of the olive-sided flycatcher in the 9-quadrant area, the BAA could provide habitat for the sensitive species. Pre-construction nesting bird surveys are recommended prior to any construction or additional vegetation removal during the breeding season (**BIO-5**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

7. Willow flycatcher (*Empidonax traillii*)

Special Status: California Endangered, Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S1S2

Family: Tyrannidae

Habitat/Life-history Requirements: The willow flycatcher is a rare to locally uncommon summer resident that breeds in the Cascades and the Sierra Nevada (Craig and Williams 1998). The little willow flycatcher breeds in wet meadows and montane riparian habitats at

2,000-8,000 feet elevation (Craig and Williams 1998). The riparian songbird requires dense willow thickets for nesting and roosting (Bombay et al. 2003, Zeiner et al. 1988). Destruction of riparian vegetation, modification of hydrology, and nest parasitism by brown headed cowbirds are the main threats to this species (Bombay et al. 2003).

Potential Impact/Mitigation: Riparian habitat occurs in the Korbel quad over 9 miles away from the project. Pre-construction nesting bird surveys are recommended prior to any construction or additional vegetation removal during the breeding season (**BIO-5**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

8. American peregrine falcon (*Falco peregrinus anatum*)

Special Status: Federally Delisted, State Delisted, CDFW Fully Protected; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G4T4, S3S4

Family: Falconidae

Habitat/Life-history Requirements: The formerly federally endangered American peregrine falcon was delisted in 1999 due to recovery (USFWS ECOS). The American peregrine falcon is an uncommon year-round resident and migrant in California (Zeiner et al. 1988). Peregrine falcons typically use cliffs and ledges near bodies of water for cover and nesting areas, but they may also nest on buildings or bridges in the city (Sibley 2003, Cornell Lab). Peregrine falcons may breed in woodland, forest, or coastal habitat (Zeiner et al. 1988). Riparian and wetland areas are important habitat yearlong (Zeiner et al. 1988).

Potential Impact/Mitigation: Peregrine falcons may breed in a wide variety of habitats, and they have the potential to nest in the area on suitable ledges or other structures. Pre-construction raptor scans are recommended prior to construction or any additional vegetation removal during the breeding season (**BIO-4**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

9. Bald eagle (*Haliaeetus leucocephalus*)

Special Status: Federally Delisted, California Endangered, CDFW Fully Protected; Protected under Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act; NatureServe Ranks: G5, S3

Family: Accipitridae

Habitat/Life-history Requirements: Federally delisted, but still considered Endangered in California, bald eagles are uncommon residents or migrants. Fish are a primary source of prey, and bald eagles are typically found in forested areas near large fish-bearing waters (Cornell Lab). Bald eagles build large nests about 6 feet wide. Nests are typically found in large trees, but may be built on other available vegetation or structures (Cornell Lab).

Potential Impact/Mitigation: The bald eagle may occur in the BAA, which has fish bearing waters and large trees. Pre-construction raptor scans are recommended prior to construction or any additional vegetation removal during the breeding season (**BIO-4**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

10. Osprey (*Pandion haliaetus*)

Special Status: CDFW Watch List; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S4

Family: Accipitridae

Habitat/Life-history Requirements: Ospreys primarily prey on fish and they require large fish-bearing waters for hunting (Zeiner et al. 1988). Ospreys typically make large nests in tall snags or trees high off the ground in open forest habitats (Zeiner et al.).

Potential Impact/Mitigation: Osprey may occur in the area, which has fish bearing waters and large trees. The nearest occurrence mapped in CNDDB is over 7 miles away on the Trinity River. Pre-construction raptor scans are recommended prior to construction or any additional vegetation removal during the breeding season (**BIO-4**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

11. Northern goshawk (*Accipiter gentilis*)

Special Status: CDFW Species of Special Concern, CDF Sensitive Species, NatureServe Rankings: G5, S3

Family: Accipitridae

Habitat/Life-history Requirements: The northern goshawk inhabits mature coniferous and mixed-coniferous forests that provide suitable nesting structures and adequate prey for this large hawk (Shuford and Gardali 2008). The northern goshawk builds nests that are 3-4 feet long (Cornell Lab) in stands of large trees with high canopy closure and an open understory (Shuford and Gardali 2008). Northern goshawks are known to breed in the Klamath and Inner North Coast Ranges (Hunter et al. 2005). They have also been spotted in the southwestern area of the county (Hunter et al. 2005). The northern goshawk is sensitive to disturbance, and aggressive toward intruders near their nest. They typically nest in wild forested areas, away from human-caused disturbances (Cornell Lab).

Potential Impact/Mitigation: Northern goshawk may occur within the BAA. The nearest occurrence mapped in CNDDB is ~2.3 miles away from the project area. Pre-construction raptor scans are recommended prior to construction or any additional vegetation removal during the breeding season (**BIO-4**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

12. Yellow-breasted chat (*Icteria virens*)

Special Status: CDF Sensitive Species, NatureServe Rankings: G5, S3

Family: Parulidae

Habitat/Life-history Requirements: The yellow-breasted chat is a CDFW Species of Special Concern. This songbird nests in dense riparian brush. The distribution of the yellow-breasted chat in Humboldt County largely follows the riparian habitat surrounding the major rivers, especially the Eel, Trinity, Klamath, and Mad Rivers (Hunter et al. 2005). The yellow breasted chat is relatively numerous in Humboldt County, whereas much of California has seen a decline in population (Shuford and Gardali 2008). Protecting riparian areas, including shrub layers, is important for the conservation of this species.

Potential Impact/Mitigation: There are no CNDDB recorded occurrences of the yellow breasted chat in the 9-quad area, but riparian habitat within the BAA could provide habitat for the sensitive species. Pre-construction nesting bird surveys are recommended prior to any

construction or additional vegetation removal during the breeding season (**BIO-5**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

13. Double-crested cormorant (*Phalacrocorax auritus*)

Special Status: CDFW Watch List, Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S4

Family: Phalacrocoracidae

Habitat/Life-history Requirements: The double-crested cormorant occurs along coast of California, and may also be found in inland lakes and riverine habitats of the Central Valley (Zeiner et al. 1988). In Humboldt County, double crested cormorants are common residents and breeders along the coasts (Hunter et al. 2005). They may also be found inland along the Klamath, Trinity and Eel Rivers (Hunter et al. 2005). The waterbird feeds mainly on fish, and may also feed on crustaceans and amphibians (Cornell Lab). Although they primarily use offshore seastacks for breeding, the double-crested cormorant is also known to nest in trees and manmade structures, such as the Arcata Wharf (Hunter et al. 2005). Cormorant rookeries are highly conspicuous because of the whitewash that they leave on nesting structures.

Potential Impact/Mitigation: The double-crested cormorant is unlikely to occur within the project boundary. No impacts are expected.

14. Black-capped chickadee (*Poecile atricapillus*)

Special Status: CDFW Watch List; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S3

Family: Paridae

Habitat/Life-history Requirements: The black-capped chickadee is restricted to Del Norte, Humboldt, and Siskiyou counties. Occurs in montane habitat or by conifers adjacent to riparian habitats (Zeiner et al. 1988). It eats insects, spiders, seeds, and fruits (Zeiner et al. 1988).

Potential Impact/Mitigation Pre-construction nesting bird surveys are recommended prior to any construction or additional vegetation removal during the breeding season (**BIO-5**). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

15. Bank swallow (*Riparia riparia*)

Special Status: California Threatened, Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S2

Family: Hirundinidae

Habitat/Life-history Requirements: Bank swallows nest in vertical sand banks and eroding bluffs, and they forage over nearby meadows and water. They require sandy banks for excavating nests (Zeiner et al. 1988) They breed from May to early July (Sibley 2014).

Potential Impact/Mitigation: The Bank swallow may occur within the BAA but not within the parcel boundary. The project area may provide foraging habitat but nesting habitat is not found in the project area. No impacts are expected.

16. Northern spotted owl (*Strix occidentalis caurina*)

Special Status: Federally Threatened, California Threatened, CDFW Species of Special Concern, Protected under Migratory Bird Treaty Act; NatureServe Ranks: G3T3, S2S3.

Family: Strigidae

Habitat/Life-history Requirements: Northern spotted owls typically nest or roost in multi-layered, mature coniferous forest with high canopy closure, large overstory trees, and broken-topped trees or other nesting platforms (USFWS 2012). Confirmed breeding areas are widespread throughout Humboldt County (Hunter et al. 2005). Northern spotted owls may use a broad range of habitats for foraging. Their favored prey, the dusky-footed woodrat (*Neotoma fuscipes*), typically inhabits the forest edge (Harris 2005).

Potential Impact: USFWS protocol surveys are needed for any activity that may modify nesting, roosting, or foraging habitats for northern spotted owls (USFWS 2012) (**BIO-7**). Potential habitat has been mapped on the property and surrounding 0.25 miles. There is one NSO database activity center recorded within 1.3 miles of the plan area (HUM0738) (See Attachment D). The project should incorporate measures to reduce disturbance from noise and lights to birds and other sensitive wildlife (**BIO-9**).

MAMMALS

Potential impacts are evaluated for potentially occurring threatened, endangered, rare and sensitive mammal species that have been documented in the surrounding 9-quad area. The grey wolf and Humboldt marten have been added to the list of sensitive species from the CNDDDB 9-quad area based on CDF guidance for addressing species that may be affected by timber harvest.

1. White-footed vole (*Arborimus albipes*)

Special Status: CDFW Species of Special Concern, NatureServe Ranks: G3G4, S2

Family: Muridae

Habitat/Life-history Requirements: The white-footed vole is a CDFW Species of Special Concern. The white-footed vole can be found in coastal redwood, coniferous, and riparian forests of Humboldt and Del Norte counties (Zeiner et al. 1988). The white-footed vole nests on the ground under stumps, logs, and rocks. The white-footed vole is typically found in mature forests near clear freshwater streams (Zeiner et al. 1988).

Potential Impact: The arboreal rodent is unlikely to occur in the area. The White-footed vole may occur in the surrounding BAA. The nearest occurrence mapped in CNDDDB is over 10 miles from the project. The project is not likely to affect the White-footed vole.

2. Sonoma tree vole (*Arborimus pomo*)

Special Status: CDFW Species of Special Concern, NatureServe Ranks: G3, S3

Family: Muridae

Habitat/Life-history Requirements: The Sonoma tree vole occurs along the North Coast in in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats (Zeiner et al. 1988). The small rodent specializes in feeding on Douglas-fir and grand fir needles, and typically constructs nests in Douglas-fir trees (Zeiner et al. 1988).

Potential Impact/Mitigation: The Sonoma tree vole may occur in the surrounding BAA, but is unlikely to occur in the project area. The nearest occurrence mapped in CNDDDB is over 9 miles from the project. No impacts are expected.

3. **Townsend's big-eared bat (*Corynorhinus townsendii*)**

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G3G4 S2

Family: Vespertilioni

Habitat/Life-history Requirements: Although it can be found in a wide range of habitats, the bat requires caves, mines, tunnels, buildings, or other human-made structures for roosting (Zeiner et al. 1988). Townsend's big-eared bat is highly sensitive to disturbance of roosting sites (Zeiner et al. 1988).

Potential Impact/Mitigation: The BAA could provide some areas of potential habitat. The nearest occurrence mapped in CNDDB is 11 miles from the project. The project will incorporate measures to reduce disturbance from noise and lights to potential bat roosting habitat in the area (**BIO-9**).

4. **Humboldt marten (*Martes caurina humboldtensis*)**

Special Status: State Endangered; CDFW Species of Special Concern; USFS Sensitive; NatureServe Ranks: G5T1, S1

Family: Mustelidae

Habitat/Life-history Requirements: Martens use structurally complex conifer forest with large trees and low human disturbance (Zeiner et al. 1988). Martens require old-growth conifers and snags with cavities for denning and nesting (Zeiner et al. 1988). Martens are currently known to inhabit the northern part of Humboldt County near Prairie Creek Redwood State Park and the Klamath Mountains. Historically, martens occupied a great deal of Humboldt and Mendocino Counties (Hamlin et al. 2010).

Potential Impact/Mitigation: The surrounding BAA provides some potential habitat for the Humboldt marten. The nearest occurrence mapped in CNDDB is ~14 miles from the project. No impacts are expected.

5. **Fisher – West Coast DPS (*Pekania pennanti*)**

Special Status: Federally Proposed as Threatened, State Candidate Threatened, Species of Special Concern; NatureServe Ranks: G5T2T3Q, S2S3

Family: Mustelidae

Habitat/Life-history Requirements: The fisher uses large expanses of forest with moderate to high canopy closure, and will avoid open forest, grasslands, and wetlands (USFWS 2014). Fishers use cavities in live trees, snags and down logs for reproductive dens (USFWS 2014). Structural complexity is a critical element of fisher habitat, necessary to provide cover for resting and denning, and habitat for prey (USFWS 2014).

Potential Impact/Mitigation: The surrounding BAA provides habitat for the fisher. The nearest occurrence mapped in CNDDB is ~2 miles from the project. It is recommended that no mature conifers, snags, or other potential denning structures are removed. The project will incorporate measures to reduce disturbance from noise and lights (**BIO-9**).

6. **Grey wolf (*Canis lupus*)**

Special Status: Federally Endangered, California Endangered; NatureServe Ranks: G4, S1

Family: Canidae

Habitat/Life-history Requirements: The federally and state Endangered grey wolf, which was extirpated from California around the 1920s, has recently begun to re-inhabit

northeastern California. Grey wolves are habitat generalists. They inhabit areas with substantial amount of prey and a low density of humans. As of October 2017, a pack of wolves was documented by CDFW as occupying the Lassen area. A wolf pack was previously known to inhabit the Shasta area. Although the Klamath and Inner Coast Ranges are considered part of the species' potential range and wolves are known to disperse long distances (USFWS ECOS), no wolves have been sighted in Humboldt County at this time.

Potential Impact/Mitigation: The site is southwest of the potential range of the grey wolf as mapped by USFWS ECOS. With the nearest grey wolf packs in California over 100 miles to the northeast, the project is not expected to impact the grey wolf.

AMPHIBIANS AND REPTILES

Potential impacts are evaluated for potentially occurring threatened, endangered, rare and sensitive amphibian and reptile species that have been documented in the surrounding 9-quadrant area. The Redwood Creek watershed could provide habitat for numerous rare and sensitive amphibians, as well as the western pond turtle. Pre-construction surveys for special-status amphibians and the western pond turtle are recommended prior to construction (BIO-8).

1. Pacific tailed frog (*Ascaphus truei*)

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G4, S3S4

Family: Ascaphidae

Habitat/Life-history Requirements: The Pacific tailed frog requires permanent, cool streams in conifer-dominated habitats including redwood, Douglas fir, mixed-conifer, and ponderosa pine habitats (Zeiner et al. 1988). They prefer turbulent waters with rocky substrates in steep-walled valleys with dense vegetation, where the water temperature remains low (Zeiner et al. 1988). Increased water temperature and siltation from logging pose threats to the amphibian (Zeiner et al. 1988). Additionally, invasive American bullfrogs may pose a threat to native amphibians through competition, predation, and spread of disease.

Potential Impact/Mitigation: Steep, densely vegetated streams in the BAA could provide habitat for the Pacific tailed frog. The nearest occurrence mapped in CNDDDB ~5 miles from the project, in the Maple creek watershed. It is recommended that preconstruction amphibian surveys be conducted (BIO-8).

1. Del Norte salamander (*Plethodon elongatus*)

Special Status: CDFW Watch List; NatureServe Ranks: G4, S3

Family: Salamandridae

Habitat/Life-history Requirements: The Del Norte salamander can be found in moist forested habitats, including riparian, Douglas fir, redwood and montane hardwood-conifer forests at low to middle elevations (Zeiner et al. 1988). The lungless terrestrial salamanders will take cover under rotting logs, stabilized talus, or other elements that provide moist microhabitats. Breeding occurs on moist soil, standing water is not a habitat requirement (Zeiner et al. 1988).

Potential Impact/Mitigation: Although the project is not located in an area of prime habitat, it is possible that the Del Norte salamander could be using hydric sites within the BAA. The nearest occurrence mapped in CNDDDB is ~ 3.5 miles from the project. The project should

observe proper SMA buffers and follow all standard conditions to minimize runoff and erosion.

2. **Northern red-legged frog (*Rana aurora*)**

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G4, S3

Family: Ranidae

Habitat/Life-history Requirements: The northern red-legged frog inhabits low-elevation wetlands of the North Coast Ranges from Del Norte to Mendocino Counties (Zeiner et al. 1988). The northern red-legged frog requires permanent pools in streams, marshes, or ponds (Zeiner et al. 1988).

Potential Impact/Mitigation: Area within the BAA could provide habitat for the northern red-legged frog. The nearest occurrence mapped in CNDDDB ~4.5 miles from the project. Amphibian surveys shall be conducted in wetland areas within 200 feet of the project footprint prior to any operations (**BIO-8**). If any special status amphibians are found, the site will be subject to additional mitigation measures in consultation with CDFW and USFS to reduce the impact to less than significant levels.

3. **Foothill yellow-legged frog (*Rana boylei*)**

Special Status: State Candidate for listing as Threatened; CDFW Species of Special Concern; NatureServe Ranks: G3, S3

Family: Ranidae

Habitat/Life-history Requirements: The foothill yellow-legged frog primarily inhabits rocky streams or rivers with permanent water, and may be found in many habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows (Zeiner et al. 1988). Breeding primarily occurs in low-velocity, shallow stream habitats with high habitat heterogeneity (Yarnell 2013). Foothill yellow-legged frogs may also travel substantial distances overland and use seasonally wet areas (Bourque 2008). The invasive American bullfrog and introduced fish species contribute to the reduction of foothill yellow-legged frog populations (Zeiner et al. 1988).

Potential Impact/Mitigation: Riparian areas are likely to provide habitat for the foothill yellow-legged frog. The foothill yellow-legged frog may be impacted by any work in wetland or riparian environments, removal of vegetation cover within SMAs, or development that may inhibit dispersal through upland environments. The nearest occurrence mapped in CNDDDB ~ 3.5 miles from the project. Because the site is proposed within 200 feet of a riparian area, a visual encounter survey is recommended for the foothill yellow-legged frog and other special-status amphibians prior to new construction beginning (**BIO-8**).

4. **Southern torrent salamander (*Rhyacotriton variegatus*)**

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G3G4, S2S3

Family: Rhyacotritonidae

Habitat/Life-history Requirements: The southern torrent salamander primarily occupies cold, shaded permanent streams and seeps in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats in Sonoma, Mendocino, Humboldt and Lake Counties (Zeiner et al. 1988). The newt requires rapid, permanent streams with rocky substrate for breeding and larval development (Zeiner et al. 1988).

Potential Impact/Mitigation: Permanent, rocky streams in the surrounding BAA could provide habitat for the southern torrent salamander. The nearest occurrence mapped in CNDDB ~1.75 miles from the project. Because the site is proposed within 200 feet of a major riparian area, a visual encounter survey is recommended for special-status amphibians and the western pond turtle within 1 week of new construction beginning (BIO-8).

5. **Western pond turtle (*Emys marmorata*)**

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G3G4, S3

Family: Emydidae

Habitat/Life-history Requirements: The western pond turtle is associated with permanent or nearly permanent water in ponds, lakes, streams, irrigation ditches or permanent pools along streams (Ziener et al. 1988). Invasive American bullfrogs prey upon hatchlings and juveniles (Zeiner et al. 1988).

Potential Impact/Mitigation: The BAA provides habitat for the western pond turtle. The nearest occurrence mapped in CNDDB is ~7 miles from the project. Because the site is proposed within 200 feet of a riparian area, a visual encounter survey is recommended for special-status amphibians and the western pond turtle prior to new construction beginning (BIO-8).

FISH

Potential impacts are evaluated for potentially occurring threatened, endangered, rare, and sensitive fish species that have been documented in the surrounding 9-quad area. Numerous protected salmonid species, which are sensitive to sedimentation and pollution from erosion and runoff, may be found within the watershed. Preventing erosion and runoff by implementing proper winterization and replanting SMAs is necessary to avoid impacts to sensitive fish species downstream.

1. **Green Sturgeon (*Acipenser medirostris*)**

Special Status: Federally Threatened; CDFW Species of Special Concern; NatureServe Ranks: G3, S1S2

Family: Acipenser

Habitat/Life-history Requirements: This is a large-bodied fish species that is slow to grow and mature. The green sturgeon is known to spawn only in the Sacramento and Klamath river systems in California and the Rogue River in Oregon (NatureServe, 2016). There is recent evidence of limited green sturgeon spawning in the Eel River based on the collection of both adult and juvenile fish in the mid-1990s. Green sturgeons spend most of their lives in coastal marine waters, estuaries, and the lower reaches of large rivers. They ascend rivers to spawn, but specific spawning and rearing habitats are poorly known.

Potential Impact/Mitigation: The nearest occurrence is in the Northern Humboldt Bay, over 15 miles from the project. Permanent streams on the parcel and in the surrounding area are unlikely to support the Green Sturgeon. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion

2. **Pacific lamprey (*Entosphenus tridentatus*)**

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G4, S4

Family: Petromyzontidae

Habitat/Life-history Requirements: Pacific lamprey require cool, permanent streams with a variety of substrates and structural complexity (CalFish). Lampreys are anadromous and must have unimpeded access to the ocean (CalFish).

Potential Impact/Mitigation: The nearest occurrence is over 13 miles away in the Redwood creek watershed. Permanent streams on the parcel and in the surrounding area are unlikely to support the Pacific lamprey. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

3. **Western brook lamprey (*Lampetra richadsoni*)**

Special Status: CDFW Species of Special Concern; NatureServe Ranks: G4, S4

Family: Petromyzontidae

Habitat/Life-history Requirements: Western Brook Lampreys are typically found in large coastal rivers and their tributaries (CalFish). Larval Brook Lampreys, or ammocoetes, are typically found in slackwater areas or pools where they burrow tail first into soft substrate. Lampreys are anadromous and must have unimpeded access to the ocean (CalFish).

Potential Impact/Mitigation: The nearest occurrence is over 13 miles away in the Redwood creek watershed. Permanent streams on the parcel and in the surrounding area are unlikely to support the Western brook lamprey. The project will avoid impacts to the Western brook lamprey by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

4. **Coastal cutthroat trout (*Oncorhynchus clarkia clarkia*)**

Special Status: CDFW Species of Special Concern, NatureServe Ranks: G4T4, S3

Family: Salmonidae

Habitat/Life-history Requirements: The coastal cutthroat trout is a small salmonid that may be anadromous or resident to watersheds of the Pacific coast from the Eel River of Humboldt County north to Alaska (Moyle et al. 2008). Much like steelhead and other salmonids, coastal cutthroat requires cool streams with deep pools and cover (Moyle et al. 2008). Coastal cutthroat prefers small, low gradient coastal streams, and they may be outcompeted by steelhead in larger streams and rivers where they co-occur (Moyle et al. 2008). Spawning occurs in gravel-bottom riffles and pools (Moyle et al. 2008). The Smith and Klamath River drainages support nearly half of the coastal cutthroat populations in California (Gerstung 1997 cited in Moyle et al. 2008).

Potential Impact/Mitigation: Permanent streams in the surrounding BAA could provide habitat for the anadromous salmonid. The nearest occurrence mapped in CNDDDB is in the Iaqua Buttes quad. Permanent streams on the parcel and in the surrounding area are unlikely to support the Coastal cutthroat trout. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

Coho salmon – southern Oregon / northern California ESU (*Oncorhynchus kisutch*)

Special Status: Federally Threatened, State Threatened; NatureServe Ranks: G4T2Q, S2?

Family: Salmonidae

Habitat/Life-history Requirements: Coho salmon are a federally and state-listed anadromous fish that occupy low gradient rivers and coastal streams (CDFW). The anadromous salmonids return to these watersheds in the fall and early winter to spawn in gravel substrate, after the first major rains (Moyle et al. 2008). Coho require cool, clear perennial streams and rivers with structural complexity for cover and low suspended sediment (Moyle et al. 2008). Juveniles are most abundant in well-shaded, deep pools with many structural elements that provide cover (Moyle et al. 2008). Sedimentation is a major threat to salmonids in their early life stages.

Potential Impact/Mitigation: Redwood Creek and its tributaries may provide habitat. Permanent streams on the parcel and in the surrounding area are unlikely to support the salmon. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

5. **Steelhead – northern California DPS (*Oncorhynchus mykiss irideus*)**

Special Status: Federally Threatened; NatureServe Ranks: G5T2T3Q, S2S3

Family: Salmonidae

Habitat/Life-history Requirements: Steelhead are anadromous rainbow trout that migrate to the ocean as juveniles and return to freshwater habitats to spawn. The Northern California Distinct Population Segment (DPS) ranges from Redwood Creek to just south of the Gualala River, and includes the Eel River watershed (Moyle et al. 2008). Salmonids, including steelhead, require cool, clear perennial streams and rivers with structural complexity for cover and low suspended sediment. Steelhead may swim upstream in during the winter to spawn in stream segments that are not accessible to other salmonids during low flows (Moyle et al. 2008). Sedimentation is a major threat to salmonids in their early life stages.

Potential Impact/Mitigation: Redwood Creek and its tributaries may provide habitat. Permanent streams on the parcel and in the surrounding area are unlikely to support the fish. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

6. **Summer-run steelhead trout (*Oncorhynchus mykiss irideus*)**

Special Status: State Candidate Threatened, CDFW Species of Special Concern; NatureServe Ranks: G5T4Q, S2

Family: Salmonidae

Habitat/Life-history Requirements: Summer-run steelhead trout remain in freshwater habitats until they reach maturity (Moyle et al. 2008). These steelhead have similar requirements during their juvenile stages, with an additional need for freshwater habitats to remain suitable throughout the summer (Moyle et al. 2008). Summer steelhead are sensitive to human disturbance and typically are only found in the most remote areas of the watersheds (Moyle et al. 2008). Sedimentation is a major threat to salmonids in their early life stages.

Potential Impact/Mitigation: Redwood Creek and its tributaries may provide habitat. Permanent streams on the parcel and in the surrounding area are unlikely to support the salmon. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

7. **Chinook salmon – California coastal ESU (*Oncorhynchus tshawytscha*)**

Special Status: Federally Threatened; NatureServe Ranks: G5, S1

Family: Salmonidae

Habitat/Life-history Requirements: The Federally Threatened Chinook salmon is the largest Pacific salmonid (Moyle et al. 2008). The California Coast Evolutionary Significant Unit (ESU) is composed of Chinook spawning in watersheds ranging from Redwood Creek south to the Russian River (Moyle et al. 2008). The anadromous salmonids return to these watersheds in the fall to spawn, after the first major rains (Moyle et al. 2008). Chinook, like other salmonids, require cool, clear perennial streams and rivers with structural complexity for cover and low suspended sediment (Moyle et al. 2008). Juvenile chinook may inhabit estuaries for an extended period (Moyle et al. 2008). Chinook are particularly sensitive to temperature and water quality, and require larger cobble and coarse gravel substrate for spawning compared to other salmonids (Moyle et al. 2008). Sedimentation is a major threat to salmonids in their early life stages.

Potential Impact/Mitigation: Redwood Creek and its tributaries may provide habitat. Permanent streams on the parcel and in the surrounding area are unlikely to support the salmon. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion.

8. Eulachon (*Thaleichthys pacificus*)

Special Status: Federally Threatened; NatureServe Ranks: G5, S1

Family: Osmeridae

Habitat/Life-history Requirements: The eulachon is an anadromous smelt that occupies the nearshore ocean bottom and coastal inlets. This fish lives for about 5 years, becoming sexually mature at 3 or 4 years. Spawns in coastal freshwater up to a few miles inland upon silt, sand, gravel, cobble, or detritus, preferably at bar or riffle habitat (NatureServe 2016).

Potential Impact/Mitigation: The parcel is unlikely to provide habitat for the eulachon. The project will avoid impacts to fish by maintaining suitable buffer zones around riparian areas and using best management practices to minimize erosion and runoff.

INVERTEBRATES

Potential impacts are evaluated for potentially occurring threatened, endangered, rare, and sensitive insect pollinator species that have been documented in the surrounding 9-quad area. Pollinators are addressed in particular because they may be affected by development and agricultural activities. The western bumblebee is also a candidate for listing under CESA.

1. Obscure bumble bee (*Bombus caliginosus*)

Special Status: CDFW Special Animals List; NatureServe Ranks: G4?, S1S2

Family: Apidae

Habitat/Life-history Requirements: The obscure bumble bee occupies open grassy coastal prairies and Coast Range meadows (IUCN). This long-tongued species may pollinate flowers with elongated corollas, such as *Keckiella* spp. (IUCN). The obscure bumblebee does not fare well in agricultural or urban/suburban environments, where it is often outcompeted by more common bumblebees (NatureServe). The obscure bumblebee has declined in the San Francisco Bay area, and may be threatened by habitat loss from development (NatureServe).

Potential Impact/Mitigation: An occurrence mapped in CNDDB over 9 miles away from the project. The property has the potential to support many native pollinators. Adhering to

restrictions and regulations of pesticide use in cannabis cultivation areas, including preventing drift to native vegetation, is expected to minimize the potential impact of cultivation in the area (**BIO-10**).

2. Western bumble bee (*Bombus occidentalis*)

Special Status: State Candidate Endangered, NatureServe Ranks: G2G3, S1

Family: Apidae

Habitat/Life-history Requirements: The western bumble bee is a generalist short-tongued forager that may be found in open habitats such as grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows (IUCN). Like many bumble bees, the western bumble bee nests underground in abandoned rodent holes (IUCN). The western bumble bee is threatened by disease, habitat loss and degradation, and insecticides.

Potential Impact/Mitigation: An occurrence mapped in CNDDDB over 7 miles away from the project. The property has the potential to support many native pollinators. Adhering to restrictions and regulations of pesticide use in cannabis cultivation areas, including preventing drift to native vegetation, is expected to minimize the potential impact of cultivation on pollinators (**BIO-10**). Additionally, maintaining native riparian habitat is important for the western bumblebee.

4.4 Wildlife Movement and Connectivity

Riparian areas may serve as corridors for wildlife movement, and forested areas adjacent to major rivers have increased value to wildlife. It is important to maintain native vegetation communities around riparian areas that may provide cover, forage, and other value to wildlife. Trees removed from site 1 have opened up the forest and does not appear to be needed to replanted. However, improving upland health is recommended to improve habitat value and minimize meadow encroachment (**BIO-2**). It is important that wildlife movement to water and through riparian areas is not impeded by fencing or materials that could cause wildlife to become entangled. Poly-netting is currently being used to fence in cultivation areas. No plastic bird/deer netting should be used in cultivation because netting may become an entanglement hazard if it becomes litter in the natural environment (**BIO-11**).

5. Conclusions

5.1 Summary of Potential Impacts and Mitigations

Restoration is needed to mitigate for the degradation of upland habitats. No additional oak trees should be removed from the property, and there should be Douglas Fir tree removal to prevent meadow encroachment (**BIO-2**). There is a large Quonset within the SMA of a class III watercourse. At this time, the structure is not proposed to be used for any cannabis activity. It is recommended to retain the Quonset structure, given that the French drain system is maintained, the foundation is resilient to erosion, and removing the structure may cause more long-term erosion potential for the class III water course.

Mitigation measures have been recommended to reduce potential impacts to sensitive species and wildlife movement to less-than-significant levels. Surveys are recommended for potentially occurring special status plants, amphibians, raptors. The artificial pond on the

property provide enhanced habitat for the invasive, predatory American bullfrog. Bullfrog monitoring and removal are recommended, following CDFW guidelines to mitigate impacts to sensitive amphibians and the western pond turtle (**BIO-3**). If special status species are detected, appropriate protective buffers or other mitigation measures will be established in consultation with CDFW. A detailed write-up of the potential impact to the Northern Spotted Owl with habitat mapping can be found in Attachment E. A detailed write-up of the potential impact to the Marbled Murrelet with habitat mapping can be found in Attachment F. All additional surveys and mitigation measures recommended to reduce impacts to less-than-significant levels are listed in the table below (5.2).

5.2 Recommended Surveys and Mitigation Measures for Potentially Significant Impacts

Name	Impact	Mitigation Description
BIO-1	Degradation of riparian habitat quality and water quality	The project will primarily avoid impacting wetlands by relocating non-permanent cultivation areas and not developing any sites within the 50-foot applicable Streamside Management Zone buffer distance. A portion of Site #2 is within the SMA and should be relocated to outside of the 50-foot buffer from the Class III drainage.
BIO-2	Degradation of upland habitat	The applicant should manage Douglas fir meadow encroachment. It is recommended that Douglas fir trees with DBH less than or equal to 5 inches that are identified to be encroaching on the meadow should be removed.
BIO-3	Potential facilitation of American bullfrog invasion	It is recommended bullfrog monitoring in the artificial ponds is implemented. If bullfrogs are detected it is recommended that water storage ponds are drawn down completely by the end of the summer (August/September) to prevent them from becoming breeding habitat that facilitates American bullfrog invasion. If ponds cannot be feasibly drawn down each year, bullfrog monitoring and eradication according to CDFW guidelines may be a suitable alternative. Management for bullfrogs must be reported to CDFW by the end of each year.
BIO-4	Potential takes for Raptors	Before any additional construction, the area will be surveyed for nesting/roosting raptors by scanning the property and surrounding area from a prominent location. Two three-hour surveys will occur during the early/peak breeding season, March-June. Surveys will occur prior to any additional construction or clearing native vegetation between Feb. 1 and Aug. 31.
BIO-5	Potential take of nesting birds	Before any additional construction or tree removal during the breeding season (Feb 1- Aug 31) a qualified biologist will search the area of vegetation removal for nesting birds. All native birds are protected under the Migratory Bird Treaty Act. A protective buffer shall be established around any active nests in consultation with CDFW.
BIO-6	Erosion Prevention	If the Quonset structure is to remain intact, the drainages and culverts should be maintained to prevent erosion or water saturation of soil on the flat.
BIO-7	Potential disturbance or habitat reduction for the Northern Spotted Owl (NSO)	A Habitat Assessment for NSO has been completed (Attachment E). A two years of protocol-level Northern Spotted Owl (NSO) surveys (USFWS 2012) are recommended if the project may modify NSO habitat or substantially disturb potential breeding habitat. The current operations are not expected to modify NSO habitat or substantially disturb potential breeding habitat.

BIO-8	Potential habitat loss or disturbance of amphibians or the western pond turtle	Because the site is located within 100 feet of Class II and Class III drainages preconstruction amphibian and western pond turtle survey shall be conducted. If any special status amphibians are found, CDFW will be consulted to determine appropriate construction restrictions and other mitigations.
BIO-9	Disturbance to wildlife from noise pollution or light pollution	The applicant will follow guidelines for reducing noise pollution, which may impact sensitive species including bats, NSO, and other birds. Generator use will follow Humboldt County Performance Standards for Generator Noise. Additionally, the following measures are recommended: - The generator should be contained in an insulated structure to muffle noise, and it should be kept away from SMAs. - The measured generator noise at the forest edge should not exceed ambient levels (<50dB or equivalent to levels at the property edge without the generator). - Temporary noise disturbances (such as running power tools) should occur during daylight hours to minimize disturbance to foraging bats or NSO. Noise levels from the project should not exceed 75dB at the forest edge during the bird breeding season (Feb. 1-Aug 31)
BIO-10	Potential impacts of pesticides on pollinators	- Pesticides that may be used for marijuana cultivation are limited to low-risk exempt substances and those that are broadly labeled by the Department of Pesticide Regulation. The potential impact of insecticide use on pollinators shall be reduced by not spraying in the presence of pollinators and not allowing drift to flowering plants in the surrounding area.
BIO-11	Potential wildlife entanglement in netting and fencing	All unused netting and fencing must be properly stored in sheds or other containers where they do not pose a threat to wildlife. Use of plastic bird/deer netting at cultivation sites must be discontinued.

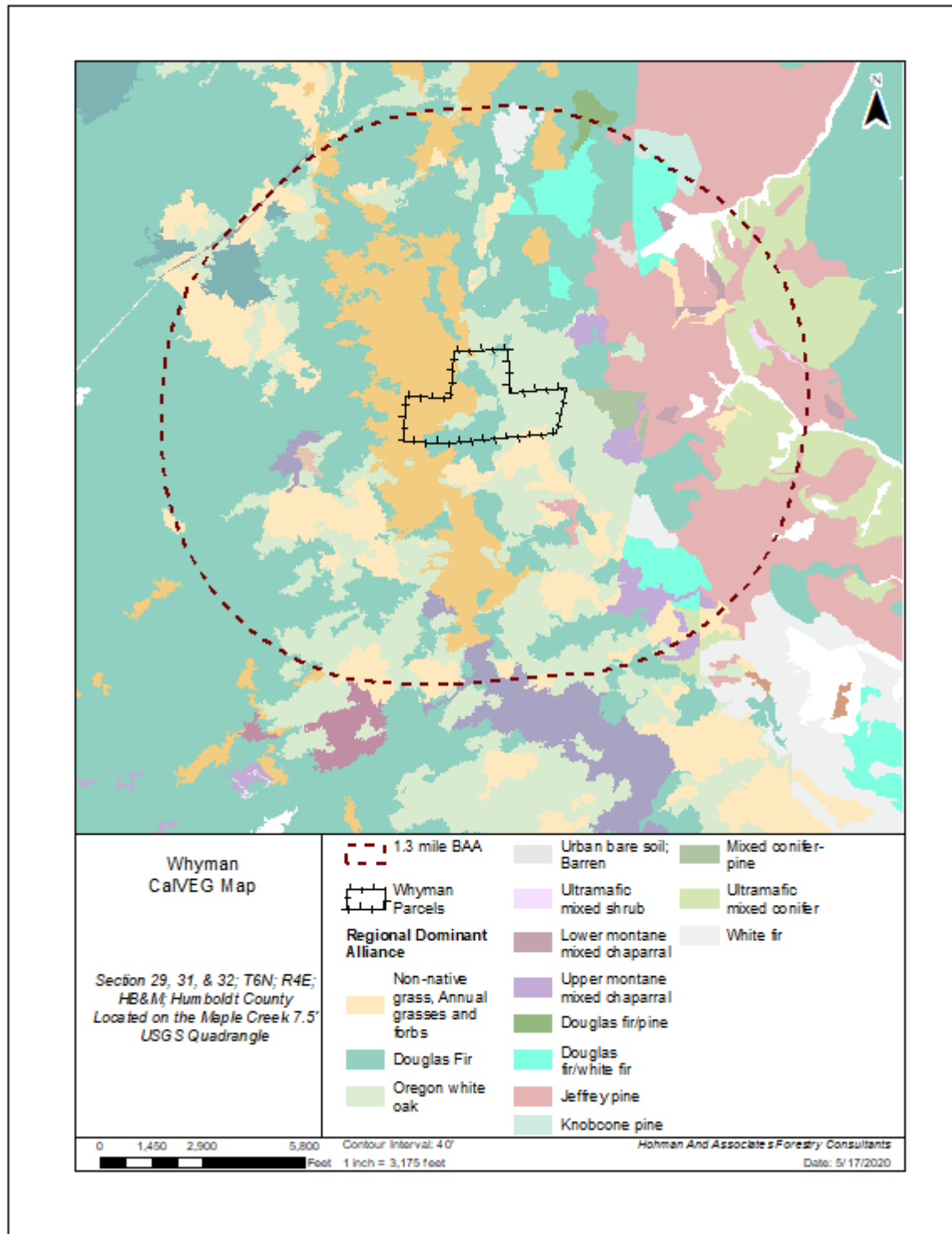
6. References

- Bombay, H.L., Benson, T.M., Valentine, B.E. and Stefani, R.A., 2003. A willow flycatcher survey protocol for California. U.S. Forest Service, Pacific Southwest Region, Vallejo, California.
- Bourque, R. 2008. Spatial ecology of an inland population of the foothill yellow-legged frog (*Rana boylei*) in Tehama County, California. Arcata, CA: Humboldt State University. 93 p. M.S. thesis.
- CABI, 2019. *Rana catesbeiana* (American bullfrog). In: Invasive Species Compendium. Wallingford, UK: CAB International. <www.cabi.org/isc>.
- CalFish: A California Cooperative Anadromous Fish and Habitat Data Program. Species Pages. <http://www.calfish.org/FisheriesManagement/SpeciesPages/PacificLamprey.aspx>.
- California Department of Fish and Wildlife, Natural Diversity Database, BIOS. 2019. California Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW), California Natural Diversity Database, Special Animals List. 2019. California Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, CA. <<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline>>.
- Cook, D. G. 2012. *Rana boylei* (Foothill yellow-legged frog). Upland Movement. Herpetological Review 43(2): 325.
- Cornell Lab of Ornithology, "All About Birds: Bird Guide." <<https://www.allaboutbirds.org/guide/search.aspx>>.
- Craig, D. and P. L. Williams. 1998. Willow Flycatcher (*Empidonax traillii*). In The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. <http://www.prbo.org/calpif/htmldocs/riparian_v-2.html>.
- Evans Mack, D., W. P. Ritchie, S. K. Nelson, E. Kuo-Harrison, P. Harrison, and T. E. Hamer. 2003. Methods for surveying Marbled Murrelets in forests: a revised protocol for land management and research. Pacific Seabird Group Technical Publication Number 2. Available from <http://www.pacificseabirdgroup.org>.
- Hamer, T.E., W.P. Ritchie, E.B. Cummins, and C.W. Turley. 1994. Forest habitat relationships of marbled murrelets in western Washington. Unpublished report, Wildlife Management Division, Nongame Program, Washington Department of Wildlife, Olympia, Washington. 51 pp.
- Harris, S.W. 2005. Northwestern California birds. 3rd Ed. Humboldt State Univ., Arcata, CA.
- Humboldt County Code Section 314-55, Medical Marijuana Land Uses: Inland <<https://humboldt.county.codes/Code/314-55>>.
- Humboldt County Code Section 314-61, Streamside Management Areas and Wetlands Ordinance <<https://humboldt.county.codes/Code/314-61>>.

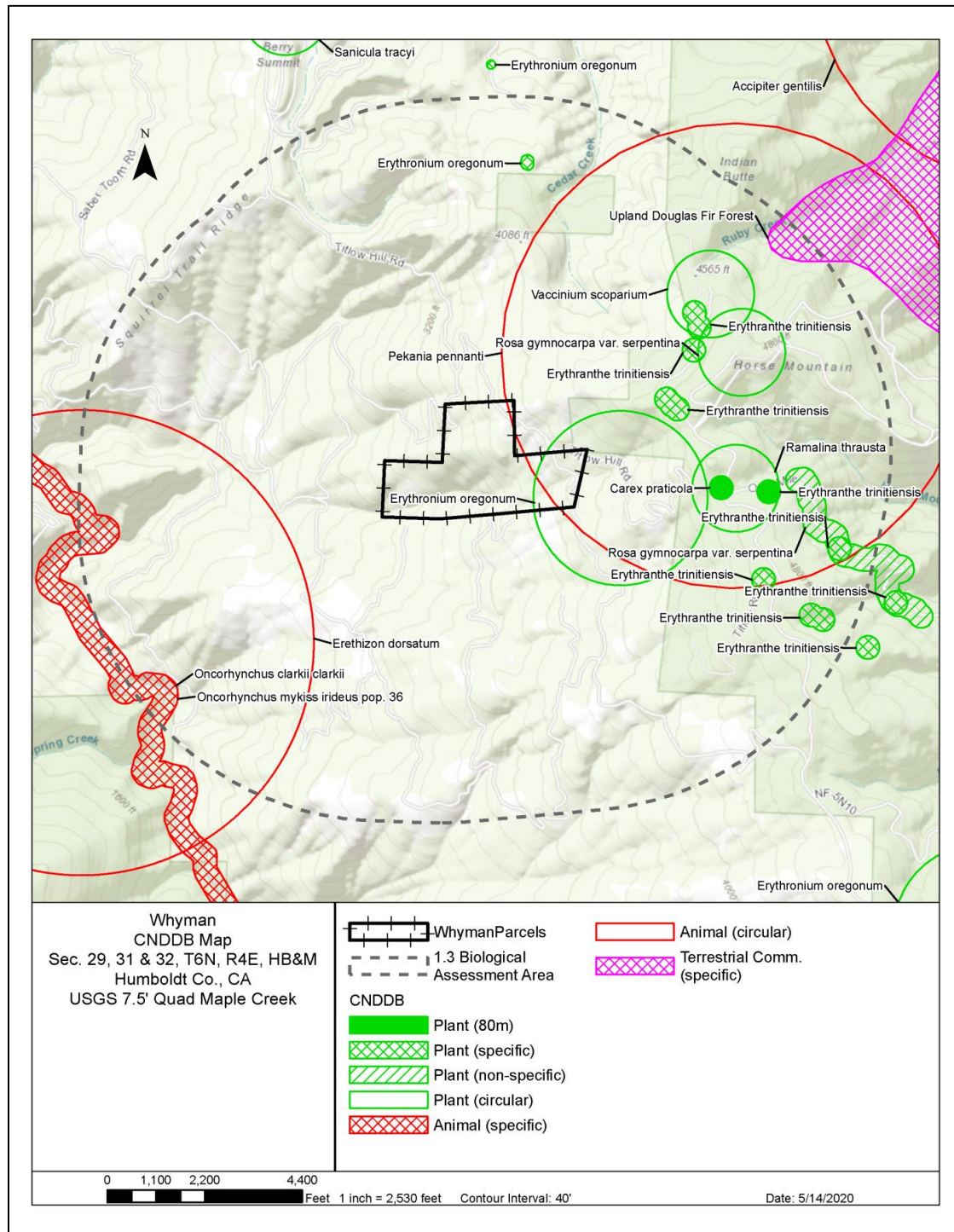
- Hunter, J.E., Fix, D., Schmidt, G.A., and Power, J.C. 2005. Atlas of the breeding birds of Humboldt County, California. Redwood Region Audubon Society.
- Moyle, P.B., J.A. Israel, and S.E. Purdy. 2008. Salmon, Steelhead, and Trout in California: Status of an Emblematic Fauna. U.C. Davis Center for Watershed Sciences.
- Nafis, G. 2000-2017. California Herps - A Guide to the Amphibians and Reptiles of California. <<http://www.californiaherps.com/>>
- NatureServe. 2019. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <<http://explorer.natureserve.org>>.
- Rodewald, P. (Editor). 2015. The Birds of North America: <https://birdsna.org>. Cornell Laboratory of Ornithology, Ithaca, NY.
- Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. <<https://www.wildlife.ca.gov/Conservation/SSC/Birds>>.
- Sibley, D.A., 2003. The Sibley field guide to birds of Western North America. Alfred A. Knopf, New York.
- State Water Resources Control Board Order WQ 2019-0001-DWQ. General Waste Discharge Requirements And Waiver Of Waste Discharge Requirements For Discharges Of Waste Associated With Cannabis Cultivation Activities. <https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2019/wqo2019_0001_dwq.pdf>.
- Sullivan, B.L., C.L. Wood, M.J. Iliff, R.E. Bonney, D. Fink, and S. Kelling. 2009. eBird: a citizen-based bird observation network in the biological sciences. *Biological Conservation* 142: 2282-2292.
- U.S. Fish and Wildlife Service (USFWS ECOS). ECOS Environmental Conservation Online System. <<https://ecos.fws.gov/ecp/>>.
- U.S. Fish and Wildlife Service (USFWS). 2006. Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California. Arcata, CA.
- U.S. Fish and Wildlife Service (USFWS). 2014. Draft Species Report: Fisher (*Pekania pennanti*), West Coast Population. <https://www.fws.gov/yreka/20140911_WCFR_finaldraft.pdf>.
- Xerces Society for Invertebrate Conservation. Bumble bee conservation. Portland, OR. <<http://xerces.org/bumblebees/>>.
- Yarnell, S. 2013. 'Stream Habitat Associations of the Foothill Yellow-Legged Frog (*Rana boylei*): The Importance of Habitat Heterogeneity,' in Maddock, I., Harby, A., Kemp, P., and Wood, P., *Ecohydraulics: An Integrated Approach*, First Edition. John Wiley & Sons, Ltd., p. 93.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR Program Staff, February 2005. <<https://www.wildlife.ca.gov/data/cwhr/life-history-and-range>>.

Attachment A. CALVEG Vegetation Alliance Map of Surrounding Area



Attachment B. CNDDDB Special Status Taxa Search Map



Attachment C. Habitat Photos



Photo 1. Quonset structure that was built within SMA of Class III.



Photo 2. Drainage with French drain system within 20 feet of Quonset structure.



Photo 3. Cultivation area (part of Site 2) within SMA of Class III drainage.

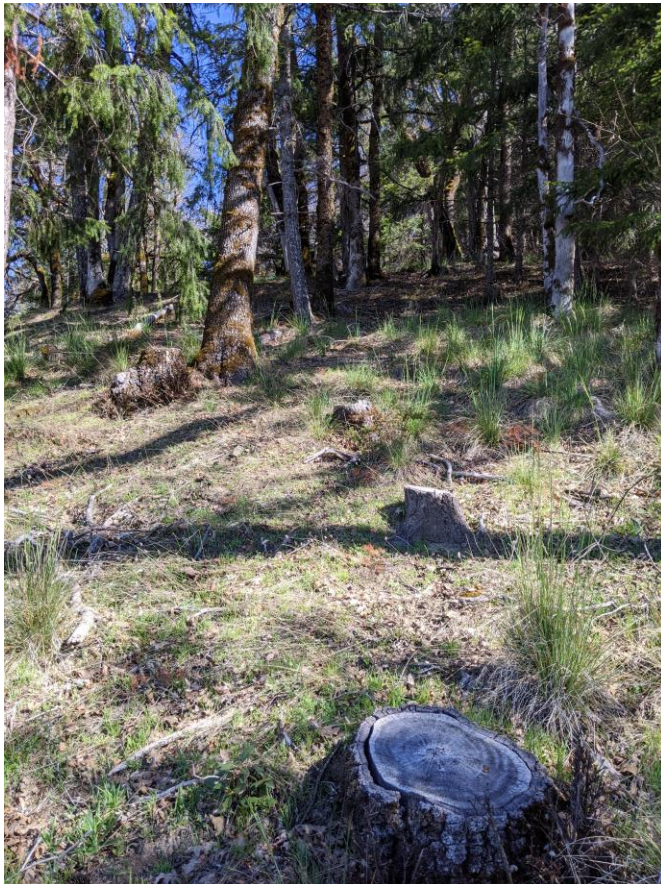


Photo 4. Removal of oak woodland habitat next to Site 1.



Photo 5. Upland habitat, with Douglas Fir encroaching on meadow habitat next to Site 1.

Attachment D. Rank Definitions

Listed below are definitions for interpreting NatureServe global (range-wide) conservation status ranks. These ranks are assigned by NatureServe scientists or by a designated lead office in the NatureServe network.

- G1** **Critically Imperiled** – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2** **Imperiled** – At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.
- G3** **Vulnerable** – At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
- G4** **Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5** **Secure** – Common; widespread and abundant.
- G#G#** **Range Rank** – A numeric range range (e.g. G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).

Intraspecific Taxon Conservation Status Ranks

- T#** **Intraspecific Taxon** (trimonial) – The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. For example, a G1T2 subrank should not occur. A vertebrate animal population, (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T-rank; in such cases a Q is used after the T-rank to denote the taxon’s informal taxonomic status.

Subnational (S) Conservation Status Ranks

- S1** **Critically Imperiled** – Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.
- S2** **Imperiled** – Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.
- S3** **Vulnerable** – Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4** **Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5** **Secure** – Common, widespread, and abundant in the jurisdiction.
- S#S#** **Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

Rank Qualifiers

- ?** **Inexact Numeric Rank** – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status
- Q** **Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The “Q” modifier is only used at a global level and not at a national or subnational level.

Attachment E. NSO Habitat Assessment



P.O. Box 733, Hydesville, CA 95547 . (707) 768-3743 . (707) 768-3747 fax

Northern Spotted Owl Habitat Assessment Whyman

May 18, 2020

A Northern Spotted Owl (NSO) Habitat Assessment has been prepared to determine whether cannabis cultivation on the Whyman Parcel (APN(s): 316-171-005, 316-185-008, 316-186-006) has the potential to affect the Federally Threatened and State Threatened species, the northern spotted owl. The entire parcel is a contiguous parcel broken up into three APN(s): 316-171-005, 316-185-008, and 316-186-006 but cannabis cultivation will only occur on APN: 316-171-005. The Whyman parcel is located in Sections 29, 31 and 32, Township 6 North, Range 4 East HB&M; Humboldt County, on the Maple Creek USGS 7.5' quadrangle. Additional NSO Habitat Assessments and/or NSO Surveys will be recommended if additional projects are proposed. This assessment considers the potential impact of the cultivation areas on the Whyman parcel that has ongoing Cannabis cultivation.

One NSO database Activity Center is recorded within 1.3 miles of the cultivation area (HUM0738). See attached NSO Spotted Owl Database map. Potential nesting/roosting, and foraging habitat have been mapped in the 1.3 mile-buffer (see attached habitat map). Northern Spotted Owl surveys according to the USFWS Protocol (2012) are recommended for projects that may impact spotted owls by modifying habitat, disrupting essential breeding activities, or otherwise harm NSO. The current cultivation operations are not expected to modify NSO habitat. However, if additional development is proposed, the additional habitat alteration can potentially impact the northern spotted owl.

The USFWS Protocol Take Avoidance Analysis states that no activities that may disturb breeding NSO shall occur within 0.25 miles during the breeding season. The standard 0.25-mile disturbance buffer contains likely Foraging and Nesting/Roosting habitat (see attached NSO Habitat Map). Upland habitat on the property may provide important foraging habitat for the NSO.

Nighttime lighting has the potential to affect foraging or dispersing NSO. Humboldt County's Commercial Cannabis Land Use Ordinance (CCLUO) indicates that all mixed-light operations must be shielded so that no light escapes between sunset and sunrise. Prior to incorporating mixed light, it is recommended that the applicant develops a Light Attenuation Plan detailing a specific method of shading greenhouses at night. A monitoring component should be included in the plan to ensure that no light can escape and that shades are consistently used.

Cultivation operations are a potential source of noise disturbance if generators are utilized. Humboldt County Performance Standards for generator use state that the project should show that it will not result in harassment of NSO. NSO are likely to use woodland and forested habitat on the property for foraging and dispersal. It is therefore recommended that noise levels at the edge of woodland and forest habitat on the property are kept in the *Natural Ambient*

(<50dB) to *Very Low* (50-60dB) range as listed in USFWS guidance (2006) between dusk and dawn. Any power tool usage should occur during daylight hours, when NSO are not likely to be foraging. Generator use must be restricted to daytime hours or muffled so that noise levels do not exceed 60dB at the woodland or forest edge.

Provided that noise is restricted between dusk and dawn, and that the project otherwise adheres to Humboldt County Performance Standards for generator use and lighting, planned operations on the Whyman parcel is unlikely to substantially disturb nesting or roosting habitat or otherwise result in “take” of NSO. Completion of NSO Surveys is not necessary for continued cultivation on the Whyman as planned, which does not entail tree removal. It is recommended that additional assessments and/or surveys are conducted for any plans that might modify habitat, remove potential nest trees, or disturb potential breeding habitat are proposed.

The property is approximately 160 acres. The current cultivation area on the Whyman parcel is composed of mixed coniferous forests and open grasslands. Canopy cover in the surrounding area ranges from 0 to 75 percent. Maps have been attached showing NSO habitat mapped within the 0.25-mile disturbance footprint buffer for the Whyman Parcel. NSO Habitat was determined by following guidelines provided in “Attachment B: Take Avoidance Analysis - Interior” of the USFWS *Northern Spotted Owl Survey Protocol* (2012). Please see attachments as follows:

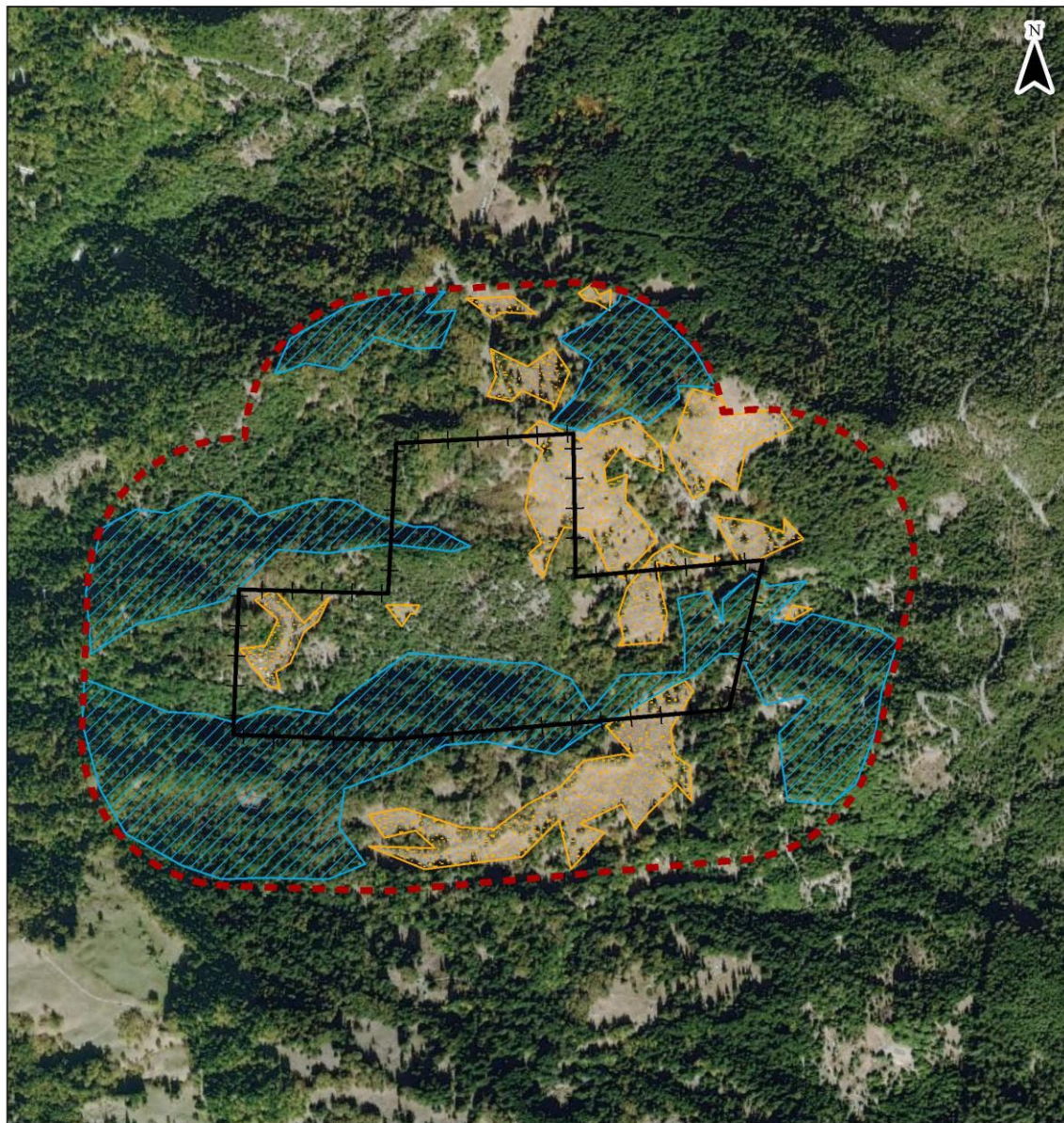
- Functional NSO Habitat within 0.25-mile disturbance buffer
- NSO CNDDDB Map

Please contact us by phone or email if you have any further questions.

Sincerely,



Corrina Kamoroff
Wildlife Biologist
Hohman and Associates



Whyman NSO Habitat Map

Section 29, 31 & 32; T6N; R4E; HB&M;
Humboldt County
Located on the Maple Creek 7.5' USGS
Quadrangle

.25 mile Buffer
WhymanParcels

Functional Habitat Type

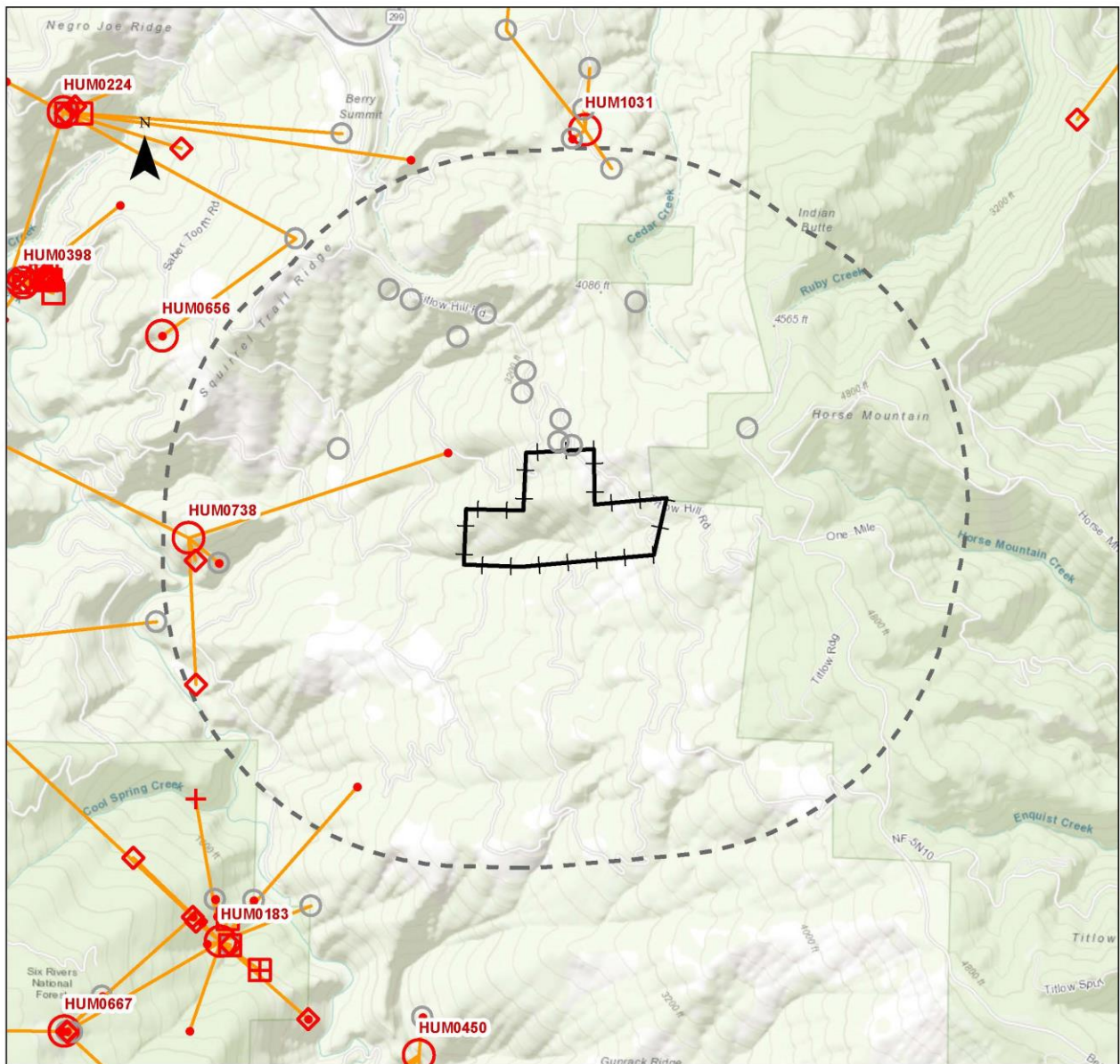
Nesting/Roosting
Foraging

Non-Habitat

0 550 1,100 2,200
Feet

Contour Interval: 40'
1 inch = 1,252 feet

Hohman And Associates Forestry Consultants
Date: 5/17/2020

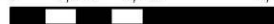


Whyman
NSO Database Check Map
Sec. 29, 31 & 32, T6N, R4E, HB&M
Humboldt Co., CA
USGS 7.5' Quad Maple Creek

- Whyman Parcels
- 1.3 Biological Assessment Area
- Spotted Owl Spider Diagram
- Spotted Owl Observations
 - Nest
 - Young
 - Pair

- Other Positive Observation
- Negative Observation
- Activity Center
- Abandoned Activity Center
- Not Valid Activity Center

0 1,350 2,700 5,400



Feet 1 inch = 3,127 feet Contour Interval: 40'

Date: 5/14/2020

Attachment F. Marbled Murrelet Habitat Assessment



P.O. Box 733, Hydesville, CA 95547 . (707) 768-3743 . (707) 768-3747 fax

Marbled Murrelet Habitat Assessment Whyman

May 18, 2020

A Marbled murrelet (*Brachyramphus marmoratus*) Habitat Assessment has been prepared to determine whether cannabis cultivation on the Whyman Parcel (APN(s):316-171-005, 316-185-008, 316-186-006) has the potential to affect the Federally Threatened and State Endangered species, the Marbled murrelet. The entire parcel is a contiguous parcel broken up into three APN(s): 316-171-005, 316-185-008, and 316-186-006 but cannabis cultivation will only occur on APN: 316-171-005. The Whyman parcel is located in Sections 29, 31 and 32, Township 6 North, Range 4 East HB&M; Humboldt County, on the Maple Creek. USGS 7.5' quadrangle. This assessment considers the potential impact of the cultivation areas on the Whyman parcel that has ongoing Cannabis cultivation.

The Marbled murrelet nests in large trees in mature coastal forests along the Pacific coast, especially old-growth redwood and Douglas-fir forests (Zeiner et al. 1988). U.S. Fish and Wildlife Service has designated areas of mature coastal forest in Northern California as critical habitat based on the presence of individual trees with potential nesting platforms, and forested areas within 0.5 miles of individual trees with potential nesting platforms that had a canopy height of at least one-half the average maximum potential height for trees given local growing conditions (USFWS 2011). The presence of trees with potential nesting platforms is considered the most important predictor of Marbled murrelet presence (Hammer et al.). The Marbled murrelet may also use suitable mature coniferous forests in more inland areas. If the site contains potential breeding habitat, surveys will be recommended. It is recommended that the site is assessed for any mature coniferous forest with the potential to support nesting platforms within 0.25 miles of the project. Audio-visual surveys should be conducted in areas that contain mature coniferous forest or trees with suitable platforms.

The closest documented occurrence in CNDDDB of the Marbled Murrelet is within the Hupa Mountain quad over 10 miles away from the Whyman Parcel. There is designated critical habitat within the 1.3 mile BAA, but not within 0.25 miles of the Whyman operations boundary (see attached map below). There is a chance that the Marbled murrelet will utilize habitat in the BAA, as the parcel is approximately 20 miles inland and within two miles of designated critical habitat for the Marbled murrelet.

Additionally, noise disturbance has the potential to affect nesting Marbled murrelets. Cultivation operations are a potential source of noise disturbance if generators are utilized. Humboldt County Performance Standards for generator use state that the project should show that it will not result in harassment of the Marbled murrelet. It is therefore recommended that noise levels at the edge of woodland and forest habitat on the property are kept in the *Natural Ambient* (<50dB) to *Very Low* (50-60dB) range. Surveys for nesting birds are recommended prior to activities that may increase disturbance to nesting conditions by more than 25dB, such as construction (83dB-96dB).

It is recommended that additional assessments and/or surveys are conducted for any additional plans that might modify habitat, remove potential nest trees or platforms, or disturb potential breeding habitat. Current operations for the Whyman cultivation plan do not include habitat removal within 0.25 miles of the operations boundary and are not expected to negatively impact Marbled murrelet habitat, thus surveys are not recommended at this time.

Provided that noise is restricted and that the project otherwise adheres to Humboldt County Performance Standards for generator use, planned operations on the Whyman parcel is unlikely to substantially disturb Marbled Murrelet habitat or otherwise result in “take” of the Marbled murrelet.

The property is approximately 160 acres. Canopy cover in the surrounding area ranges from 0 to 75 percent. The current cultivation area on the Whyman parcel is composed of mixed coniferous forests and open grasslands.

Please see attachments as follows:

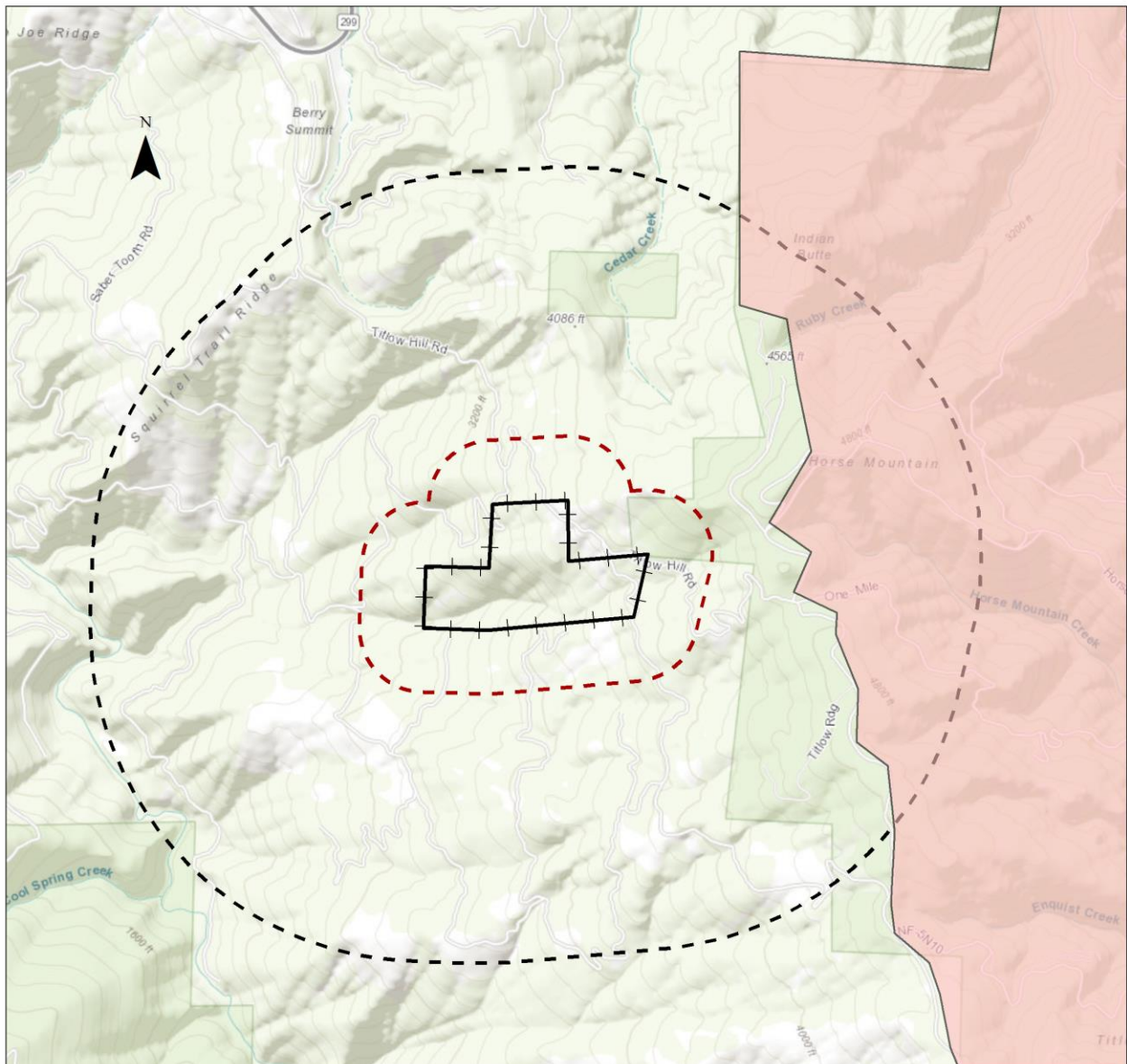
- Designated critical habitat for the Marbled murrelet Habitat within 0.25-mile Disturbance Buffer
- CNDDDB Database Check Map

Please contact us by phone or email if you have any further questions.

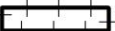
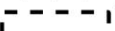
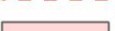
Sincerely,



Corrina Kamoroff
Wildlife Biologist
Hohman and Associates



Whyman
Marbled Murrelet Critical Habitat
Sec. 29, 31 & 32, T6N, R4E, HB&M
Humboldt Co., CA
USGS 7.5' Quad Maple Creek

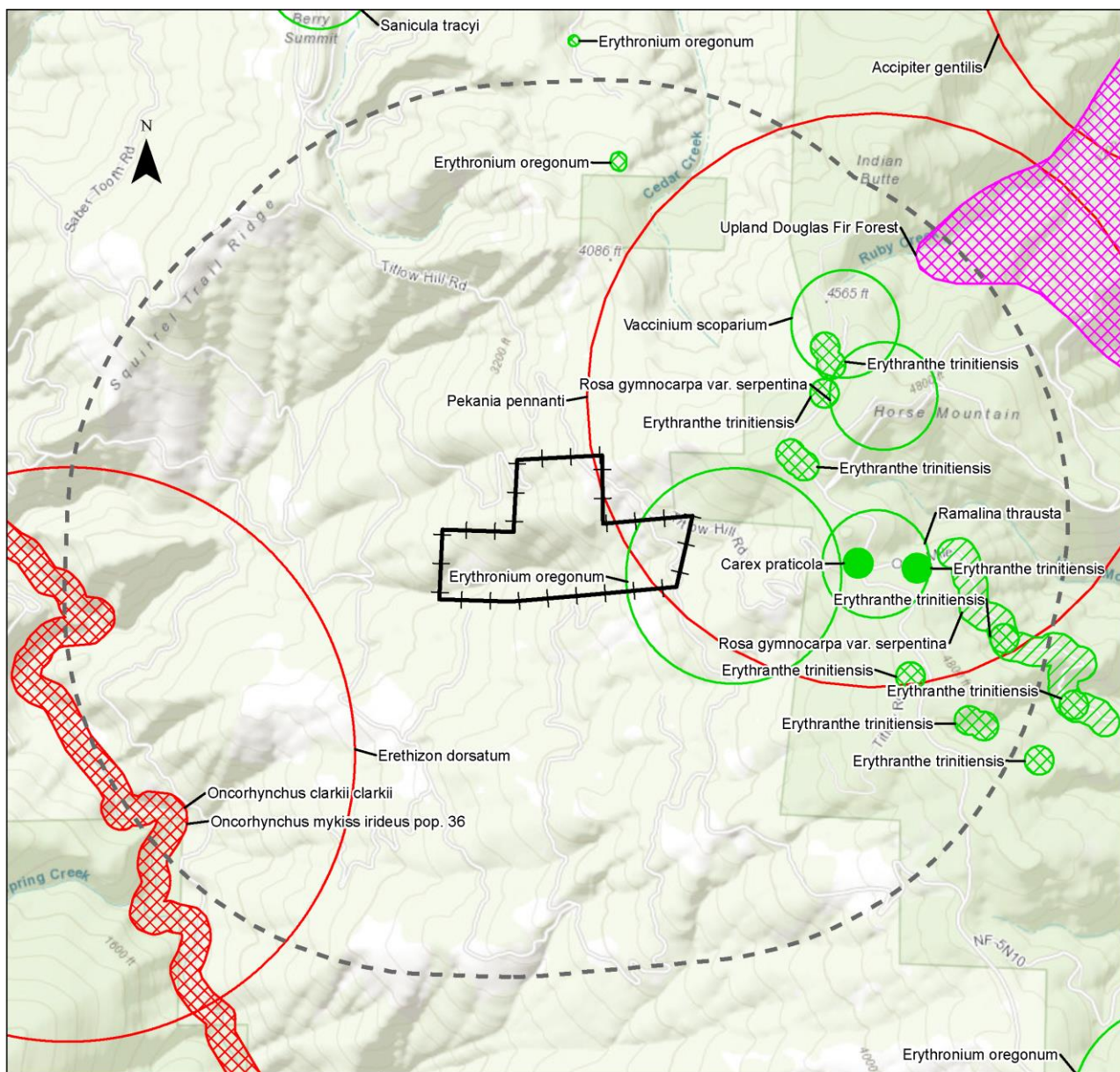
-  Whyman Parcels
-  1.3 Biological Assessment Area
-  WhymanParcels_B...
-  Marbled murrelet Critical Habitat

0 1,200 2,400 4,800



Feet 1 inch = 2,849 feet Contour Interval: 40'

Date: 5/18/2020



Whyman
CNDDDB Map
Sec. 29, 31 & 32, T6N, R4E, HB&M
Humboldt Co., CA
USGS 7.5' Quad Maple Creek

WhymanParcels
1.3 Biological
Assessment Area

CNDDDB

Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (specific)

Animal (circular)
Terrestrial Comm.
(specific)

0 1,100 2,200 4,400

Feet 1 inch = 2,530 feet Contour Interval: 40'

Date: 5/14/2020