SECTION 6.0
APPENDIX

Biological Report

Trinity Sungrown

610 Kaut Road, Burnt Ranch, CA 95527

Trinity County, CA

Prepared for:

Nicholas Holliday

PO Box 220

Burnt Ranch, CA 95527

Contact:

Marie Petersen, Director of Environmental Services

Down River Consulting

mp.downriver@gmail.com

Down River Consulting

Contents

Executive Summary

This initial biological assessment was completed as a requirement of the Conditional Use Permit for a Type 3 Medium Outdoor Cannabis Cultivation License (up to 1 acre of canopy). The project is located on an Agricultural Preserve (AP) zoned parcel with a long history of agricultural uses. A pre-survey nine quad California Natural Diversity Database search revealed 18 threatened, endangered, or sensitive (TES) plants, 24 TES animals, and 4 TES fish, with documented occurrences in the area. In addition, there are at least 5 pollinator invertebrates that are currently in a state of population decline. Although likely to occur in the area, they do not actually have documented occurrences in the CNDDB data. A majority of the vegetation documented in the project area is ruderal and non-native; however, the property is underlain by serpentine substrates and has the potential to support ultramafic plant communities. Intensive vegetation management incorporating integrated pest management and other land management tools can mitigate the legacy impacts of anthropogenic disturbance and restore the habitat potential for the many TES species that use this property. Project design and mitigation requirements should include a thoughtfully integrated Pest Management Plan that minimizes harm by accounting for biological and behavioral patterns for these species.

Abbreviations

CDFW- California Department of Fish and Wildlife

CEQA- California Environmental Quality Act

CESA- California Endangered Species Act

CNDDB- California Natural Diversity Database

CNPS- California Native Plant Society

LSAA- Lake and Streambed Alteration Agreement

MAUCRSA- Medical and Adult-Use Cannabis Regulation and Safety Act

NCRWQCB- North Coast Regional Water Quality Control Board

SWRCB- State Water Resources Control Board

TES- Threatened, Endangered, or Sensitive

USFS- United States Forest Service

Introduction

The purpose of this report is to provide an initial analysis of the potential for threatened, endangered, and/or sensitive (TES) biological resources to occur on the proposed cannabis cultivation sites applying for a Type 3 Medium Outdoor (up to 1 acre of canopy) cannabis cultivation license. The Trinity County Planning Department requests that the reports only contain a literature review and the results of a basic onsite assessment. This report was prepared with the following elements: introduction, methodology, literature review, and the results of on-site assessments of the observed biological resources.

Project Description

The project site is located on a 210-acre parcel (Trinity County APN 008-201-10-00) located at 610 Kaut Road in Burnt Ranch, CA. This parcel is in Township 05N, Range 06E, Section 23, Humboldt Meridian. The primary project coordinates are Latitude 40.790754, Longitude -123.482577. The HUC 12 watershed is McDonald Creek-Trinity River (HUC 12 code 180102111106).

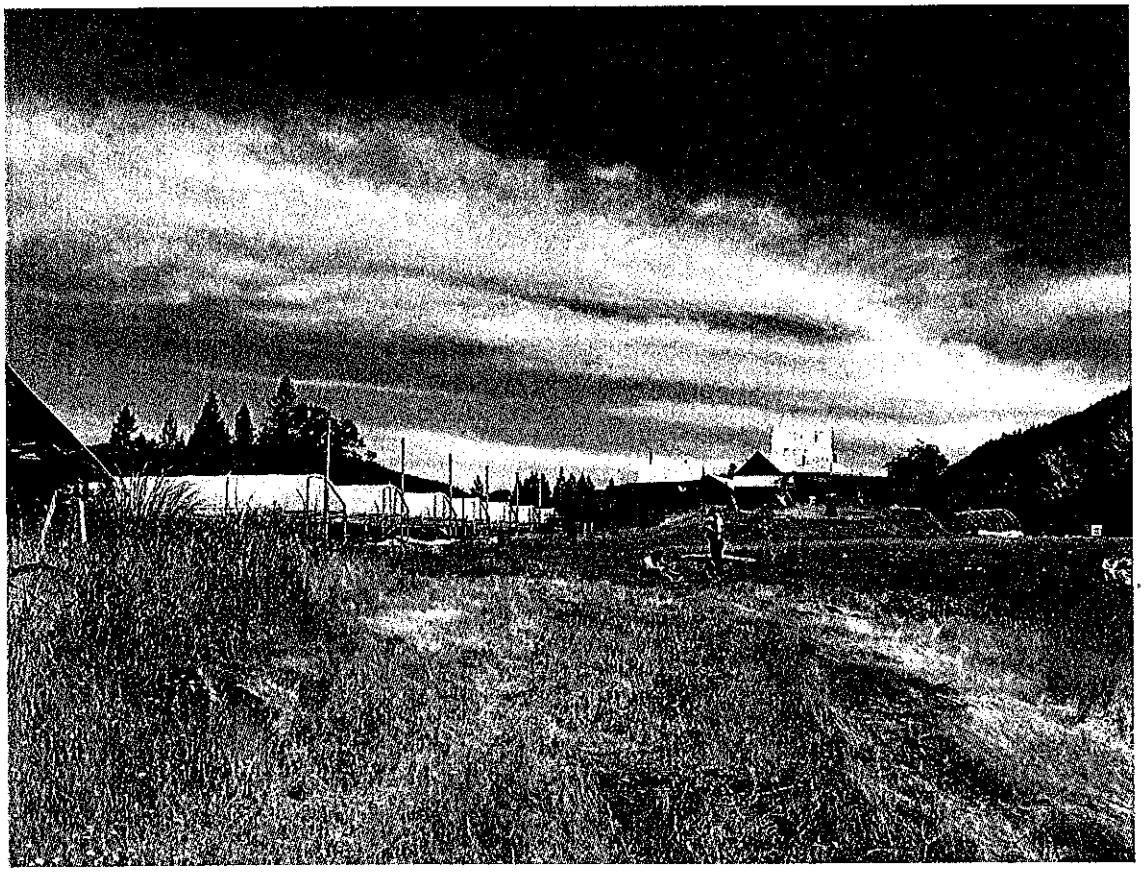


Figure 1: Trinity Sungrown Farm, 2018

Table 1: Property's Project Coordinates

Subproject Identifier	Latitude	Longitude
Current Garden Area	40.795847	-123.481370
Proposed Expansion Area	40.795850	-123.480727
Metal Shop for Processing	40.796656	-123.481721
Future Pond	40.794346	-123.475431

The Trinity Sungrown farm is a historic ranch that is subject to the Williamson Act. Also known as the California Land Conservation Act of 1965, this Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value (http://www.conservation.ca.gov/dlrp/ca)). The farm is currently licensed to cultivate up to 10,000 square feet of cannabis canopy and is applying for a Type 3 Medium Outdoor license to cultivate up to 1 acre of cannabis canopy. The parcel consists of 210 acres that is surrounded by USFS on the west, south, and east sides, and three private parcels to the north. Access to the parcel is via a private road.

The property owner/cultivator has been enrolled under the North Coast Regional Water Quality Control Board (NCRWQCB) Discharge Waiver since 2016 and is working on improvements to the property as outlined in the Water Resource Protection Plan. There is a Lake and Streambed Alteration Agreement (LSAA) in place between the owner and the California Department of Fish and Wildlife (CDFW). The Trinity Sungrown farm has pre-1914 water rights. There are two points of diversion on the property. Two ponds exist for storage and a third pond is proposed. There are approximately 300,000 gallons of water storage capacity in the ponds and 5,000 gallons in plastic water tanks. Water conservation methods include planting directly into the ground, keeping the plants small, covering the greenhouses with shade cloth, applying mulch on the soil surface, and irrigating with drip irrigation.

Power is supplied by PG&E. Roads on the property are maintained regularly. The roads not associated with the cultivation sites are minimally used in order to avoid degradation. This is not a hazardous materials site.

Trinity Sungrown houses its immature plants on site. There are currently 10,000 square feet dedicated to mature plant canopy and 10,000 square feet dedicated to immature plants. Light deprivation will be used to grow the mature plants, to allow for multiple harvests. The cannabis is planted directly in the ground. There is one area for composting cannabis waste. Processing will take place in the metal shop adjacent to the cultivation area.

There is one neighboring parcel (Trinity APN 008-210-40-00) located within the 500-foot minimum setback required by Trinity County Ordinance 315-823. The property owner is supportive of Trinity Sungrown obtaining a Type 3 Medium Outdoor cultivation license.

If the Type 3 license is granted, there will be four employees. All employees will live locally, but not on the property. Temporary employees from Emerald Employment will be utilized when needed. There are four areas that will be used as part of this project, as described below.

1. **Current Garden Location**

There are eight permitted greenhouses (20' x 74') that are used to grow mature plants. Vegetative plants are housed just to the north in hoop house structures. The plants are accessed from the sides of these structures, not from within.

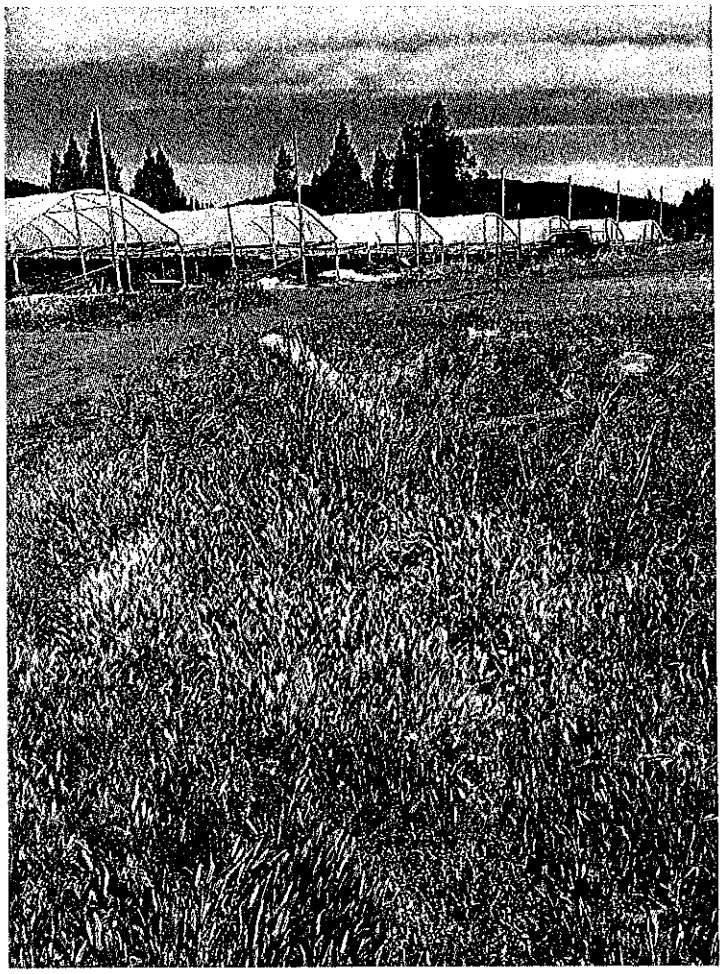


Figure 2: Current 10,000 ft² Project Area

2. **Proposed Expansion of Mature Canopy Area**

A flat area to the east of the current garden is the proposed location for the Type 3 expansion; the flat has already been constructed. Plants will be grown directly in the ground. Trinity County does not have a grading ordinance. This parcel is zoned Agricultural Preserve. A Storm Water Pollution Prevention Plan is not needed because the State Water Resources Control Board granted an exemption, in this case due to the zoning and purpose of development.

Figure 3: Proposed Expansion Area

3. **Metal Shop for Processing**

There is a 30' x 60' metal shop on site that is used for processing. Cultivation-related supplies are also stored in the shop.

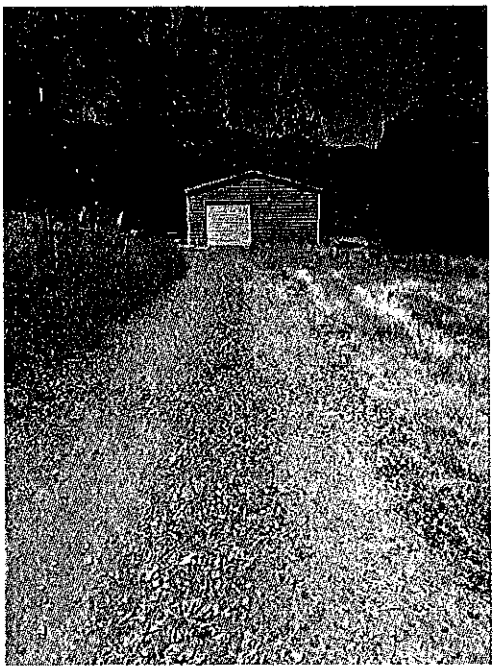


Figure 4: Metal Shop

4. **Proposed Pond**

An undeveloped meadow is the proposed site for an off-stream irrigation water storage pond. The pond will be designed to hold more than an entire growing season's irrigation water supply.

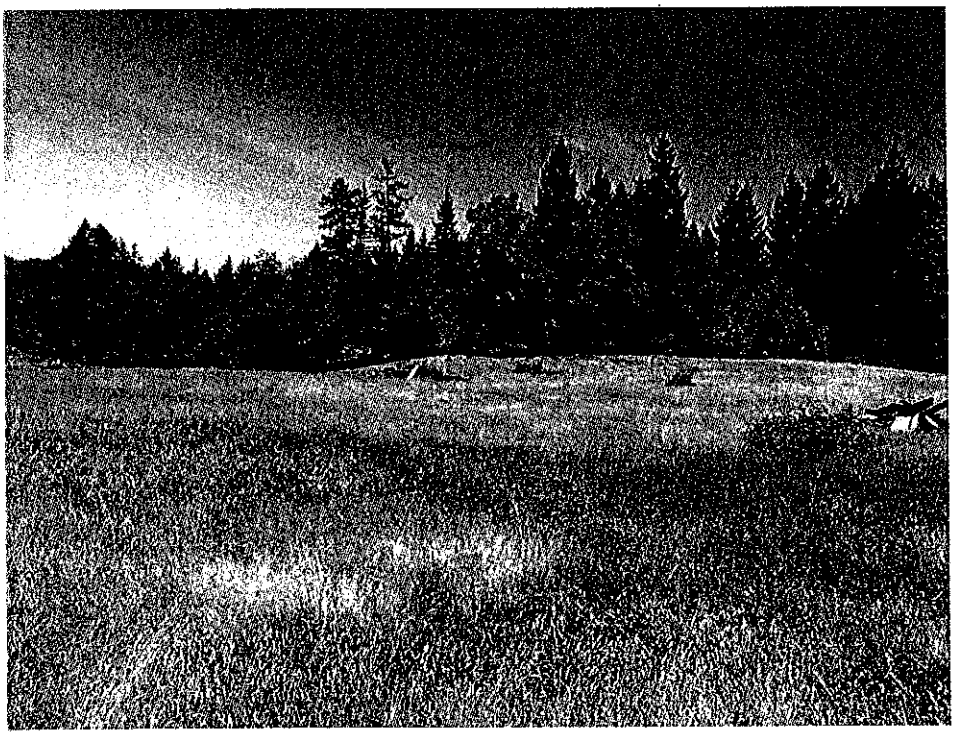


Figure 5: Proposed Pond Site

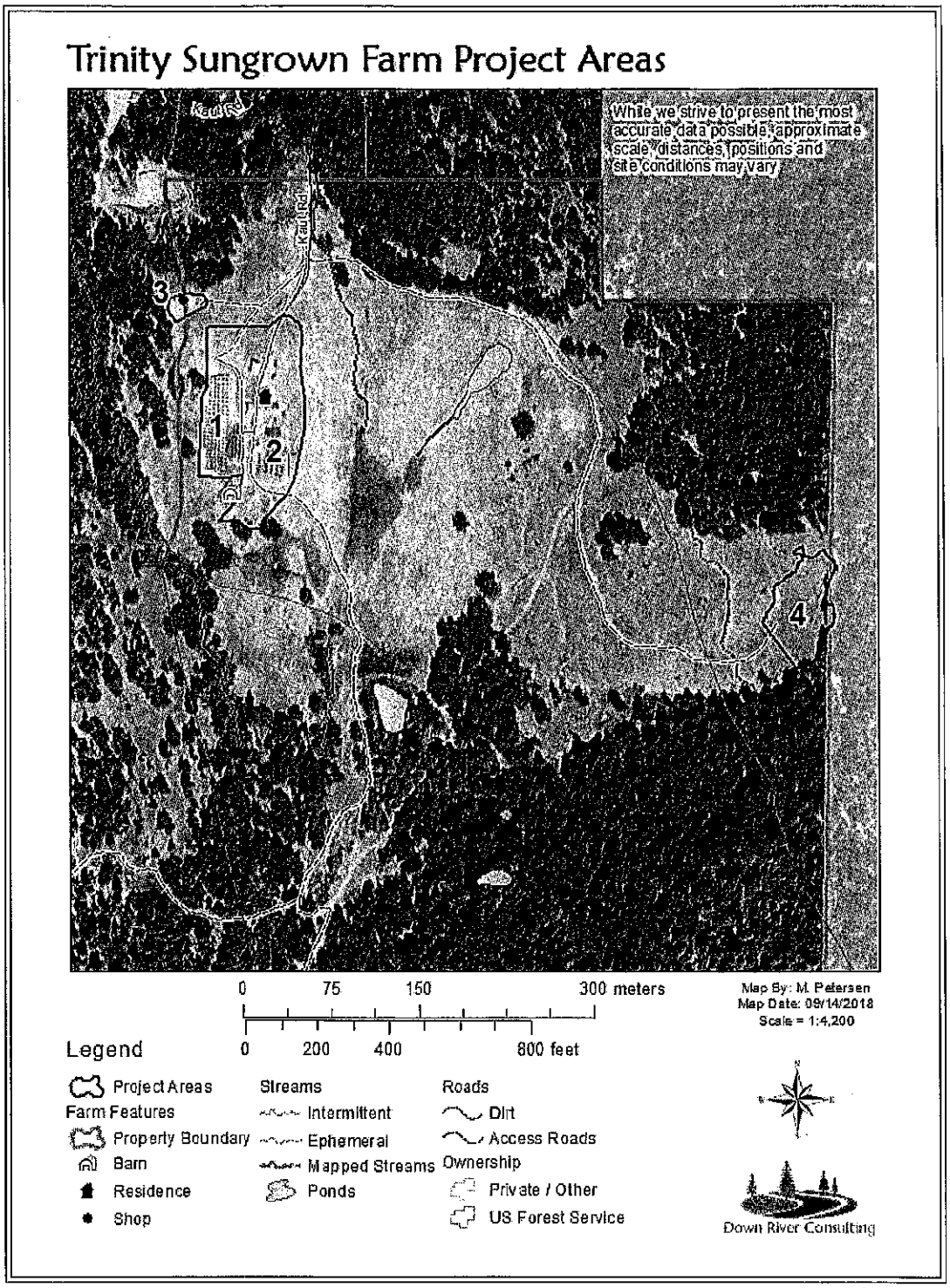


Figure 6: Trinity Sungrown Project Detail Map

Regulatory Setting

Federal Regulations

Endangered Species Act

The (federal) Endangered Species Act (ESA) was passed in 1973. ESA provides a framework to list plant and animal species as threatened or endangered. The law makes it a crime to take (kill) threatened or endangered species. It also focuses on protection and recovery. There are a number of strategies that can help achieve these conservation goals including safe harbor agreements, habitat conservation plans, candidate conservation agreements, and conservation banks. The northern spotted owl, steelhead trout, and Coho salmon are found in Trinity County; they are all listed as threatened. Farming practices in this area should focus on conservation of the habitat and the environmental conditions needed for recovery of these species. (US Fish and Wildlife Service, 1973)

State Regulations

California Environmental Quality Act

The California Environmental Quality Act (CEQA), is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, when feasible.

CEQA applies to certain activities and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project". A "project" is an activity undertaken by a public agency or a private activity that must receive discretionary approval, meaning that the agency has the authority to deny or approve the requested permit from a government agency that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment.

(California Natural Resources Agency, 2014)

California Endangered Species Act

The California Endangered Species Act (CESA) was adopted in 1970. CESA defines the terms used to describe threatened, endangered, and sensitive (TES) species, and makes it a crime to take (kill) them. In addition, it provides incentives for conservation of TES species and a

framework for landscape-scale promotion of unfragmented habitat corridors. If a project will result in the take of a TES animal(s) and/or plant(s), an exception can be made only if an incidental take permit is issued and mitigation efforts reduce the overall project impact to less than significant. Trinity County is within the southern extent of the Klamath Range and provides habitat to a high density of TES flora and fauna, many of which have a very limited range (endemic). (Habitat Conservation Planning Branch, 2018)

Noxious Weed Management

California Food and Agriculture Code Article 1.7 Section 7270-7276 defines the impacts of noxious weeds on wildlands and agricultural lands. It establishes the authority of the Department of Food and Agriculture in noxious weed funding to be distributed to Weed Management Associations and establishes guidelines for Weed Management Association membership. Important definitions are included in the regulations such as "integrated pest management".

(CDFA Article 1.7 §7270-7276)

Pesticides are Toxic to Bees

California Food and Agriculture Code Article 3 Section 6650 defines the impacts of pesticides on bees. It defines the diurnal time period and temperature conditions when bees are considered to be resting. It also defines residual toxicity conditions for pesticides.

(FAC 3 CCR § 6650)

California Forest Practices Act

The Forest Practices Act regulates timber operations in California and provides protective measures for watercourses, late-successional forests, wildlife habitat, sensitive watersheds, archeological sites, sensitive soils, and forest yield sustainability. It also provides rules for timber harvest plans and authority for enforcement. This law is meant to ensure that the land can support multifaceted anthropogenic uses, while providing timber resources and meeting the needs of flora and fauna.

(CDF 14 CCR § 939.1)

Lake and Streambed Alteration Agreement CDFW Code Section 1602

In order to receive an annual California state cannabis cultivation license, each applicant must provide either a finalized Agreement with the Department of Fish and Wildlife or written verification that an agreement is not required.

The California Fish and Wildlife Code Section 1602 went into effect on January 1, 2004. Section 1602 makes it illegal for an individual or entity to substantially modify the bed, bank, or channel of a hydrologically connected lake, stream, or river, unless the California Department of Fish and Wildlife (CDFW) has either been notified or has determined that the property does not contain jurisdictional features. A framework for timelines and legal responsibilities for each party are set up in the text of this regulation. In order to receive an annual California state cannabis cultivation license, each farm must either have a signed final agreement with CDFW or demonstrate that they do not need one. Jurisdictional features include road crossings of surface water, surface water diversions, and modification(s) of riparian vegetation (State of California, Fish and Game Code Section 1602, 2017).

Nesting and Migratory Bird Rule code 3503

The Nesting and Migratory Bird Rule was adopted in 1957. Fish and Wildlife Code Section 3503 makes it a crime to destroy, take, or possess the nest or eggs of any bird. This includes activities that could cause nest abandonment or mortality of young. Cannabis cultivators who have received a final agreement with CDFW under the general agreement program are required to have nest and den surveys completed by a qualified biologist within seven days prior to starting any activity covered under the agreement. In the event that a nest or den is found, the biologist will need to recommend mitigations to reduce the project impacts to less than significant.

(State of California, Fish and Game Code 3503, 1957)

Medicinal and Adult Use Cannabis Regulation and Safety Act California Senate Bill No. 94

The Medicinal and Adult Use Cannabis Regulation and Safety Act (MAUCRSA) was adopted in June of 2017. MAUCRSA creates the general framework for the regulation of commercial medical and adult use cannabis in California. Until July 1, 2019, the bill exempts from the California Environmental Quality Act the adoption of a specified ordinance, rule, or regulation by a local jurisdiction that requires discretionary review and approval of permits, licenses, or other authorizations to engage in commercial cannabis activity.

(State of California, 2017)

NCRWQCB Discharge Waiver

The California Regional Water Quality Control Board North Coast Region adopted Order No. 2015-0023 in August of 2015. The Order is entitled *Waiver of Waste Discharge Requirements and General Water Quality Certification for Discharge of Waste Resulting from Cannabis*

Cultivation and Associated Activities or Operations with Similar Environmental Effects in the North Coast Region. The purpose of this Order was to provide a water quality structure to prevent and/or address poor water quality conditions and the adverse impacts to water resources associated with cannabis cultivation on private land.

(California North Coast Regional Water Quality Control Board, 2015)

State Water Resources Control Board Cannabis Cultivation Policy

In October 2017, the SWRCB adopted its *Cannabis Cultivation Policy: Principles and Guidelines for Cannabis Cultivation.* The Policy created a Waste Discharge Regulatory program for cannabis cultivators and supersedes all regional orders for cannabis discharge waivers. The Policy applies to the entire state and enrollment is required for anyone cultivating cannabis in an area of 1,000 square feet or greater. Enrollment fees are tiered depending on the total disturbed area, proximity to waterways, and the slope of the property. Best practical treatment or control (BTPCs) measures are established to ensure protection of waterways. They address road maintenance, erosion control, refuse and human waste, irrigation runoff, stream and wetland buffers, petroleum products, pesticide use, etc.

(State Water Resource Control Board, 2017)

Local Regulations

Trinity County Ordinance 315-823

The Trinity County Board of Supervisors adopted Urgency Ordinance No. 315-816 to create Commercial Marijuana Cultivation Regulations in October of 2016. A permanent ordinance (no. 315-823) was adopted in October of 2017. The ordinance states that Trinity County is exempt from the California Environmental Quality Act (CEQA) until July of 2019, pursuant to the Business and Professions Code, section 26055(h).

The ordinance allows select cultivators to apply for a license to cultivate up to 1 acre of cannabis canopy (Type 3, Medium). To qualify for a Type 3 license, the applicant must have been enrolled with the North Coast Regional Water Board in 2016, held a 2016-2017 and 2017-2018 Trinity County Cultivation License, and the licensed property must be at least 50 acres in size.

(Trinity County, 2016)

(Trinity County, 2017)

Regulatory Bibliography

California Code of Regulations, t. 1. (2018). *General Lake and Streambed Alteration Agreement for Activities Related to Cannabis Cultivation.* Retrieved from California Department of Fish and Wildlife: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=155627&inline

California Food and Agriculture. (2005). Noxious Weeds Management. Article 1.7. Sections 7270-7276. https://law.justia.com/codes/california/2005/fac/7270-7276.html

California Forest Practices Act. The California Department of Forestry and Fire Protection Resource Management, Forest Practice Program. California Forest Practice Rules 2017. Sacramento. http://calfire.ca.gov/resource_mgt/downloads/2017%20Forest%20Practice%20Rules%20and%20Act.pdf

California Natural Resources Agency. (2014). *resources.ca.gov/ceqa/more/faq.html.* Retrieved from California Natural Resources Agency - FAQ: http://resources.ca.gov/ceqa/more/faq.html

California North Coast Regional Water Quality Control Board. (2015, August). Order 2015-0023 Waiver of Waste Discharge. California: State of California.

Habitat Conservation Planning Branch. (2018). *CESA to Federal Endangered Species Act.* Retrieved from California Department of Fish and Wildlife: https://www.wildlife.ca.gov/Conservation/CESA/FESA

State of California. (2017, June 27). *California Senate Bill No. 94.* California: California State Legislature.

State of California. (2017, June 27). *Fish and Game Code Section 1602.* Retrieved from California Legislative Information: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC&sectionNum=1602.

State of California. (1957). *Fish and Game Code 3503.* Retrieved from California Legislative Information: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC&sectionNum=3503.

State Water Resource Control Board. (2017, October 17). Cannabis Cultivation Policy: Principles and Guidelines for Cannabis Cultivation. California.

Trinity County. (2016, October). *Urgency Ordinance No. 315-816.* Trinity County.

US Fish and Wildlife Service. (1973). *Endangered Species Act of 1973.* Retrieved from International Affairs: https://www.fws.gov/international/pdf/esa.pdf

Environmental Setting

The property is located on the south side of Ironside Mountain, on a backslope of Hennessy Ridge and Underwood Mountain. Surface hydrology at the property reflects a shallow water table recharged along the Hennessy Ridge uplands. The property sits on a swale in the hillside that intersects the water table, allowing for several springs and intermittent streams to exist on the property. Soils at this site are a well-drained gravelly loam. Soils here are the resultant residuum weathered from serpentinite parent material. Geologically, the property is located on non-marine argillite and chert with localized units of serpentinite. To the north, the property is close to highlands of diorite and quartz diorite that have minor areas of metamorphism, which account for some schist and gneissic formations. These soils have a hydrological class of C. This property receives an annual average of 47 to 49 precipitation inches, with most of it falling in the winter and spring months.

USDA Forest Service spatial data shows that ultramafic soils may exist throughout the property. The ultramafic soils, derived from weathered serpentinite, provide habitat for many CNPS listed plants. Serpentinite is present, on the soil surface, near the metal shop. The shop is already in place and there is not expected to be any new ground-breaking disturbance in this area.

There are extensive meadows on site with gentle undulating topography, surrounded by stands of Klamath mixed conifer on north facing slopes. A majority of the 210 acres is forested. Aerial imagery shows that there are two small ponds within the meadows. An unnamed perennial tributary to the Trinity River flows from south to north through the property. Several other ephemeral streams flow through the property. The diversity of habitat types, coupled with the perennial water sources, likely provides habitat for many different faunas. The property is surrounded on three sides by late successional reserve forest lands. The forested areas on the property are not part of the project and were not surveyed. They are expected to provide habitat for many old growth-dependent species.

Methodology

The literary review and initial survey took place in late May and early June of 2018.

For the purposes of this evaluation, 'special-status plant species' include vascular plants that are:

- Designated as Species of Greatest Conservation Concern by the California Department of Fish and Wildlife (CDFW, formerly known as California Department of Fish and Game [CDFG]), or the U.S. Fish and Wildlife Service (USFWS), or are listed as threatened or endangered under the California Endangered Species Act (CESA) or the federal Endangered Species Act (ESA); and
- vascular plants and non-vascular plants on the California Native Plant Society (CNPS) Lists 1, 2, 3, or 4; and
- although special status non-vascular plants were not surveyed, a list of previously recorded occurrences of these plants are listed in Table 1.

For the purposes of this evaluation, 'special-status animal species' include animals that are:

- Designated as Species of Greatest Conservation Concern by the California Department of Fish and Wildlife (CDFW, formerly known as California Department of Fish and Game [CDFG]), or the U.S. Fish and Wildlife Service (USFWS), or are listed as threatened or endangered under the California Endangered Species Act (CESA) or the federal Endangered Species Act (ESA); and
- animals on the CNDDB Species of Greatest Conservation Concern, Special Animals List; and
- animals that occur within Trinity County and are ranked as G1 or G2 but have not yet been ranked in the State of California; and
- animals with population dynamics that fit the criteria of S1, S2, or S3 and have not yet been ranked in the state of California or globally.

The biological resources that were reviewed prior to the field survey were the:

1. CNDDB May 2018 dataset
2. FS TES, Wildlife, serpentine, and limestone Data (USDA Forest Service, 2018)
3. USGS Geology Spatial Data
4. NRCS Soil Survey
5. NSO nest data created for the Trinity County Land Assessment Project (Combined USFS and CNDDB nest data) (Sheen, 2018)
6. USFWS Ray Davis NSO Habitat Suitability Data (United States Fish and Wildlife Service, 2011-2012)
7. NMFS Data KMZ and Spreadsheet (National Marine Fisheries Service, 2016)
8. CalFlora What Grows Here 3 (CalFlora, 2018)
9. CalFlora CNPS (CalFlora, 2018)
10. Jepson Manual 2nd Edition (Baldwin, 2012)

11. California Herps (Nafis, A Guide to the Amphibians and Reptiles of California, 2000-2016)

A nine quad search was performed to determine which TES species may occur within the study area. Using the 'select by location' tool, all CNDDB and USFS TES observation data was selected within the following USGS 7.5 quadrangles: Hayfork, Big Bar, Hayfork Bally, Junction City, Halfway Ridge, Hayfork Summit, Naufus Creek, Dubakella Mountain, and Wildwood. The selected attribute table data was exported using the 'summary' tool. The resultant tabular data was converted to an excel file for use throughout the study. The likelihood and/or presence of each species occurring within the project location(s) was analyzed using the following criteria:

- Not Suitable: The project area and vicinity are obviously unsuitable for the target species.
- Unlikely: Most of the habitat conditions are not found on or adjacent to the project, or this site is outside of the known range. Most of the area is not suitable to provide habitat. The species is unlikely to be observed on site.
- Moderately Suitable: Some of the known habitat conditions are found on or adjacent to the project areas. The species is moderately likely to be found using the site.
- Very Suitable: All known habitat conditions exist on or adjacent to the site. The species is highly likely to be found using the site.
- Observed on Site: The species was observed during a survey or there is a known occurrence onsite.

Element Ranking

The global (G-rank) and state (S-rank) ranks reflect the overall status of an element (species, subspecies, variety, or natural community) throughout its global or state range. Both global and state ranks represent a letter and number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two.

- G1/ S1 = Critically Imperiled- At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2/S2 = Imperiled- At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3/S3 = Vulnerable-Vulnerable to extinction because of declines, restricted range, relatively few documented populations, or other issues that contribute to vulnerability.
- G4/S4 =Apparently Secure- Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5/S5 = Secure- Common; widespread and abundant.

Uncertainty about the rank of an element is expressed in two major ways:

- By expressing the ranks as a range of values: S2S3 means the rank is somewhere between S2 and S3.
- By adding a "?" to the rank: S2? represents more certainty than S2S3 but less certainty than S2.

Other symbols include:

- Q = There are taxonomic questions associated with the rarity level.
- T = Rank applies to a subspecies or variety.

California Department of Fish and Wildlife Listing Codes:

- FP- Fully Protected: Species protected under §§3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code.
- WL- Watch List: Taxa that don't meet SSC criteria but about which there is concern and additional information is needed to clarify status.
- CSSC- California Species of Special Concern.

California Native Plant Society (CNPS) Designation Codes:

- List 1- Plants of highest priority.
- List 1A- Plants presumed extinct in CA.
- List 1B- Plants rare and endangered in CA and elsewhere.
- List 2A- Plants presumed extirpated in CA but common elsewhere.
- List 2B- Plants rare, threatened or endangered in CA but common elsewhere.
- List 3- Plants for which additional data are needed – Review List.
- List 4- Plants of limited distribution – Watch List.

CNPS Threat Code Extensions:

- .1- Seriously endangered in CA
- .2- Fairly endangered in CA
- .3- Not very endangered in CA

(California Department of Fish and Wildlife, 2018)

Family Name	Scientific Name	Common Name	Habitat Description	Habitat Suitability/	Ranking		
Apiaceae	*Sanicula tracyi*	Tracy's sanicle	Openings in conifer forest, woodland; cismontane woodland. Elevation range 130 – 5,085 ft (40 – 1,770 m)	Moderately Suitable	G4	S4	4.2
Brassicaceae	*Streptanthus oblanceolatus*	Trinity River jewel flower	Cliffs, canyon walls, in conifer forests. Expected elevation range may be up to 1,312 ft (400 m)	Not Suitable	G1	S1	1B.2
Crassulaceae	*Sedum laxum ssp. flavidum*	pale yellow stonecrop	Serpentinite or volcanic, broad leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest, Six Rivers National Forest. Elevation range 2,624 – 6,561 ft (800 – 2,000 m)	Marginally Suitable/Unlikely	G5T4Q	S4	4.3
Dicranaceae	*Campylopodiella stenocarpa*	flagella-like atractylocarpus	Cismontane woodland. Elevation range 382 – 1,640 ft (100 - 500 m)	Marginally Suitable/Unlikely	G5	S1?	2B.2
Fabaceae	*Hosackia yollabolliensis*	Yolla Bolly bird's-foot trefoil	Dry, barren, exposed slopes, often gravelly. Concave (ridgetop) openings in red fir dominated stands where snowmelt lingers. Elevation range 6,890 – 7,217 ft (2,100 -2,200 m)	Not Suitable	G2	S2	1B.2
Fabaceae	*Lupinus elmeri*	South Fork Mountain lupine	Open areas in lower montane coniferous forests. Only known occurrences are on South Fork and	Not Suitable	G2	S2	1B.2

			Pelletreau Ridges. Elevation range 3,996 – 6,560 ft (1,218 – 2,000 m)				
Juncaceae	*Juncus regelii*	Regel's rush	Montane meadows, mesic, seeps, and upper montane coniferous forest. Elevation range 2,620 – 6,235 ft (800 – 1,900 m)	Not Suitable	G4	S1	2B.3
Liliaceae	*Erythronium oregonum*	giant fawn lily	Openings in woodland, cismontane woodland, meadows, and seeps. Elevation range 328 – 3,772 ft (100 – 1,150 m)	Very suitable	G4G5	S2	2B.2
Malvaceae	*Iliamna latibracteata*	California globe mallow	Burned areas, chaparral (montane), lower montane coniferous forest, North Coast coniferous forest (mesic), and riparian scrub (streambanks). Elevation range 1,640 – 6,565 ft (500 – 2,000 m)	Marginally Suitable/Unlikely	G2G3	S2	1B.2
Mielichhoferiaceae	*Mielichhoferia elongata*	elongate copper moss	Metamorphic rock, usually acidic, usually vernally mesic, often roadsides, sometimes carbonate. Broad leafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, seeps, subalpine coniferous forest. Elevation range 300	Moderately Suitable	G5	S4	4.3

			– 3,280 ft (90 - 1,000 m)				
Montiaceae	*Lewisia cotyledon ssp. heckneri*	Heckner's lewisia	Rocky, lower montane coniferous forests. Elevation range 738 - 6,890 ft (225 – 2,100 m)	Not Suitable	G4T3	S3	1B.2
Montiaceae	*Montia howellii*	Howell's montia	Vernally mesic, sometimes roadsides, meadows, seeps, North Coast coniferous forest, and vernal pools. Elevation range < 1,300 ft (<400 m)	Marginally Suitable/Unlikely	G3G4	S2	2B.2
Onagraceae	*Epilobium oreganum*	Oregon fireweed	Bogs, small streams, lower montane coniferous forest, meadows, seeps, and upper montane coniferous forest. Affinity to ultramafic soils. Elevation range 1,804 - 5905 ft (550 – 1,800 m)	Very suitable	G2	S2	1B.2
Ophioglossaceae	*Botrypus virginianus*	rattlesnake fern	Moist shaded valleys along small streams, bogs and fen, lower montane coniferous forest (mesic), riparian forests, meadows, seeps. Elevation range 2,295 – 3,940 ft (700 -1,065 m)	Very suitable	G5	S2	2B.2
Orchidaceae	*Piperia candida*	white-flowered rein orchid	Open to shady sites, conifer and mixed evergreen forest, sometimes serpentinite. Elevations below 4,920 ft (1,500 m)	Very suitable	G3	S3	1B.2
Orobanchaceae	*Kopsiopsis hookeri*	small groundcone	Open woodland, mixed conifer forest, generally on *Gaultheria shallon*, occasionally on	Moderately Suitable	G4?	S1S2	2B.3

			Arbutus menziesii, Arctostaphylos uva-ursi. Elevations <2,295 ft (700 m)				
Phrymaceae	*Erythranthe trinitiensis*	pink-margined monkeyflower	Serpentinite, often roadsides, cismontane woodland, lower montane coniferous forest, meadows, seeps, and upper montane coniferous forest. Elevation range 4,850 – 5,577 ft (1,480 – 1,700 m)	Moderately Suitable	G3	S3	1B.3
Ptilidiaceae	*Ptilidium californicum*	Pacific fuzzwort	Epiphytic on trees, decaying logs and stumps, rarely on humus over boulders, lower and upper montane coniferous forests. Elevation range 3,740 – 5,905 ft (1,140 – 1,800 m)	Marginally Suitable/Unlikely	G4G5	S3S4	4.3

Table 2: Nine Quadrangle Threatened, Endangered & Sensitive Plant Occurrences

Family	Scientific Name	Common Name	Habitat Description	Likelihood of Occurrence	Likelihood of Occurrence Justification
Accipitridae	*Accipiter gentilis*	northern goshawk	Coniferous forests with high DBH trees and low sloping hillsides. They prefer to hunt on or near low traffic or decommissioned unpaved roads that run through forests.	Very Suitable	Forest access roads veining through the property with high DBH coniferous forest.
Accipitridae	*Haliaeetus leucocephalus*	bald eagle	Near lakes, reservoirs, rivers, marshes, and coasts. Can be found near fish processing plants.	Moderately Suitable	Several streams on the property are shaded by riparian hardwoods on the property.
Ardeidae	*Ardea herodias*	great blue heron	Saline and fresh emergent wetlands. Less often found along river shores and rocky beaches, mountains pastures and croplands. Nests in (the tallest) live or dead trees, less often in shrubs, tule mats, sea cliffs, or rock ledges. Human disturbance causes nest abandonment.	Marginally Suitable/Unlikely	Ideal habitat does not exist on the property but does exist nearby on the Trinity River.
Ascaphidae	*Ascaphus truei*	Pacific tailed frog	Cold, clear, permanent rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for protective cover for adults, eggs, and larvae.	Moderately Suitable	High velocity flowing stream on the property with a rocky bed.
Emydidae	*Emys marmorata*	western pond turtle	Pond, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation, & either rocky or muddy bottoms, in woodlands, forests, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, & exposed banks are required for basking. May enter brackish water and seawater.	Observed	Observed on site
Haplotrematidae	*Ancotrema voyanum*	hooded lancetooth	Near streams or intermittent stream channels where substrate is	Moderately Suitable	Most habitat types exist

			permanently damp. Late successional conditions such as coarse woody debris, riparian hardwood trees, deep leaf mold, and a relatively closed forest canopy. Associated with limestone substrates mostly within an elevation range of 650 - 3,150 ft (198 - 960 m).		on the property; however, limestone was not detected.
Margaritiferidae	*Margaritifera falcata*	western pearlshell	Found in stable substrate with low shear stress and a gradient of low velocity in perennial creeks and rivers with clean water at depths generally of 1.5 – 5.0 ft. Often in eddies and areas with cobble and boulders that protect the animals from high flows and scour events. Requires a fish host for reproduction.	Marginally Suitable/Unlikely	Nesting trees exist and the property is near the Trinity River.
Monadeniidae	*Monadenia infumata setosa*	Trinity bristle snail	Riparian corridors and uplands or the Klamath/Trinity mixed-conifer forests that have a deciduous hardwood understory. This species is primarily found in moist but well-drained, well-shaded canyons or on streamside benches covered with a layer of leaf mold at least 4" deep. Sometimes observed in dry sites not considered typical habitat.	Very Suitable	Habitat exists on the property but not in large amounts.
Mustelidae	*Gulo gulo*	California wolverine	Alpine, tundra, taiga, and boreal forest zones, including coniferous, mixed, and deciduous woodlands, bogs, and open mountain, as well as tundra habitats with dense spring snow pack.	Not Suitable	Habitat does not exist on site.
Mustelidae	*Martes caurina humboldtensis*	Humboldt marten	Humid coastal old-growth redwood forests.	Marginally Suitable/Unlikely	Habitat does not exist on site.
Mustelidae	*Pekania pennanti*	fisher - West Coast DPS	Coniferous forests, also found in mixed and deciduous forests. High canopy closure with many hollow trees for dens. Tree species typically found in fisher habitat are spruce, fir, white cedar, and some hardwoods.	Observed	Observation occurrence
Pandionidae	*Pandion haliaetus*	osprey	Nearly any body of water: salt marshes, rivers, ponds, reservoirs, estuaries, and even coral reefs. Their conspicuous stick nests are	Moderately Suitable	The Trinity River is nearby as well as

			placed in the open on poles, channel markers, and dead trees, often over water.		several ponds
Plethodontidae	*Plethodon elongatus*	Del Norte salamander	Terrestrial, strongly associated with moist talus in humid shaded and closed-canopy coastal forests of mixed hardwoods and conifers, but also found in rock rubble of old riverbeds, and under bark and logs on forest floor, usually in rocky areas. Especially attracted to older forests.	Moderately Suitable	Habitat does not exist on site.
Polygyridae	*Vespericola pressleyi*	Big Bar hesperian	Any available cover, including decaying hardwood leaves, woody debris, and loose rocks near active streams. Active on damp moss and fallen bigleaf maple leaves around a perennial spring seep. Shaded by a dense canopy of red alder and bigleaf maple. Can be associated with springs in a relatively open stand of Douglas-fir.	Marginally Suitable/Unlikely	Only known site is adjacent to this site.
Ranidae	*Rana boylii*	foothill yellow-legged frog	Rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	Moderately Suitable	Some habitat exists on site. Rocky streams in forest but no open sunny banks present.
Rhyacotritonidae	*Rhyacotriton variegatus*	southern torrent salamander	Found in shallow, cold, clear, well-shaded streams, waterfalls, and seepages, particularly those running through talus and under rocks all year, in mature to old-growth forests. Occasionally found in riparian vegetation adjacent to water, but usually found in contact with water. Primarily in water on north-facing slopes in the southern part of their range where forests are warmer and drier. Aquatic larvae live in clear, shallow water and still, turbid water in creeks with accumulated leaves.	Very Suitable	Habitat exists on the property.
Vespertilionidae	*Corynorhinus townsendii*	Townsend's big-eared bat	Coniferous forests, mixed mesophytic forests, deserts, native prairies, riparian communities, active agricultural areas, and	Very Suitable	Habitat exists on the property.

			coastal habitat types. Distribution is strongly correlated with the availability of caves and cave-like roosting habitat, with population centers occurring in areas dominated by exposed, cavity forming rock and/or historic mining districts.		
Vespertilionidae	*Lasionycteris noctivagans*	silver-haired bat	Forested coniferous areas adjacent to lakes, ponds, and streams are the preferred roosting sites. Summer roosts and nursery sites are in tree foliage, cavities, or under loose bark, sometimes in buildings. They hibernate in small tree hollows, beneath sections of tree bark, in buildings, rock crevices, in wood piles, and on cliff faces.	Very Suitable	Habitat exists on the property.
Vespertilionidae	*Lasiurus cinereus*	hoary bat	Forests and woodlands with dense foliage and medium to large trees. Roosting Habitat: Foliage of large trees, covered from above, with lots of cover at the ground level.	Moderately Suitable	Habitat exists on the property but it might not be high enough in elevation.
Vespertilionidae	*Myotis evotis*	long-eared myotis	Roosting Habitat: Crevices, snags, spaces under bark, buildings. Night roosting usually occurs in caves. Foraging Habitat: Over water, open habitats, and among trees.	Very Suitable	Habitat exists on the property.
Vespertilionidae	*Myotis thysanodes*	fringed myotis	Roosting Habitat: Crevices, mines, caves, buildings. Maternal colonies April-September. Foraging Habitat: Over water, open habitats, and around dense vegetation.	Moderately Suitable	Some habitat exists on the site. Few rocky crevices and no mines for roosting.
Vespertilionidae	*Myotis volans*	long-legged myotis	Roosting Habitat: Crevices, snags, spaces under bark, buildings, mines, and caves. Trees are most important for day roosting. Night roosting usually occurs in caves. Foraging Habitat: Close to ground (3 - 5 m), over surface water, openings in early successional forests, woodlands, chaparral, cliffs.	Very Suitable	Habitat exists on the property.
Vespertilionidae	*Myotis yumanensis*	Yuma myotis	Roosting Habitat: Crevices, buildings, mines, and caves. Trees	Moderately Suitable	Most habitat exists on site

			are most important for day roosting. Night roosting usually occurs in caves. Foraging Habitat: Over streams and ponds, openings in forests and woodlands.		but there are no known mines or caves for roosting.

Table 3: Nine Quadrangle Threatened, Endangered & Sensitive Animals Occurrences

A reference site for Heckner's lewisia (*Lewisia cotyledon var. heckneri)* was visited on August, 9, 2018. The site is located approximately 6 miles from State Highway 299, adjacent to Hobo Gulch Road. The Heckner's lewisia was observed growing on an open rock outcrop and in crevices, on a north facing 65% slope. Found thriving at the site were 81 fruiting plants. There may have been additional plants that were not counted due to the inaccessibility of portions of the outcrop. The surrounding area supports a coniferous forest. *Dudleya spp.* and assorted bryophytes are the two co-dominant species in the immediate area.

There is one small rock outcrop adjacent to the current cultivation and the proposed canopy expansion areas. The rock outcrop has poison oak (*Toxicodendron diversilobum*) growing on it. Heckner's lewisia is not present on the outcrop.

Figures 7 & 8: Heckner's Lewisia in Fruit

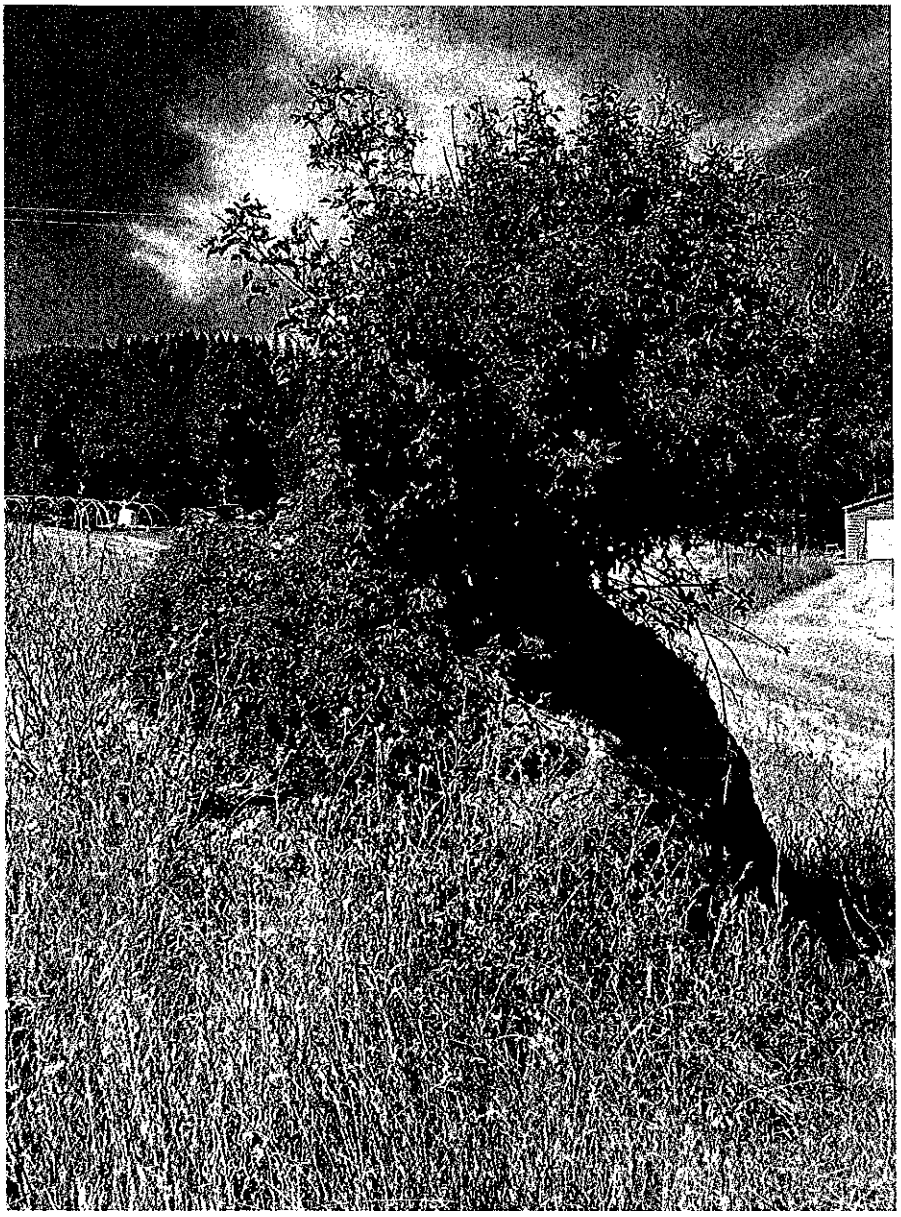
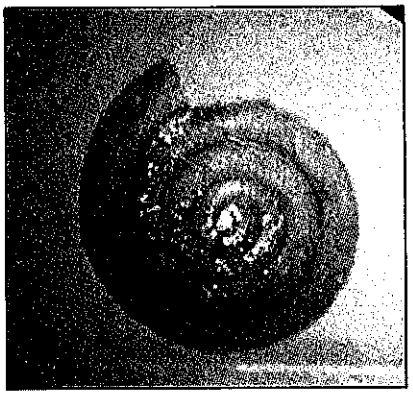


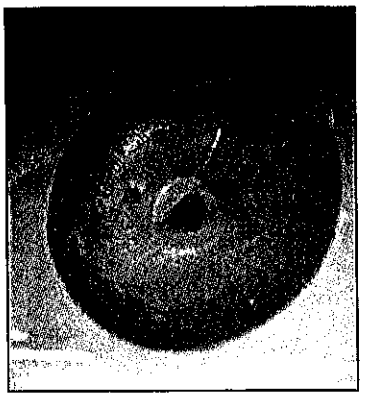
Figure 9: Poison Oak on Rock Outcrop

A reference site for Big Bar hesperian (*vespericola pressleyi*), hooded lancetooth (*Ancotrema voyanum*), and Trinity bristle snail (*Monadenia setosa*), was visited on August 9th, 2018. The site is located at -123.244049 Longitude and 40.738907 Latitude, at a distance of approximately 12.7 aerial miles from the project. The reference population was cited as being found on or near Manzanita Creek, a tributary of the Trinity River, near the confluence of the two bodies of water. An immature *Trilobopsis loricata sonomaensis* was found on the highwater bank edge on top of moss but underneath leaf litter from bigleaf maple, Oregon white oak, canyon live oak, and ferns. The species identification was confirmed by Barry Roth, PhD. He described the species as having one or more additional whorls (turns of the shell around its coiling axis), and an expanded flange around the aperture, with two or three "teeth" extending into the aperture. This species is

common in this area and there are two other unnamed species within the *Trilobopsis* genus that range from the North Coast to Junction City (CA).

The forest here is dominated by Douglas fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*), with a diverse, multilayered understory of Oregon white oak (*Quercus garryana*), pacific madrone (*Arbutus menziesii*), big leaf maple (*Acer macrophyllum*), poison oak (*Toxicodendron diversilobum*), red alder (*Alnus rubra*) and pacific yew (*Taxus brevifolia*). Although no mollusks were discovered on the property, similar habitat to the habitat found at Manzanita Creek exists on the property. Presence should be assumed for all sensitive mollusk species found in the survey area of Manzanita Creek.





Figures 10 & 11: Juvenile *Trilobopsis* Shell

During the field surveys, the vegetation communities were defined using the alliances from *A Manual of California Vegetation*, 2nd Edition (Sawyer, 2009). The botanical survey areas were defined using a combination of the EVT vegetation map, aerial imagery, and field reconnaissance. The biological data was collected by performing a visual encounter survey. Herbarium specimens were not collected during the initial study due to the urgent nature of the reports. The study was conducted by Marie Petersen, Emily Bowes, and Ashleigh Kilgore on May 3 and June 14, 2018. Approximately 33 total hours were spent in the field by the biologists.

Figure 12: Area Where Snail Specimen was Found

Figure 13: Manzanita Creek

Results

Subproject Name	Vegetation Alliance	CNDDB Rank	Acres Observed
Current Garden	Ruderal vegetation	Not Rare	1
Proposed Expansion Area	No dominant life form	Not Rare	0.4
Metal Shop (Processing)	No dominant life form	Not Rare	0.1
Proposed Pond	Undefined alliance	N/A	1
Total			2.5

Table 4: Habitat Types Observed

The 10,000 ft² project area mostly supports non-native and invasive plants. Only 4 of the 16 identified plant species growing in this area are native. Two of the invasive species (jointed goatgrass [*Aegilops cylindrica*] and Italian thistle [*Carduus pycnocephalus*]) found have a very limited known distribution in the county and are considered highest priority for treatment by the natural resource management professionals in the Trinity County Weed Management Association.

The proposed expansion area did not have established flowering plants growing on it at the time of the site visits. Furthermore, the grasses and forbs that were growing in June had been either recently mowed or had recently sprouted. Due to these conditions, it was not possible to identify plants beyond their basic type.

The metal shop area currently does not host a dominant plant community. Native plants far outnumber the non-natives, and the invasive plant population here is present in sparse patches between thick gravel. Serpentinite was observed on a cutbank near the shop, indicating that plants with an ultramafic affinity populate this area. Invasive and non-native plant management should be prioritized around the metal shop.

The proposed pond area is suspected to have historically hosted a manna grass meadow (*Glyceria elata G4 S3?*), based on the site conditions and the abundance of manna grass persisting on the landscape. While the meadow is still dominated by tall manna grass, it does not meet the alliance's membership requirements for codominant species. Currently, cheat grass

(*Bromus tectorum*) is the codominant species. Proliferation of invasive species coupled with climate change has created an undefined (alliance) vegetative community.

Vascular Plants

A total of 13 grasses, 28 forbs, 4 shrubs, and 7 trees were identified during the cursory assessment. One CNPS listed species, the Salmon Mountains wakerobin (*Trillium ovatum ssp. oettingeri*), was found during a property tour. It is not in the CUP project area. All habitat descriptions are from a combination of information from the Jepson Manual (Baldwin, 2012) and the CNPS Inventory of Rare and Endangered Plants website (California Native Plant Society, 2018).

Tracy's sanicle (*Sanicula tracyi*) is a perennial herb in the *Apiaceae* family. It is listed as G4/S4 4.2. The bloom period is from April to July. The typical habitat for this species is openings in conifer forest, woodland, and cismontane woodland. Its bioregional distribution includes the Klamath Ranges. It is found at elevations generally between 328 and 5,200 ft (100 - 1,585 m). This habitat type was observed in the project area. During the study, Tracy's sanicle was not found in the project areas.

Trinity River jewelflower (*Streptanthus oblanceolatus*) is a perennial herb in the *Brassicaceae* family. It is listed as G4T5G3 S3 1B.3. The bloom period is from April to June. The typical habitat for this species is cliffs, canyon walls, and in conifer forests. Its bioregional distribution includes the Klamath Ranges. It is found at elevations between 66 and 1,378 ft (20 - 420 m). There were no cliffs or canyon walls observed in the project area. During the study, Trinity River jewelflower was not found in the project areas.

Pale yellow stonecrop (*Sedum laxum ssp. flavidum*) is a perennial herb in the *Crassulaceae* family. It is listed as G5T4Q S4 4.3. The bloom period is from May to July. The typical habitat for this species is serpentinite or volcanic rocky outcrops, broad leafed upland forests, chaparral, cismontane woodland, lower montane coniferous forests, and upper montane coniferous forests. Its bioregional distribution includes the Klamath Ranges and the High North Coast Ranges. It is found at elevations generally between 1,493 - 6,562 ft (455 – 2,000 m). Rocky outcrops were not observed in the project areas. During the study, pale-yellow stonecrop was not found in the project areas.

Flagella-like atractylocarpus (*Campylopodiella stenocarpa*) is a liverwort in the *Dicranaceae* family. It is listed as G5S1 2B.2. The bloom period is N/A. The typical habitat for this species is cismontane woodland. It is found at elevation ranges between 328 and 1,640 ft (100 - 500 m). The project areas are located at a higher elevation than that of the known elevation ranges for this species. During the study, flagella-like atractylocarpus was not found in the study areas.

Yolla Bolly Mountains birds-foot trefoil (*Hosackia yollabolliensis*) is a perennial herb in the *Fabaceae* family. It is listed as G2 S2 1B.2. The bloom period is from June to

August. The typical habitat for this species is described as dry barren exposed slopes that are often gravelly, meadows and seeps, and upper montane coniferous forests (in the openings). All populations observed by Down River Consulting staff have been on ridgetop depressions where snowmelt lingers in openings in red fir forests. Pussy paws *(Calyptridium umbellatum)* are the codominant species in the depressions. Its bioregional distribution includes the High North Coast Ranges. It is found at elevations generally between 5,397 and 7,005 ft (1,645 – 2,135 m). This habitat type was not observed in the project area. During the study, Yolla Bolly Mountains birds-foot trefoil was not found in the study areas.

South Fork Mountain lupine (*Lupinus elmeri*) is a perennial herb in the *Fabaceae family*. It is listed as G2/S2 1B.2. The bloom period is from June to July/August. The typical habitat for this species is open areas in conifer forest. Its bioregional distribution includes the High North Coast Ranges. It is found at elevations generally between 3,996 and 6,565 ft (1,218 – 2,000 m). All known occurrences are located on South Fork Mountain and Pelletreau Ridges. Red fir (*Abies magnifica*) generally dominates these sites. This habitat type was not observed in the project area. During the study, South Fork Mountain lupine was not found in the study areas.

Regel's rush (*Juncus regelii*) is a perennial rhizomatous herb in the *Juncaceae* family. It is listed as G4/S1 2B.3. The bloom period is in August. The typical habitat for this species is montane meadows, mesic, seeps, and upper montane coniferous forests. Its bioregional distribution includes the Klamath Ranges. It is found at elevations generally between 2,493 and 6,235 ft (760 – 1,900 m). The project area is located at a lower elevation than that of the known elevation ranges for this species. During the study, Regel's rush was not found in the study areas.

Giant fawn lily (*Erythronium oregonum*) is a perennial herb in the *Liliaceae* family. It is listed as G5 S2.2, 2B.2. The bloom period is from March to June/July. The typical habitat for this species is openings in woodland, cismontane woodland, meadows, and seeps. Habitat observations by Down River Consulting staff have always been in shaded woodlands, often with ultramafic substrates. Its bioregional distribution includes the outer North Coast Ranges. It is found at elevations generally between 328 and 3,773 ft (100 – 1,150 m). The habitat in the project areas is not shaded enough to support this species. During the study, giant fawn lily was not found in the study areas.

California wild hollyhock (*Iliamna latibracteata*) is a perennial herb in the *Malvaceae* family. It is listed as G2G3 S2 1B.2. The bloom period is from June to August. The typical habitat for this species is often in burned areas, chaparral (montane), lower montane coniferous forest, North Coast coniferous forest (mesic) and riparian scrub (streambanks). This elusive plant is very sensitive to grazing impacts and seems to be an "ice cream" plant to herbivorous mammals. Populations occur on drier, rockier sites that support chaparral communities. Its bioregional distributions include the North Coast, Klamath Ranges, and the High Cascade Ranges. It is found at elevations generally between 196 and 6,565 ft (60 – 2,000 m). This habitat type was not observed in the project area. During the study, California wild hollyhock was not found in the study area.

Elongate copper moss (*Mielichhoferia elongata*) is a bryophyte in the *Mniaceae* family. It is listed as G5 S4 4.3. The bloom period is from N/A. The typical habitat for this species is metamorphic rock, usually acidic, usually vernally mesic, often roadsides, and sometimes carbonate. It may also live in broad leafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forests, meadows and seeps, and subalpine coniferous forests. Its bioregional distributions include the Klamath Ranges, high North Coast Ranges, and outer North Coast Ranges. It is found at elevations generally between 0 and 6,430 ft (0 – 1,960 m). Many of these habitat features were observed in the project area. During the study, elongate copper moss was not found in the study areas.

Heckner's lewisia (*Lewisia cotyledon var. heckneri*) is a perennial herb in the *Montiaceae* family. It is listed as G4T3 S3 1B.2. The bloom period is from May to July. The typical habitat for this species is crevices in cliffs, rocky slopes of granite or basalt, and conifer forests. Its bioregional distribution includes the Klamath Ranges. It is found at elevations generally between 734 and 7,220 ft (223 – 2,200 m). Rocky habitat was not observed in the project area. During the study, Heckner's lewisia was not found in the study areas.

Howell's montia (*Montia howellii*) is an annual herb in the *Montiaceae* family. It is listed as G3G4 S2 2B.2. The bloom period is from March to May. The typical habitat for this species is vernally mesic, sometimes roadsides, meadows and seeps, North Coast coniferous forests, and vernal pools. Its bioregional distributions include the North Coast, Klamath Ranges, High North Coast Ranges, Inner North Coast Ranges, and Outer North Coast Ranges. It is found at elevations generally at < 1,300 ft (<400 m). The project areas are located at a higher elevation than that of the known elevation ranges for this species. During the study, Howell's montia was not found in the study areas.

Oregon fire herb (*Epilobium oreganum*) is a perennial herb in the *Onagraceae* family. It is listed as G2 S2 1B.2. The bloom period is from June to September. The typical habitat for this species is mesic. It may or may not be found in boggy areas and shaded streambanks. This plant is also found in the Klamath Ranges. This habitat type was observed in and around the project area. It is found at elevations generally between 1,640 and 7,349 ft (500 – 2,240 m). There are streambanks and boggy areas adjacent to the project areas, but not within the study areas. During the study, Oregon fire herb was not found within the study areas.

Rattlesnake fern (*Botrypus virginianus*) is a perennial herb in the *Ophioglossaceae* family. It is listed as G5/S2 2B.2. The bloom period is in June, August, and September. The typical habitat for this species is moist shaded valleys along small streams, bogs and fen, lower montane coniferous forest (mesic), riparian forests, and meadows and seeps. Its bioregional distributions include the Klamath Ranges, Cascade Range Foothills, and the High Cascade Range. It is found at elevations generally between 2,346 and 4,446 ft (715 – 1,355 m). This habitat type was observed adjacent to the project areas. During the study, rattlesnake fern was not found in the study area.

White-flowered rein orchid (*Piperia candida*) is a perennial herb in the *Orchidaceae* family. It is listed as G3 S3 1B.2. The bloom period is from March/May through September. The typical habitat for this species is open to shady sites, conifer and mixed-evergreen forest, and sometimes serpentinite. Its bioregional distribution includes the North Coast, Klamath Ranges, High North Coast Ranges, Inner North Coast Ranges, Outer North Coast Ranges, and the San Francisco Bay Area. It is found at elevations generally between 427 and 4,298 ft (30 – 1,310 m). Suitable habitat was found in the project area. During the study, white-flowered rein orchid was not found in the study area.

Small groundcone (*Kopsiopsis hookeri*) is a perennial rhizomatous herb (parasitic) in the *Orobanchaceae* family. It is listed as G4? S1S2 2B.3. The bloom period is from April to August. The typical habitat for this species is open woodland, mixed conifer forest, generally on *Gaultheria shallon*, and occasionally on *Arbutus menziesii,* and *Arctostaphylos uva-ursi.* Its bioregional distribution includes the high North Coast Ranges, inner North Coast Ranges, and outer North Coast Ranges. It is found at elevations generally between 295 and 2,904 ft (90 - 885 m). This habitat type was observed in the proposed pond and metal shop project areas. During the study, small groundcone was not found in the study areas.

Pink margined monkeyflower (*Erythranthe trinitiensis*) is an annual herb in the *Phrymaceae* family. It is listed as G3/S3 1B.3. The bloom period is from June to July/August. The typical habitat for this species is often serpentinite, roadsides, cismontane woodland, lower montane coniferous forests, meadows and seeps, and upper montane coniferous forests. Its bioregional distribution includes Trinity County, Humboldt County, and Siskiyou County. It is found at elevations generally between 1,312 and 7,497 ft (400 – 2,285 m). This habitat type was observed in the project area. During the study, pink margined monkeyflower was not found in the study areas.

Pacific fuzzwort (*Ptilidium californicum)* is a leafy liverwort in the *Ptilidiaceae* family. It is listed as 4.3. The bloom period is from May to August. This plant is an epiphyte. The typical habitat is trees, decaying logs and stumps, and rarely on humus over boulders within lower and upper montane coniferous forests. It is found at elevations generally between 3,740 and 5,906 ft (1,140 – 1,800 m). The project areas are located at a lower elevation than that of the known elevation ranges for this species. During the study, Pacific fuzzwort was not found in the study areas.

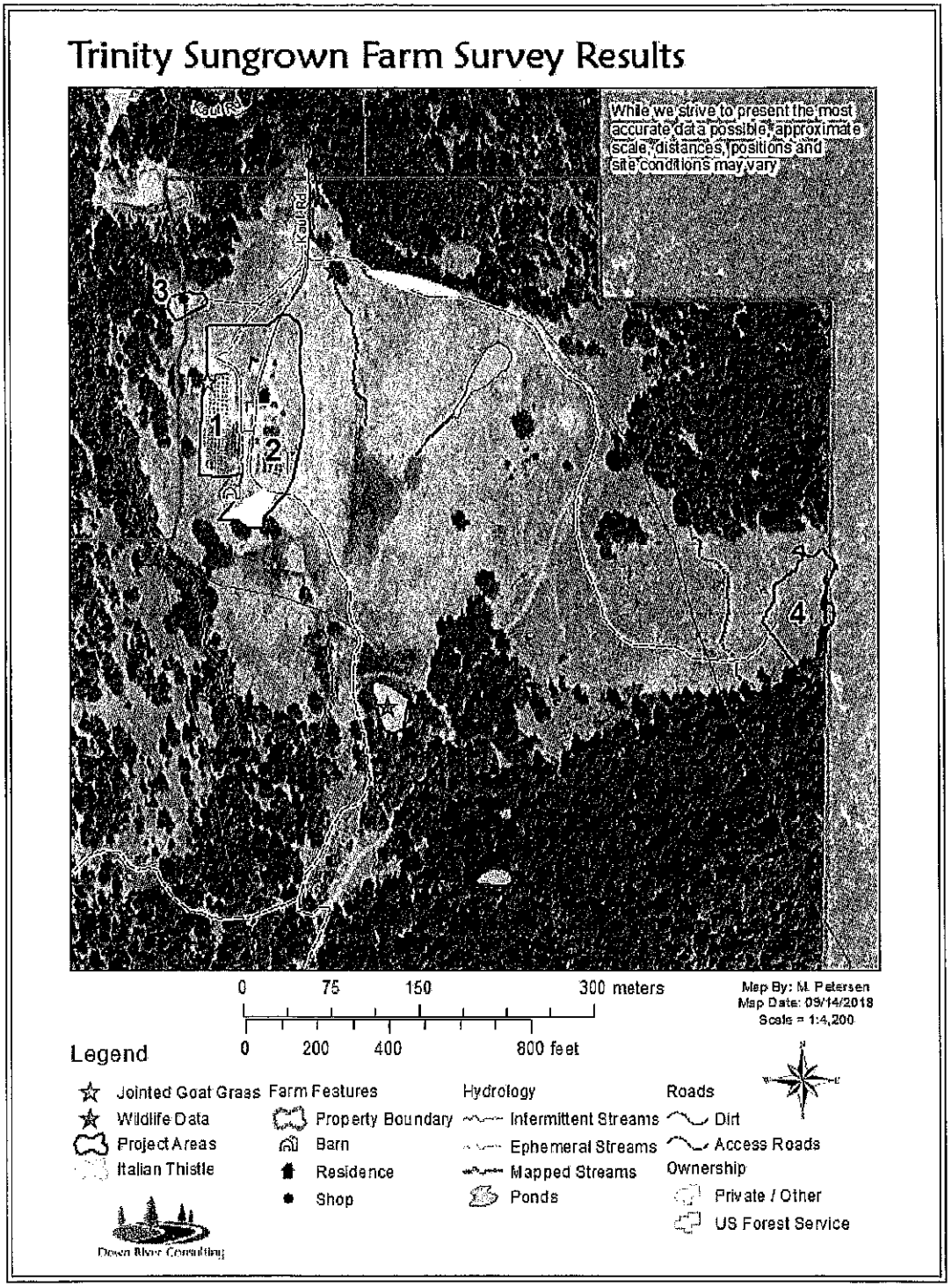


Figure 14: Survey Results Map

Invertebrates

Insects

Numerous butterflies, bees, and flies were foraging on Erodium and Chamomile, in the 10,000 ft² project location. Swallowtail butterflies were observed near the metal shop. The proposed pond area supports a plethora of pollinator species, including at least three species of bees, a bee fly (*Bombus major*), and a yucca moth (*Greya spp.*). The yucca moth was found feeding exclusively on woodland star (*Lithophragma parviflorum ssp.*) plants.

There are two ponds currently located on the property and several wetland areas that are seasonally inundated. The small southernmost one is used for water storage and the other is used exclusively for wildlife preservation. The latter houses many species of wildlife including the western pond turtle (*Emys marmorata*), which is a listed CDFW special species of concern. The property owner plans to construct a third pond to be used for water storage for cannabis cultivation. This proposed pond, along with the other existing water storage on the property, will provide all necessary water for cannabis cultivation during the upcoming diversion forbearance period.

The proposed site for the new pond is in a meadow located higher than the garden, which is ideal for gravity feeding. This meadow supports several species of flowering plants that are used for foraging by several species of insects. Specific plants providing a majority of the foraging habitat are in the genus *Rubus*. All of the species of bumble bees that were identified are listed as 'common with populations not in decline'. The European honey bee (*Apis mellifera*) is an introduced species from Europe that is found throughout the United States. It exists in high numbers in this meadow. This species can provide dangerous amounts of competition to native species of bees, especially to bumble bees (*Bumbus ssp*). If introduced, this species can spread diseases to native species and it should not be raised near native bee habitat. (Ellis, Mortensen, & Schmehl, 2017)

The California carpenter bee (*Xylocopa californica*) was seen foraging in the meadow at the peak heat of the day. This is typical of this genus, because they are able to thermoregulate, which allows them to cool themselves while flying at high speeds in high temperatures. They fly at different altitudes depending on the temperature, which allows them to thrive in a variety of environments. (Buchman, n.d.)

The red belted bumble bee (*Bumbus rufocinctus*) was also observed foraging in this meadow and can be commonly found in wooded areas, gardens, and agricultural areas.

Two female worker fuzzy-horned bumble bees (*Bumbus mixtus*) were observed foraging in the meadow. Their primary habitat is mountain meadows. This species is only located in 50% of its historical range, but appears to be increasing in population in its current range. Like most of the bumble species listed above, they sometimes or always nest in holes in the ground created by other animals, mainly ground squirrels. Ground squirrel holes provide habitat for many species of animals including, but not limited to, snakes, salamander, bees, and birds.

Figure 15: European Honey Bee (*Apis mellifera)*

Figure 16: Carpenter Bee *(Xylocopa spp.)*

Figure 17: Red Belted Bumble Bee (*Bombus rufocinctus*)

Figure 18: Fuzzy Horned Bumble Bee *(Bombus mixtus)*

Franklin's bumble bee (*Bombus franklini*) is a bumble bee in the *Apidae* family. It is listed as G1 S1. The typical habitat for this species is restricted to the Klamath Mountains of southern Oregon and northern California. They make their homes in abandoned animal burrows or in grassy tussocks, and feed on both the nectar and pollen rewards offered by the flowers of the plants they pollinate such as *Lupinus*, *Eschscholzia*, *Agastache*, *Monardella,* and *Vicia*. Plants from these genera were not observed in the project areas. Franklin's bumble bee was not found in the study area. (Koch, Strange, & Williams, 2012)

Obscure bumble bee (*Bombus caliginosus*) is a bumble bee in the *Apidae* family. It is listed as G4? S1S2. The typical habitat for this species is open grassy coastal prairies and coast range meadows. Nesting occurs underground, as well as above ground in abandoned bird nests. Food plants include *Ceanothus, Cirsium, Clarkia, Keckiella, Lathyrus, Lotus, Lupinus, Rhododendron, Rubus, Trifolium,* and *Vaccinium. Rubus* was observed in the project area. For the purposes of this document, we can assume the presence of obscure bumble bee. (Koch, Strange, & Williams, 2012)

Western bumble bee (*Bombus occidentalis*) is a bumble bee in the *Apidae* family. It is listed as G2G3 S1. The typical habitat for this species is open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows filled with a wide variety of flowering plants that bloom for the entirety of the colony's lifecycle (February to November). The western bumble bee tends to establish colonies in abandoned rodent holes, so rodent presence can be a factor in suitable habitat. *B. occidentalis* is primarily associated with plants in the *Fabaceae*, *Asteraceae*, *Rhamnaceae*, and *Rosaceae* families. Plants in the *Fabaceae*, *Asteraceae*, and *Rosaceae* families were observed in the project area. For the purposes of this document, we can assume the presence of western bumble bee. (Koch, Strange, & Williams, 2012)

Monarch butterfly (*Danatus plexippus plexippus*) is a migratory butterfly in the *Nymphalidae* family. It is listed as G4 T2T3 S2S3. Larvae of this species feed exclusively on 27 different milkweed species from the genus *Asclepias,* in the subfamily *Asclepiadoideae*. Milkweed grows in rangelands, agricultural and roadside areas, riparian, wetland, desert, prairie, meadow, open forests, and woodland habitats. To be used for breeding, stands of milkweed need to be large enough for migrating monarchs to see from the sky. Mature monarchs forage on a wide variety of plant species for nectar and primarily follow river corridors when migrating. Foraging, migrating, and nursery habitat were observed throughout the study area. For the purposes of this document, we can assume the presence of monarch butterflies.

Mollusks

This study was requested after climatic conditions were conducive for mollusks surveys. All of the project areas, except the proposed pond area, are already developed. The proposed pond area is currently a meadow. There are several large woody features in the meadow that could serve as habitat features.

Hooded lancetooth (*Ancotrema voyanum*) is an air-breathing terrestrial snail in the *Haplotrematidae* family. It is listed as G1G2 S1S2. The typical habitat for this species is near

streams or intermittent stream channels where substrate is permanently damp, including late successional conditions such as coarse woody debris, riparian hardwood trees, deep leaf mold, and a relatively closed forest canopy. This species is associated with limestone substrates, mostly within an elevation range of 650 - 3,150 ft. (Burke, Applegarth, & & Weasma, Management Recommendations for Survey and Manage Terrestrial Mollusks Version 2, 1999) Late successional conditions were not observed in the project areas; however, the property is surrounded by late seral reserve and Landfire data supports the occurrence of late successional conditions throughout the undeveloped southern portion of the property. The study was not conducted at a time when climatic conditions were contusive for terrestrial mollusk activity. In the absence of seasonally appropriate terrestrial mollusk surveys, the presence of hooded lancetooth should be assumed. (Bureau of Land Management, 2009)

Trinity bristle snail (*Monadenia infumata*) is an air-breathing terrestrial snail in the *Helminthoglyptidae* family. It is listed as G2T2 S2. The typical habitat for this species is riparian corridors and uplands and the Klamath/Trinity mixed-conifer forests with a deciduous, hardwood understory. This species is primarily found in moist but well-drained, well-shaded canyons or streamside benches covered with a layer of leaf mold at least 4 inches deep. The project sites are open and lack tree cover; they do not provide typical habitat; however, sometimes this species is observed in dry sites not considered typical habitat. This study was not conducted at a time when climatic conditions were conducive for terrestrial mollusk activity. In the absence of seasonally appropriate terrestrial mollusk surveys, the presence of Trinity bristle snail should be assumed. (Bureau of Land Management, 2009)

Trinity shoulderband (*Helminthoglypta talmadgei)* is a terrestrial air-breathing mollusk in the *Helminthoglyptidae* family. It is listed as G2 S2. The typical habitat for this species consists of rocks or limestone talus, with proximity to a stream or spring, and partial shading by a conifer forest. Although the project areas were proximal to ephemeral and intermittent streams, rock tallus and shading were largely absent. This study was not conducted at a time when climatic conditions were conducive for terrestrial mollusk activity. In the absence of seasonally appropriate terrestrial mollusk surveys, the presence of Trinity shoulderband should be assumed. (Bureau of Land Management, 2009)

Big Bar hesperian (*Vespericola pressleyi*) is a terrestrial air-breathing snail in the *Polygyridae* family. It is listed as G1 S1. The typical habitat for this species is beneath decaying hardwood leaves, woody debris, and loose rocks near active streams. It is active on damp moss and fallen bigleaf maple leaves around a perennial spring seep shaded by a dense canopy of red alder and bigleaf maple. It can be associated with springs in a relatively open stand of Douglas-fir. This habitat type was observed in the project area. This study was not conducted at a time when climatic conditions were conducive for terrestrial mollusk activity. In the absence of seasonally appropriate terrestrial mollusk surveys, the presence of Big Bar Hesperian should be assumed. (Burke, Applegarth, & & Weasma, Management Recommendations for Survey and Manage Terrestrial Mollusks Version 2, 1999)

Western pearlshell (*Margaritifera falcata*) is a bivalve mollusk in the *Margaritiferidae* family. It is listed as G4G5 S1S2. The typical habitat for this species is the substrate of perennial creeks and rivers with clean water at depths generally of 1.5 – 5.0 feet. This habitat type was observed

near the diversion site, which is not listed as a project area, for the purposes of this study. During the study, western pearlshell was not found in the study area. (Wagschal, Blevins, & Embree, 2017)

Vertebrates

Fish

The Pisces fish extent data shows that the project and seven fish species (Table 5) are known to occur in the McDonald Creek - Trinity River watershed (HUC 12- 180102111106). Four of these species are considered sensitive fish species. The diversion is on a stream that is likely to provide habitat for these fish. It is not considered a project, for the purposes of this document.

Scientific Name	Common Name	PISCES Code	Watershed	G Rank	S Rank	CDFW
Rhinichthys osculus Klmathensis	Klamath Speckled Dace	CRO03	McDonald Creek-Trinity River			
Oncorhynchus tshawytsha	Upper Klamath-Trinity Spring Chinook Salmon	SOT02	McDonald Creek-Trinity River	G5	S1S2	SSC
Oncorhynchus tshawytsha	Upper Klamath-Trinity Fall Chinook Salmon	SOT01	McDonald Creek-Trinity River	G5	S1S2	SSC
Oncorhynchus mykiss	Klamath Mountains Province Winter Steelhead	SOM03	McDonald Creek-Trinity River	G5T1Q	S2	SSC
Oncorhynchus mykiss irideus	Coastal Rainbow Trout	SOM09	McDonald Creek-Trinity River	G5T4Q	S2	SSC
Ententosphenus tridentata	Pacific Lamprey	PET01	McDonald Creek-Trinity River	G4	S4	SSC
Catostomus rimiculus	Klamath Small Scale Sucker	CCR01	McDonald Creek-Trinity River			

Table 5: Fish Known to Occur in the McDonald Creek-Trinity River Watershed

Reptiles & Amphibians

The land owner recently found a coastal giant salamander (*Dicamptodon tenebrosus*) near a natural wet area, with intermittent streams, not associated with a defined project. There are many of these areas interspersed between the project areas. Western pond turtles were observed on two separate occasions within a wildlife habitat pond on the property. The wildlife habitat pond is not associated with any of the projects defined in this document.

The wildlife habitat pond is not currently impacted by anthropogenic activities and is not related to any of the CUP projects. The pond is currently lacking raft features. In addition, invasive cattail proliferation has reduced the pond entrance and exit locations on the banks. There are future plans to modify the Lake and Streambed Alteration Agreement to include Western pond turtle habitat enhancement. Proposed activities will include removal of cattails and insertion of large woody debris to be used as a raft or exit ramp.

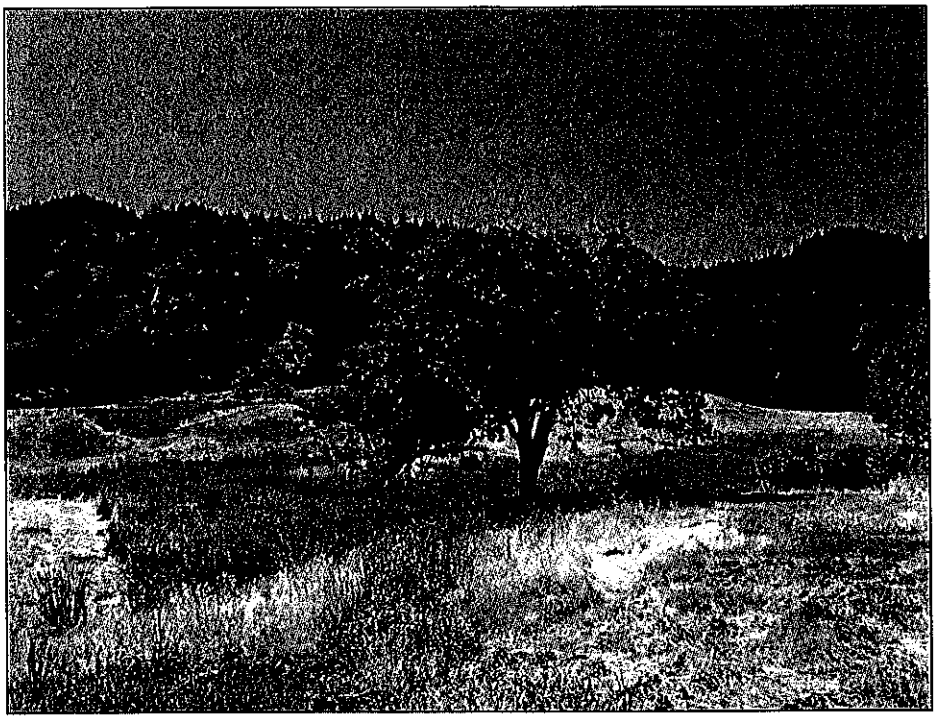


Figure 19: Wetland Riparian Habitat

Foothill yellow-legged frog (*Rana boylii*) is an amphibian in the *Ranidae family*. It is listed as G3 S3. The typical habitat for this species is rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. It is sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. This habitat type was observed near the diversion, which is not a project focus for the purposes of this study. During the study, foothill yellow-legged frog was not found in the study area. (Nafis, Foothill Yellow-legged Frog - Rana boylii, 2000-2018)

Pacific tailed frog (*Ascaphus truei*) is a tailed frog in the *Ascaphidae* family. It is listed as G4 S3S4. The typical habitat for this species is cold, clear, permanent rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for protective cover for adults, eggs, and larvae. This habitat type was observed near the diversion point, but not in the project areas defined for this project. During the study, Pacific tailed frog was not found in the study area. (Nafis, Pacific Tailed Frog, 2000-2018)

Del Norte salamander (*Plethodon elongatus*) is a lungless salamander in the *Plethodontidae* family. It is listed as G4 S3. The typical habitat for this species is moist talus in humid, shaded, and closed-canopy coastal forests of mixed hardwoods and conifers; it also found in rock rubble of old riverbeds, and under bark and logs on forest floors, usually in rocky areas. It is especially attracted to older forests. This habitat type was observed in the project area. During the study, Del Norte salamander was not found in the study area. (Zeiner, Laudenslayer Jr., Mayer, & White, 1988-1990)

Southern torrent salamander (*Rhyacotriton variegatus*) is a medium-sized salamander in the *Rhyacotritonidae* family. It is listed as G3G4 S2S3. The typical habitat for this species is shallow, cold, clear, well-shaded streams and waterfalls and seepages, particularly those running through talus and under rocks year-round, in mature to old-growth forests. This species is occasionally found in riparian vegetation adjacent to water, but is usually found in contact with water, primarily in water on north-facing slopes in the southern part of their range where forests are warmer and drier. The aquatic larvae live in clear, shallow water and still, turbid water in creeks with accumulated leaves. This habitat type was observed in the project area. During the study, Southern torrent salamander was not found in the study area. (Zeiner, Laudenslayer Jr., Mayer, & White, 1988-1990)

Western pond turtle (*Emys marmorata*) is an aquatic turtle in the *Emydidae* family. It is listed as G3G4 S3. Typical habitat for this species is ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodlands, forests, and grasslands. In streams, they prefer pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. They may enter brackish water and seawater. This habitat type was observed adjacent to the project area. During the study, Western pond turtle was found on the property. (Nafis, Northwestern Pond Turtle - Actinemys marmorata, 2000-2018)

Mammals

In 2011, USDA Forest Service staff used a game camera to document the following species 1/3 of a mile southwest of the closest project area: Columbian black tailed deer (*Odocoileus hemionus columbianus*), ringtail cat (*Bassariscus astutus*), grey fox (*Urocyon cinereoargenteus*), mountain lion (*Puma concolor*), American black bear (*Ursus americanus*), and striped skunk (*Mephitis mephitis*). We can assume these mammals all use the diverse habitats that the Holliday property provides. Two fishers were observed fighting on the property in 1991. We can assume that they have continued to use this property as habitat.

Fisher West Coast DPS (*Pekania pennanti*) is an omnivorous mammal in the *Mustelidae* family. It is listed as G5 T2T3Q S2S3. The typical habitat for this species is coniferous forests, but it is also found in mixed and deciduous forests with a high canopy closure and many hollow trees for dens. Tree species typically found in fisher habitat are spruce, fir, white cedar, and some hardwoods. This habitat type was observed in the project area. Fishers have been historically observed in the study area. (Meyer, 2018)

The nine quad CNNDB search for sensitive species lists several bat species. None of these species were directly observed during site visits, but the property owner has observed a variety of unidentified species flying around the property at dusk. Presence of all sensitive bats listed below should be assumed.

Silver haired bat (*Lasionycteris noctivagans*) is an animal in the *Vespertilionidae* family. It is listed as G5 S3S4. Forested coniferous areas adjacent to lakes, ponds, and streams are their preferred roosting sites. Summer roosts and nursery sites are in tree foliage, cavities, or under

loose bark, and sometimes in buildings. They hibernate in small tree hollows, beneath sections of tree bark, in buildings, rock crevices, wood piles, and on cliff faces. The silver-haired bat (*Lasionycteris noctivagans*) is one of the slowest flying bats; slow flying bats will not forage in illuminated areas because they are sensitive to artificial nocturnal lights. This species roosts in forests, but can also be found roosting in wood piles and on fence posts, so its presence should be expected on site. The silver-haired bat is almost certainly present on this property because they feed on moths and mosquitoes over bodies of water, such as the pond located on the property. (Silver-Haired Bat, 2017)

Hoary bat (*Lasiurus cinereus*) is a vesper bat in the *Vespertilionidae* family. It is listed as G5 S4. The typical roosting habitat for this species is in the foliage of trees near the ends of branches. It blends with the bark of trees and is commonly associated with forested habitats. It can also be found in suburbs with old, large trees.

The hoary bat (*Lasiurus cinereus*) is almost certainly found on this property because it roosts in wooded habitats on the edges of residential areas. Unlike some other bat species, it can be found foraging around artificial lighting late at night. This species is preyed upon by snakes and nocturnal raptors, such as owls. Artificial lighting could make them more sensitive to predators. (Hoary Bat, 2017)

Long-eared myotis (*Myotis evotis*) is a vesper bat in the *Vespertilionidae* family. It is listed as G5 S3. The typical roosting habitat for this species is crevices, snags, spaces under bark, and buildings. Night roosting usually occurs in caves. Foraging habitat is over water, open spaces, and among trees. (Zeiner, Laudenslayer Jr., Mayer, & White, 1988-1990). The long-eared myotis (*Myotis evotis*) is another low flying bat that is averse to artificial lighting at night. This species is sensitive to construction activities because it roosts in rocky crevices and abandoned buildings which tend to be sites for building construction. There are a few historical unkempt buildings on the property that are more than likely habitat for this species of bat. (Nor Cal Bats, 2017)

Yuma myotis (*Myotis yumanensis*) is an animal in the *Vespertilionidae* family. It is listed as G5 S4. The typical habitat for this species is crevices, buildings, mines, and caves. Trees are most important for day roosting. Night roosting usually occurs in caves. Foraging habitat is over streams and ponds, openings in forests, and woodlands (Zeiner, Laudenslayer Jr., Mayer, & White, 1988-1990). The Yuma myotis (*Myotis yumanensis*) forages over water on emerging aquatic insects, so it could be found on this property. It usually exists within large groups of up to 5,000 bats. Since there is not a huge number of bats on this property, they most likely are not prevalent; however, their presence should be assumed because they tend to roost in manmade buildings. They are very sensitive to human activity and chemicals. (Yuma Myotis, 2017)

Long-legged myotis (*Myotis volans*) is a vesper bat in the *Vespertilionidae* family. It is listed as G5 S3. The typical habitat for this species is crevices, snags, spaces under bark, buildings mines, and caves. Trees are most important for day roosting. Night roosting usually occurs in caves. Foraging habitat is low to the ground (3 - 5 m), over surface water, and openings in early successional forests, woodlands, chaparral, and cliffs (Zeiner, Laudenslayer Jr., Mayer, & White, 1988-1990). The long-legged myotis is likely prevalent on the property, even though they are

uncommon throughout their range. They are primarily found at the confluence of coniferous forests and agricultural areas. They roost in abandoned buildings, hollow trees, and other crevices. They are slow flying bats that are sensitive to nocturnal artificial light. They are also sensitive to construction activities that remove roosting trees, rocky areas, and older buildings. (Long-Legged Myotis, 2017)

Townsend's big eared bat (*Corynorhinus townsendii*) is a mammal in the *Vespertilionidae* family. It is listed as G3G4 S2. The typical habitat for this species is coniferous forest, mixed mesophytic forest, deserts, native prairie, riparian communities, active agricultural areas, and coastal habitats. Its distribution is strongly correlated with the availability of caves and cave-like roosting habitat, with population centers occurring in areas dominated by exposed, cavity-forming rock and/or historic mining districts. Foraging habitat type was observed in the project area; however, it is unknown whether there is adequate roosting habitat nearby. They roost in abandoned buildings, under tree bark, and in rock crevices (National Park Service, 2018). Townsend's big eared bat is very sensitive to human presence, but it is known to roost in old barns such as the one located on the property. They only forage during complete darkness, so reducing nocturnal artificial lighting is important to the presence of this species. They are beneficial to humans because Townsend's big eared bats prey on moths that can cause damage to property especially by the invasive and destructive gypsy moth (*Lymantria dispar dispar*) which has found its way to California from the east coast where it entered from shipments from Europe and Asia. (Townsend's Long-Eared Bat, 2017)

Fringed myotis (*Myotis thysanodes*) is a vesper bat in the *Vespertilionidae* family. It is listed as G4 S3. The typical roosting habitat for this species is crevices, mines, caves, and buildings. Maternal colonies tend to seek out roosting habitat within ¼ mile of a permanent surface water source and with afternoon shade. Foraging habitat is over water, in open habitats, and around dense foliage (Zeiner, Laudenslayer Jr., Mayer, & White, 1988-1990). The fringed myotis has a patchy distribution and it is uncommon throughout its range. It lives in drier scrub oak woodland and juniper woodland and can be found in warmer, lower elevations during the winter. Its presence is assumed on the property and special considerations should be taken when removing dead trees or old buildings from the property. (Fringe Tailed Bat, 2017)

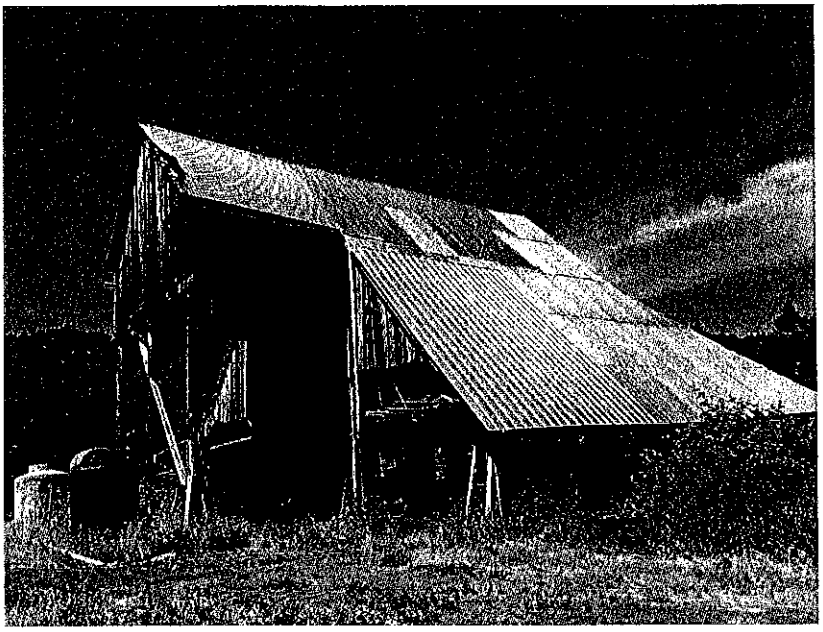


Figure 20: Historic Barn Suspected to Provide Bat Roosting Habitat

Wolverine (*Gulo gulo*) is an omnivorous mammal in the *Mustelidae* family. It is listed as G4 S1. The typical habitat for this species is alpine, tundra, taiga, and boreal forest zones, including coniferous, mixed, and deciduous woodlands, bogs, and open mountains, as well as tundra habitats with dense spring snow pack. This habitat type was not observed in the project area. Wolverines are commonly misidentified in this area and it is possible that this occurrence was a result of misidentification. During the study, wolverines were not found in the project areas. (Patsy, 2009)

Humboldt marten (*Martes caurina humboldtensis*) is a carnivorous mammal in the *Mustelidae* family. It is listed as G5 T1 S1. The typical habitat for this species is humid, coastal old-growth redwood forests. Old growth redwood forest habitat was not observed in the project area. Furthermore, the known extent of this species is limited to four small populations in coastal redwood forests. During the study, the Humboldt marten was not found in the study area. (Arcata Fish and Wildlife Office, 2017)

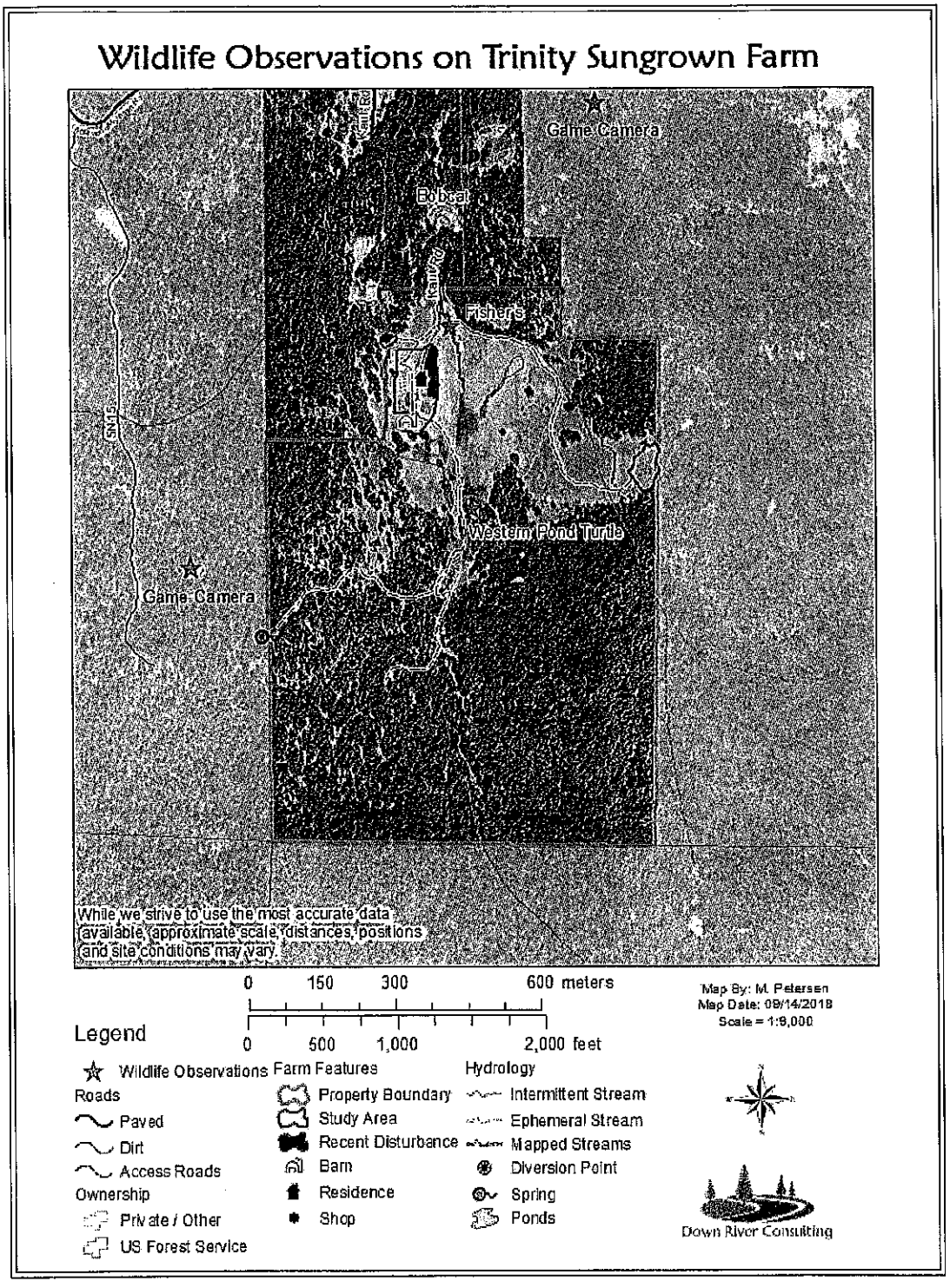


Figure 21: Wildlife Map

Birds

Northern Spotted Owl (*Strix occidentalis caurina*): The property is bordered to the west, east, and north by Late Successional Reserve (LSR) National Forest Lands and it is surrounded by national forests lands that are designated as northern spotted owl (NSO) critical habitat. The developed areas on the property are not considered nesting/roosting and dispersal habitat; however, much of the property likely provides habitat for NSO. In addition, the open areas are expected to provide foraging habitat. There have been many NSO observations in the immediate vicinity of the property. Furthermore, there is documented activity through the center of the property. The USDA Forest Service currently has hooting crews completing surveys in the LSR surrounding the property. These surveys are for the Burnt Ranch Community Protection project NEPA. Hooting surveys have not been completed within the property.

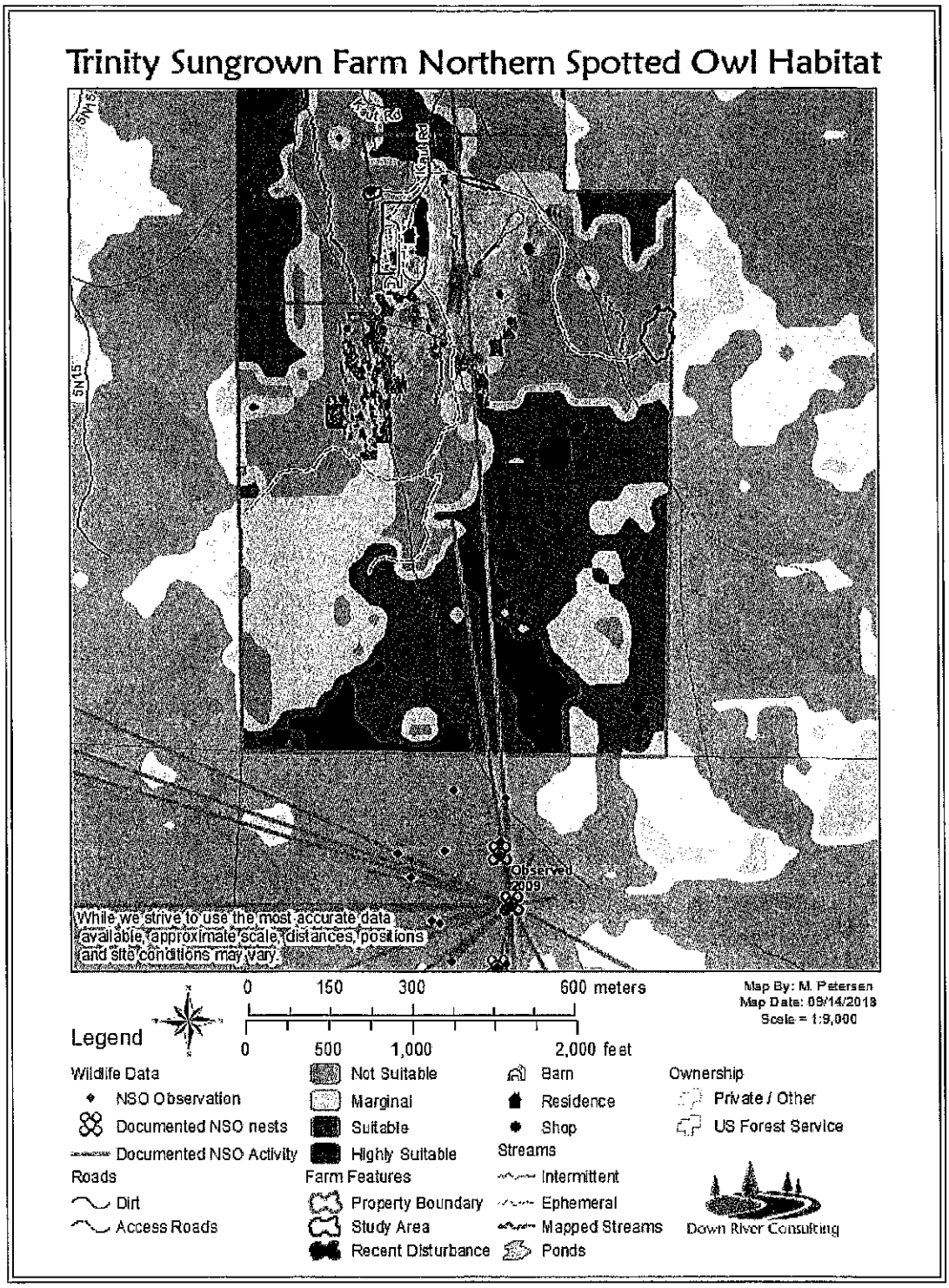


Figure 22: NSO Map

Other Birds

Positively identified birds at the proposed pond site (NE) were red winged black birds (*Agelaius phoeniceus*) and barn swallows (*Hirundo rustica*). Neither are species of concern.

Figure 23: Barn Swallow (*Hirundo rustica*) Nest

Bald eagle (*Haliaeetus leucocephalus*) is a raptor in the *Accipitridae* family. It is listed as G5 S3. The typical habitat for this species is lakes and reservoirs with lots of fish and surrounding forests. In the winter, bald eagles can be seen around unfrozen lakes and hunting along coastlines, reservoirs, and rivers. During their migration, bald eagles are seen near all types of water habitats. This habitat type was observed in the project area. During the study, bald eagles were not found in the study area. (Bald Eagle, 2018)

Great blue heron (*Ardea herodias*) is a large wading bird in the *Ardeidae* family. It is listed as G5 S4. Typical habitat for this species is marshes, swamps, shores, and tide flats. It forages in any kind of calm, fresh waters or slow-moving rivers, as well as in shallow coastal bays. They

nest in trees or shrubs near water, sometimes on ground in areas free of predators. This habitat type was observed in the project area. During the study, the great blue heron was not found in the study area. (Cornell University, 2017)

Northern goshawk (*Accipiter gentilis*) is a raptor in the *Accipitridae* family. It is listed as G5 S3. The typical habitat for this species is coniferous forests with high DBH trees and low sloping hillsides. They prefer to hunt on or near low traffic areas or by decommissioned unpaved roads that run through forests. All of these habitat elements were observed in or adjacent to the project area. During the study, the Northern goshawk was not found in the study area. (Kaufmen, 2018)

Impacts and Mitigations Discussion

The project areas are dominated by ruderal vegetation, resulting from a long history of agricultural use and other anthropogenic disturbance. The paramount environmental concern for this property is vegetation management. Italian thistle (*Carduus pycnocephalus*) is growing on the property as well as jointed goatgrass (*Aegilops cylindrical*). These invasive species are rated as moderate and "to watch" respectively, by the California Invasive Plant Council (Cal-IPC). They are both high priority for treatment in Trinity County because there are very few known populations in the county. Only one jointed goatgrass plant was found flowering onsite. It was removed, bagged, and taken to the Weaverville Solid Waste Facility.

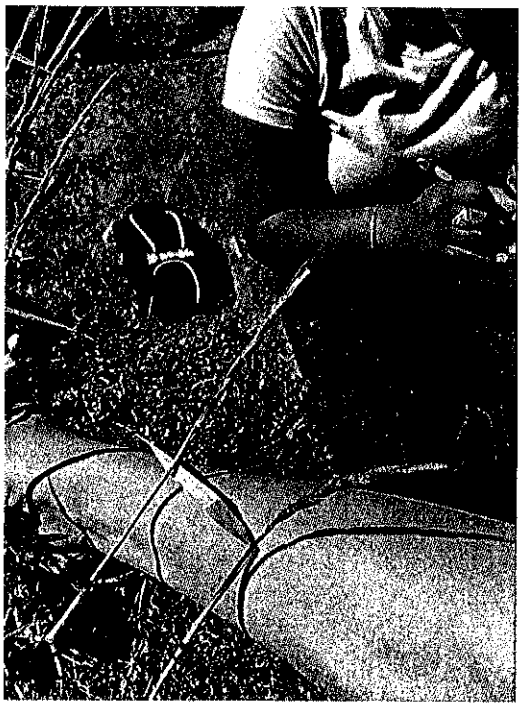


Figure 24: Jointed Goatgrass (*Aegilops cylindrical*)

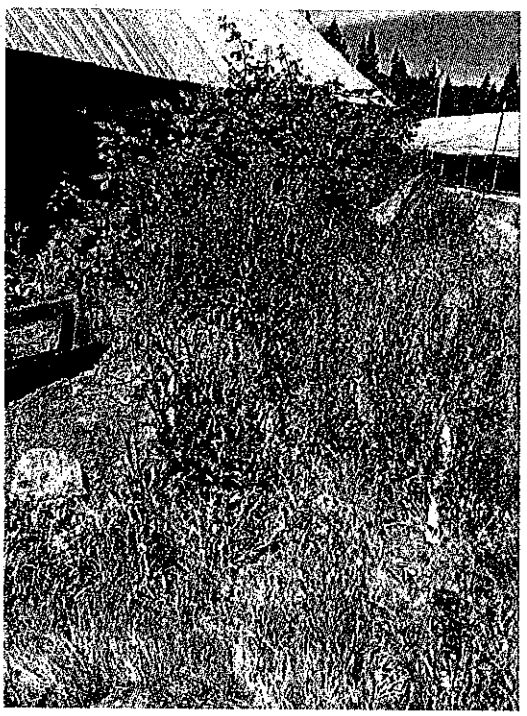


Figure 25: Italian Thistle (*Carduus pycnocephalus)*

Milk thistle (*Silybum marianum*) was also found in the 10,000 ft² cultivation area. It is rated as limited concern by Cal-IPC; however, it was not known to historically have grown in Trinity County. Aggressive treatment measures should be taken to extirpate this plant from the site.

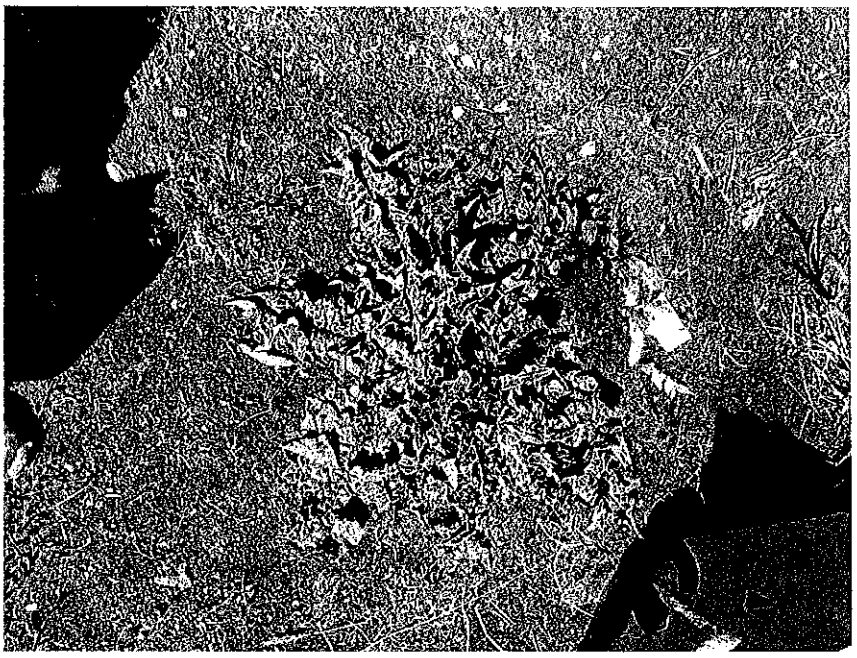


Figure 26: Milk Thistle *(Silybum marianum)*

Proliferation of untreated noxious weeds causes wildlife habitat degradation and has been found to cause enormous agricultural losses. These impacts are considered significant (FAC Article 1.7, 7270). To mitigate these impacts, monthly monitoring of the project areas should be conducted throughout the growing season, together with rapid (treatment) response to new weed populations and an integrated pest management plan which addresses the biological considerations of the target species. Implementation of the mitigation measures would reduce these impacts to a less than significant level.

All species of bees are sensitive to pesticides and habitat loss and degradation. It is important to restrict pesticide use near suitable habitat and especially during the time of year when foraging plants are flowering. Integrated pest management plans should ensure that application of chemicals (if used) only occurs when absolutely necessary and at the time of day when the native bees on site are resting. (FAC 3 CCR § 6650) Planting nitrogen-fixing fallow and other pollinator-friendly plants along the field margins can increase habitat for bee species (Hatfield, Jepsen, Thorp, Richardson, & Colla, 2014).

The pond development will locally reduce the quantity and quality of pollinator habitat in the meadow. The meadow chosen for the proposed pond site provides some of the best bee foraging habitat in the area. While the pollinators discussed on page 34 are not protected under CESA, they are listed as critically imperiled by CDFW. Additional actions could be taken to counteract the immediate impacts of pollinator foraging and nesting habitat removal, by creating and preserving high-quality habitats that include suitable foraging and nesting sites. Planting native

nectar plants adjacent to the areas slated for development will help support the native pollinator species, thus mitigating the localized impacts that could intensify the decline of these critically impaired pollinator species.

Loss of roosting habitat for sensitive bats could occur as a result of historic barn and snag removal. Snags are recognized in the Forest Practices Act as habitat elements needed by over 160 species of wildlife. (Laird & Pimlott, 2017) A high diversity of sensitive bats is assumed to use the property for roosting and foraging habitat. Loss of roosting habitat is considered significant. Leaving the historic barn intact, as well as snags larger than 16" DBH to serve as habitat features, would mitigate the potential impacts to these sensitive species.

A recent Humboldt County study found the cause of death for 60% of northern spotted owl carcasses sampled was a result of anticoagulant rodenticides (Gabriel, 2018). Northern spotted owls are protected under the Endangered Species Act, thus any NSO take would be considered significant (US Fish and Wildlife Service, 1973). TES species data shows that northern spotted owls and fishers frequent this property. In order to mitigate for unintended harm to northern spotted owls and fishers, the farm will use preventative and non-chemical strategies to control rodents. The rodent prevention strategy will focus on reducing the rodent carrying capacity of the site by removing food access and items/features that could provide habitat to rodents. The farm manager will erect owl boxes and use domestic predators such as cats or dogs bred to hunt rodents, if needed. In the event that an infestation is detected, traps and EradiBait, a non-anti-coagulant powder corn cob, will be used to extirpate the pests. The use of this pest management strategy, rather than anticoagulant rodenticides, reduces the rodent management impacts to less than significant.

Overall, the 210-acre property that these proposed projects are within provides habitat for a plethora of species, many of which are on the list of species of greatest conservation concern. In response to a comment about the amount of responsibility that comes with ownership of a property this size, the land owner replied, "I do not own this land, it owns me. I am just lucky enough to be able to take care of it for a while." Based on the environmental stewardship witnessed on site, it is evident that the land owner has the drive and ethics to implement this project utilizing a sustainable, low impact method. The parcel is zoned as Agricultural Preserve. In order to keep its Williamson Act status, the land owner is required to implement agricultural projects on the parcel. A 1-acre agricultural crop is an excellent way to begin to meet that requirement.

Appendix A

Plant Species Present Within Current 10,000 Ft² Cultivation Area			
Family Name	**Scientific Name**	**Common name**	**Status**
Asteraceae	*Carduus pycnocephalus*	Italian thistle	Invasive Cal-IPC Rating Moderate
Asteraceae	*Centaurea solstitialis*	yellow star-thistle	Invasive Cal-IPC Rating-High
Asteraceae	*Matricaria chamomilla*	German chamomile	Non-native
Brassicaceae	*Capsella bursa-pastoris*	shepherd's purse	Non-native
Brassicaceae	*Diplotaxis muralis*	annual wallrocket	Non-native
Caryophyllaceae	*Stellaria media*	chickweed	Non-native
Chenapodeaceae	*Chenopodium album*	lambs quarters	Non-native
Fabaceae	*Acmisipon nevadensis ssp nevadensis*	Sierra lotus	
Fabaceae	*Lotus corniculatus*	Yolla Bolly bird's foot trefoil	
Malvaceae	*Malva neglecta*	dwarf mallow	Non-native
Pinaceae	*Pinus ponderosa*	ponderosa pine	
Plantaganaceae	*Plantago lanceolata*	plantain	Invasive Cal-IPC Rating Limited
Poaceae	*Aegilops cylindrical*	jointed goatgrass	Watchlist
Poaceae	*Elymus repens*	quack grass	Non-native
Poaceae	*Hordeum marinum ssp. gussoneanum*	barley	Invasive Cal-IPC Rating Moderate
Polygonaceae	*Polygonum avicular ssp. depressum*	common knotweed	Non-native
Ranunculaceae	*Ranunculus sardous*	hairy buttercup	
Scrophulariaceae	Verbascum blattaria	moth mullein	Non-native

Plant Species Present Near Metal Shop			
Family Name	**Scientific Name**	**Common name**	**Status**
Asteraceae	*Cichorium intybus*	chicory	Non-native

Asteraceae	*Matricaria chamomilla*	German chamomile	Non-native
Brassicaceae	*Hirschfeldia incana*	Mustard	Invasive Cal-IPC Rating Moderate
Cupressaceae	*Calocedrus decurrens*	incense cedar	
Ericaceae	*Arbutus menziesii*	madrone	
Fabaceae	*Acmisipon nevadensis ssp nevadensis*	Sierra lotus	
Fabaceae	*Medicago lupulina*	black medick	Non-native
Fagaceae	*Quercus garryana*	white oak	
Fagaceae	*Quercus Kelloggii*	black oak	
Pinaceae	*Pinus ponderosa*	ponderosa pine	
Pinaceae	*Pseudotsuga menziesii*	Douglas fir	
Plantagiaceae	*Plantago lanceolata*	narrow leaf plantain	Invasive Cal-IPC Rating Limited
Poeaceae	*Avena fatua*	common wild oat	Invasive Cal-IPC Rating Moderate
Poeaceae	*Cynosurus echinatus*	dogtail grass	Invasive Cal-IPC Rating Moderate
Poeaceae	*Festuca microstachys*	small fescue	
Poeaceae	*Phleum pratense*	common timothy	
Polygonaceae	*Rumex acetosella*	common sheep sorrel	Invasive Cal-IPC Rating Moderate
Scrophulariaceae	*Verbascum virgatum*	wand mullein	Non-native
Themidaceae	*Brodiaea coronaria*	crown brodiaea	
Themidaceae	*Dichelostemma multiflorum*	many flowered brodiaea	

Plant Species Present Near Proposed Pond			
Family Name	**Scientific Name**	**Common name**	**Status**
Alliaceae	*Allium penisulare var. peninsulare*	Mexicali onion	
Anacardinaceae	*Toxidendron diversifolium*	poison oak	
Apocynaceae	*Apocynum androsaemifolium*	bitter dogbane	

Asteraceae	*Anisocarpus maliodes*	woodland madia	
Asteraceae	*Centaurea sostitialis*	yellow star-thistle	Invasive Cal-IPC Rating-High
Asteraceae	*Cichorium intybus*	chicory	Non-native
Asteraceae	*Hemizonia congesta ssp. clevelandii*	Cleveland's tarweed	
Asteraceae	*Matricaria discoidea*	pineapple weed	
Asteraceae	*Silybum marianum*	milk thistle	Invasive Cal-IPC Rating-Limited
Caryophyllaceae	*Silene bolander*	Bolander's silene	
Convolvulaceae	*Calystegia occidentalis ssp. occidentalis*	Modoc morning glory	
Cupressaceae	*Calocedrus decurrens*	incense cedar	
Dennstaedtiaceae	*Pteridium aquilinum ssp.*	bracken fern	
Ericaeceae	*Arbutus menziesii*	madrone	
Fabaceae	*Acmispon nevadensis*	Sierra lotus	
Fagaceae	*Quercus garryana*	Oregon white oak	
Geranniaceae	*Erodium cicutarium*	red stem fillerie	Invasive Cal-IPC Rating-Limited
Hypericaceae	*Hypericum perforatum*	Klamathweed	Invasive Cal-IPC Rating Moderate
Lamiaceae	*Clinopodium douglasii*	yerba buena	
Pinaceae	*Pseudotsuga menziesii*	Douglas fir	
Plantaginaceae	*Plantago lanceolata*	narrow leaf plantain	Invasive Cal-IPC Rating-Limited
Plantaginaceae	*Veronica arvensis*	speedwell	

Poeaceae	*Bromus diandrus*	ripgut brome	Invasive Cal-IPC Rating Moderate
Poeaceae	*Bromus tectorum*	cheat grass	Invasive Cal-IPC Rating-High
Poeaceae	*Dactylis glomerata*	orchard grass	Invasive Cal-IPC Rating-Limited
Poeaceae	*Elymus caput-medusae*	medusa-head grass	Invasive Cal-IPC Rating-High
Poeaceae	*Elymus glaucus*	blue wild rye	
Poeaceae	*Festuca microstachys*	small fescue	
Poeaceae	*Glyceria elata*	fowl mannagrass	
Poeaceae	*Phleum alpinum*	alpine Timothy	
Poeaceae	*Phleum pratense*	common timothy	
Polemoniaceae	*Navarretia intertexta*	interwoven navarretia	
Polygonaceae	*Rumex acetosella*	sheep sorrel	Invasive Cal-IPC Rating Moderate
Polymoniaceae	*Navarretia intertexta ssp. intertext*	needleleaf naverritia	
Rosaceae	*Rubus ameniacus*	Armenian blackberry	Invasive Cal-IPC Rating-High
Saxifraceae	*Lithophragma parviflorum ssp*	woodland star	
Themidaceae	*Dichelostemma ida-maia*	firecracker brodeiaea	

Appendix B

Animal Species Present On Site

Family name	Scientific Name	Common Name	Status	Location
Apidae	*Apis mellifera*	European honey bee	Non-native	All project areas
Bombyliidae	*Bombylius major*	bee fly		Future pond
Corvidae	*Cyanocitta stelleri*	Stellar's jay		Metal shop
Dicamptodontidae	*Dicamptodon tenebrosus*	giant coastal salamander		10,000 ft² canopy
Emydidae	*Actinemys marmorata*	western pond turtle	G3G4 S3	Future pond
Hirundinidae	*Hirundo rustica*	barn swallow		Barn
Hirundinidae	*Tachycineta bicolor*	tree swallow		10,000 ft² canopy
Icteridae	*Agelaius phoeniceus*	red wing black bird		Pond
Papilionidae	*Papilio polyxenes*	swallow tail butterfly		Metal shop
Prodoxidae	*Greya spp.*	Yucca moth		Future pond

References

Arcata Fish and Wildlife Office. (2017, April 10). *Humboldt Marten Martes caurina humboldtensis*. Retrieved June 2018, from US Fish and Wildlife Service: https://www.fws.gov/arcata/es/mammals/HumboldtMarten/humbMarten.html

Arnold, R. A. (1987). *A Review On Six Known Candidate Insects.* Pleasant Hills, CA: Ethnological Consulting Services.

Bald Eagle. (2018). Retrieved from The National Wildlife Federation: https://www.nwf.org/Educational-Resources/Wildlife-Guide/Birds/Bald-Eagle

Baldwin, B. D. (2012). *The Jepson Manual Vascular Plants of California.* Berkeley: University of California Press.

Buchman, S. (n.d.). *Carpenter Bees (Xylocopa spp.)*. Retrieved from United States Department of Agriculture Forest Service: https://www.fs.fed.us/wildflowers/pollinators/pollinator-of-the-month/carpenter_bees.shtml

Bureau of Land Management. (2009). *Field Guide to Survey and Manage Terrestrial Mollusks from the North West Forest Plan.* BLM Oregon State Office.

Bureau of Land Managment. (2009). *Field Guide to Survey and Manage Terrestrial Mollusks from the North West Forest Plan.* BLM Oregon State Office.

Burke, T. E., Applegarth, J. s., & & Weasma, T. R. (1999). *Management Recommendations for Survey and Manage Terrestrial Mollusks Version 2.* Unknown City: Unknown Publisher. Retrieved May 2018

Burke, T. E., Applegarth, J. s., & Weasma, T. R. (1999). *Management Recommendations for Survey and Manage Terrestrial Mollusks Version 2.* Unknown City: Unknown Publisher. Retrieved May 2018

CalFlora. (2018, June). *Calflora*. Retrieved from Information on California Plants for Education, Research and Conservation: http://www.calflora.org

CalFlora. (2018, June). *What Grows Here*. Retrieved from http://www.calflora.org/entry/wgh.html

California Code of Regulations, t. 1. (2018). *General Lake and Streambed Alteration Agreement for Activities Related to Cannabis Cultivation.* Retrieved from California Department of Fish and Wildlife: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=155627&inline

California Department of Fish and Wildlife, N. D. (2018, April). Special Animals List. Periodic publication. Page 6.

California Native Plant Society. (2018). (online edition, v08-03 0.39). Retrieved May 30, 2018, from Inventory of Rare and Endangered Plants : http://www.rareplants.cnps.org

California Natural Resources Agency. (2014). *resources.ca.gov/ceqa/more/faq.html*. Retrieved from California Natural Resources Agency - FAQ: http://resources.ca.gov/ceqa/more/faq.html

California North Coast Regional Water Quality Control Board. (2015, August). Order 2015-0023 Waiver of Waste Discharge. California: State of California.

Cornell University. (2017). *All About Birds*. Retrieved from The Cornell Lab of Ornithology: https://www.allaboutbirds.org/guide/Great_Blue_Heron/id

Ellis, J., Mortensen, A., & Schmehl, D. (2017, December). *Featured Creatures: Apis mellifera*. Retrieved from Entomology and Nematology Department, University of Florida: http://entnemdept.ufl.edu/creatures/MISC/BEES/euro_honey_bee.htm

Fringe Tailed Bat. (2017, Decemeber 1). Retrieved from Northern California Bats Rescue and Education: http://norcalbats.org/2017/12/01/fringe-tailed-bat/

Gabriel, M. W. (2018). Exposure to rodenticides in Northern Spotted and Barred Owls on remote forest lands in northwestern California: evidence of food web contamination. *Avian Conservation and Ecology*, 13(1):2.

Habitat Conservation Planning Branch. (2018). *CESA to Federal Endangered Species Act*. Retrieved from California Department of Fish and Wildlife: https://www.wildlife.ca.gov/Conservation/CESA/FESA

Hatfield, R., Jepsen, S., Thorp, R., Richardson, L., & Colla, S. (2014). *Bombus mixtus*. Retrieved from The IUCN Red List of Threatened Species 2014: e.T44937898A69004061: http://www.iucnredlist.org/details/44937898/0

Hoary Bat. (2017, December 1). Retrieved from Northern California Bats Rescue and Education: http://norcalbats.org/2017/12/01/hoary-bat/

Kaufman, K. (2018). *Golden Eagle*. Retrieved June 2018, from Audabon: https://www.audubon.org/field-guide/bird/golden-eagle

Kaufman, K. (2018). *Osprey*. Retrieved June 2018, from Audobon: https://www.audubon.org/field-guide/bird/osprey

Kaufmen, K. (2018). *Audubon*. Retrieved from Northern Goshawk: https://www.audubon.org/field-guide/bird/northern-goshawk

Koch, J., Strange, J., & Williams, P. (2012). *Bumblebees of the Western United States*. Logan, Utah: USDA Agricultural Research Service.

Laird, J., & Pimlott, K. (2017). California Forest Practice Rules . CalFire.

Long-Legged Myotis. (2017, Decemeber 1). Retrieved from Northern California Bats Rescue and Education: http://norcalbats.org/2017/12/01/long-eared-myotis/

Meyer, R. (2018, July 13). *Pekania pennanti*. (F. S. U.S. Department of Agriculture, Producer) Retrieved July 2018, from Fire Effects Information System: https://www.fs.fed.us/database/feis/animals/mammal/pepe/all.html

Nafis, G. (2000-2016). Retrieved June 2018, from A Guide to the Amphibians and Reptiles of California: http://www.californiaherps.com/

Nafis, G. (2000-2018). *Foothill Yellow-legged Frog - Rana boylii*. Retrieved June 2018, from A Guide to the Amphibians and Reptiles of California: http://www.californiaherps.com/frogs/pages/r.boylii.html

Nafis, G. (2000-2018). *Northwestern Pond Turtle - Actinemys marmorata*. Retrieved June 2018, from A Guide to the Amphibians and Reptiles of California: http://www.californiaherps.com/turtles/pages/a.marmorata.html

Nafis, G. (2000-2018). *Pacific Tailed Frog*. Retrieved June 2018, from A Guide to the Amphibians and Reptiles of California: http://www.californiaherps.com/frogs/pages/a.truei.html

National Marine Fisheries Service. (2016, November). NMFS California Species List. Retrieved July 5, 2018

National Park Service. (2018, January 31). *Townsend's Big-eared bats*. Retrieved June 2018, from Channel Islands: https://www.nps.gov/chis/learn/nature/townsends-bats.htm

Nor Cal Bats. (2017, December 1). *Long-Eared Myotis*. Retrieved from Northern California Bats Rescue and Education: http://norcalbats.org/2017/12/01/long-eared-myotis/

NRCS. (2000, May). *Rainbow Trout*. Retrieved June 2018, from US Fish and Wildlife Service: https://www.fws.gov/northeast/wssnfh/pdfs/rainbow1.pdf

Patsy, V. a. (2009). *Gulo gulo*. Retrieved June 2018, from Animal Diversity Web: https://animaldiversity.org/accounts/Gulo_gulo/

Sawyer, J. T.-W. (2009). A Manual of California Vegetation, Second Edition. Sacramento, CA. Retrieved June 5, 2018

Sheen, K. &. (2018, May 30). Trinity County Collaborative Group Land Assessment Project Data. Weaverville , CA, USA.

Silver-Haired Bat. (2017, December 1). Retrieved from Northern California Bats Rescue and Education: http://norcalbats.org/2017/12/01/silver-haired-bat/

Staley, K., & Mueller, J. (2000, May). Rainbow Trout. *Wildlife Habitat Management Institute*.

State of California. (1957). *Fish and Game Code 3503*. Retrieved from California Legislative Information: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC&sectionNum=3503.

State of California. (2017, June 27). *California Senate Bill No. 94.* California: California State Legislature.

State of California. (2017, June 27). *Fish and Game Code Section 1602.* Retrieved from California Legislative Information: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC&sectionNum=1602.

State Water Resource Control Board. (2017, October 17). Cannabis Cultivation Policy: Principles and Guidelines for Cannabis Cultivation. California.

Townsend's Long-Eared Bat. (2017, December 1). Retrieved from Northern California Bats Rescue and Education: http://norcalbats.org/2017/12/01/townsends-long-eared-bat/

Trinity County. (2016, October). *Urgency Ordinance No. 315-816.* Trinity County.

United States Fish and Wildlife Service. (2011-2012). Northern Spotted Owl Habitat Spatial Data. Retrieved June 2018

US Fish and Wildlife Service. (1973). *Endangered Species Act of 1973.* Retrieved from International Affairs: https://www.fws.gov/international/pdf/esa.pdf

USDA Forest Service. (2018). Spatial Data. Retrieved June 2018

Wagschal, A., Blevins, E., & Embree, L. (2017). *Dr. Fine Bridge Replacement Project: Western Pearlshell Mussel Impact Assessment.* Sacramento: California Department of Transportation.

Yuma Myotis. (2017, December 1). Retrieved from Northern California Bat Rescue and Education: http://norcalbats.org/2017/12/01/yuma-myotis/

Zeiner, D., Laudenslayer Jr., W., Mayer, K., & White, M. (1988-1990). *California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.*