ENVIRONMENTAL INITIAL STUDY

INITIAL STUDY CHECKLIST
PROPOSED MITIGATED NEGATIVE DECLARATION

Trinity County Type 3 Conditional Use Permit and Variance
Vital Green Future, LLC
Cannabis Cultivation Use Permit No.: CCUPT3-2019-021

Prepared by:

Trinity County
Department of Building & Planning
530 Main Street
Weaverville, CA 96093
(530) 623-1351

March 2022

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Trinity County
Environmental Checklist Form

1. **Project Title:** Trinity County Use Permit Type 3 Cannabis Cultivation and Variance Vital Green Future, LLC (Kahan), Application CCUPT3-19-21

2. **Lead Agency Name and Address**:

   Trinity County
   Department of Building & Planning
   530 Main Street
   Weaverville, CA 96093

3. **Contact Person and Phone Number:** Skylar Fisher, Planning Department, Cannabis Division (530) 623-1351

4. **Project Location:** The proposed project is located in Trinity County approximately 6 miles south of the community of Salyer, California. The project site is located at 5200 South Fork Road on Trinity County Assessor Parcel Number (APN) 008-080-032. The subject site is approximately 143.6 acres. Refer to Figure 1 – Project Location.

5. **Applicant's Name and Address:**
   Patrick Kahan
   5200 Southfork Road
   Salyer, CA 95563

6. **General Plan Designation:** Resource (RE)

7. **Zoning:** Timber Production Zone (TPZ)

8. **Description of Project:** The purpose of this project is to expand cannabis cultivation operations on the 143.6-acre project site as a permitted use under the County's cannabis ordinances. The applicant is currently licensed to cultivate up to 10,000 square feet (square feet) of cannabis canopy area (Type 2, Mixed-Light – Small) on the project site and the applicant is applying for an expansion to allow up to one-acre (43,560 square feet) of outdoor and/or mixed-light cannabis canopy area. To allow the expansion of up to one-acre of outdoor and/or mixed-light canopy, the applicant is applying for a Type 3 (Outdoor - Medium) license or multiple Type 2 (Mixed-Light - Small) licenses. The mixed-light cultivation activity would not require artificial lighting or additional electricity use. It is proposed to occur with the use of blackout tarps (light deprivation) to allow the applicant to have multiple harvests during the growing season.

   In addition to the cannabis cultivation, the project site is currently developed with a single-family residence, a septic system, a groundwater well, two surface water diversion points, a water storage pond, and six plastic water storage tanks. The site is also developed with a compost area, a shed for pesticide and agricultural chemical storage, several parking/equipment storage areas, and a shipping container used as a harvest storage area, administrative hold area, and processing area. The applicant has also applied for a variance as the proposed project does not comply with the required property setbacks. Refer to Appendix A - Project Figures and Site Plans.

9. **Surrounding Land Uses and Setting:** The project site is classified as part of the Resource (RE) land use designation of the County's General Plan, with a zoning designation of Timber Production Zone (TPZ). The parcels immediately surrounding the project are identified in the General Plan as part of the Resource (RE) land use designation and have either Unclassified (U) or Timber Production Zone (TPZ) zoning. Access to the site is provided via South Fork Road, an existing paved county-maintained road that runs through the property.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** Trinity County as Lead Agency for the proposed project has discretionary authority over the primary project proposal. To implement this project, the applicant may need to obtain, at a minimum, the following discretionary permits/approvals from other agencies:

- California Department of Fish and Wildlife (Region 1) – Lake and Streambed Alteration Agreement
- California Department of Food and Agriculture – Cannabis Cultivation Licenses
- State Water Resources Control Board – Cannabis General Order Waste Discharge Requirements (WDRs) or Waiver of WDRs
- Trinity County Building Department – Building Permit
- Trinity County Department of Environmental Health
- Trinity County Solid Waste

11. **Tribal Consultation:** Consultation and correspondence with various culturally affiliated Tribal groups and agencies were conducted as in accordance with Public Resources Code (PRC) Section 21080.3.1 (AB 52). On February 18, 2020, the County initiated environmental review under the California Environmental Quality Act (CEQA) for the proposed project. The County sent certified project notification letters to he Nor-Rel-Muk Nation, Wintu Tribe of Northern California, Wintu Educational and Cultural Council and the Redding Rancheria, on February 18, 2020, pursuant to PRC Section 21080.3.1, notifying that the project was under review and to provide the Tribes 30 days from the receipt of the letter to request consultation on the project in writing. No responses were received requesting initiation of consultation under the provisions of AB 52.

Note: *Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process (see PRC Section 21080.3.2.). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.*

Information contained in the Cultural Resources Investigation of the Salyer Kahan Property (ARS, 2020) related on the specific location of prehistoric and historic sites is confidential and exempt from the Freedom of Information Act (FOIA) and the California Public Records Act (CPRA); therefore, site specific cultural resource investigations are not attached to this Initial Study. Professionally qualified individuals, as determined by the California Office of Historic Preservation, may contact the Trinity County Planning Department directly in order to inquire about its availability.

12. **Purpose of this Document:** This document analyzes the environmental impacts of the development of the proposed use of Cannabis Cultivation of up to one-acre and makes appropriate findings in accordance with Section 15070 of the State CEQA Guidelines. In addition, this document has been prepared to the degree of specificity appropriate to the current proposed action, as required by Section 15146 of the State CEQA Guidelines. The analysis considers the actions associated with the proposed project to determine the short-term and long-term effects associated with their implementation.

Section 1 – Introduction and Purpose

1.1 Introduction

Trinity County (County), as the Lead Agency, has prepared this Initial Study to provide the general public and interested public agencies with information about the potential environmental impacts of the proposed Vital Green Future, LLC Cannabis Conditional Use Permit (CCUPPT3-2019-021) (proposed project). Details about the proposed project are included in Section 2.0, PROJECT DESCRIPTION, of this Initial Study. This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (as amended), codified in California Public Resources Code Section 21000 *et seq*., and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3). Pursuant to these regulations, this Initial Study identifies potentially significant impacts and, where applicable, includes mitigation measures that would reduce all identified environmental impacts to less than significant levels. Mitigation measures have been proposed to avoid or minimize any significant impacts that were identified. This Initial Study supports a MND pursuant to CEQA Guidelines Section 15070.

1.2 Lead Agency

The Lead Agency is "*the public agency which has the principal responsibility for carrying out or approving a project,*" which may be subject to CEQA (PRC Section 21067). Accordingly, the Trinity County is the CEQA Lead Agency.

1.3 Purpose of the Initial Study

CEQA requires that public agencies document and consider the potential environmental effects of the agency's actions that meet CEQA's definition of a "project." Briefly summarized, a "project" is an action that has the potential to result in direct or indirect physical changes in the environment. A project includes the agency's direct activities as well as activities that involve public agency approvals or funding. Guidelines for an agency's implementation of CEQA are found in the "CEQA Guidelines" (Title 14, Chapter 3 of the California Code of Regulations).

Provided that a project is not exempt from CEQA, the first step in the agency's consideration of its potential environmental effects is the preparation of an Initial Study. The purpose of an Initial Study is to determine whether the project would involve "significant" environmental effects, as defined by CEQA, and to describe feasible mitigation measures that would avoid significant effects or reduce them to a level that is less than significant. If the Initial Study does not identify significant effects, then the agency prepares a Negative Declaration. If the Initial Study notes significant effects but also identifies mitigation measures that would reduce these significant effects to a level that is less than significant, then the agency prepares a Mitigated Negative Declaration. If a project would involve significant effects that cannot be readily mitigated, then the agency must prepare an Environmental Impact Report. The agency may also decide to proceed directly with the preparation of an Environmental Impact Report without an Initial Study.

The proposed project is a "project" as defined by CEQA and is not exempt from CEQA consideration. The County has determined that the project may potentially have significant environmental effects and therefore would require preparation of an Initial Study. This Initial Study describes the proposed project and its environmental setting, discusses the potential environmental effects of the project, and identifies feasible mitigation measures that would eliminate any potentially significant environmental effects of the project or reduce them to a level that would be less than significant.

This Initial Study is a public information document that describes the proposed project, existing environmental setting at the project site, and potential environmental impacts of construction and operation of the proposed project. It is intended to inform the public and decision-makers of the proposed project's potential environmental impacts and to document the lead agency's compliance with CEQA and the State CEQA Guidelines.

This Initial Study concludes that the project would have potentially significant environmental effects, all of which would be avoided or reduced to a level that would be less than significant with recommended mitigation measures. The project applicant has accepted all the recommended mitigation measures. As a result, the County has prepared a Mitigated Negative Declaration and has issued a Notice of Intent to adopt the Mitigated Negative Declaration for the project. The time available for public comment on the Initial Study and Mitigated Negative Declaration is shown on the Notice of Intent.

1.4 Regulatory Background

State Regulatory Framework

Until 1996, the cultivation, use, and sale of cannabis (also known as marijuana) for any purpose was illegal in the State of California. In 1996, California voters approved Proposition 215, which allowed seriously ill Californians the right to obtain and use cannabis for medical purposes when recommended by a physician. In 2015, the State Legislature enacted the Medical Cannabis Regulation and Safety Act (MCRSA), which mandated a comprehensive State licensure and regulatory framework for cultivation, manufacturing, distribution, transportation, testing, and dispensing of medical cannabis on a commercial basis.

As the State was drafting regulations in compliance with MCRSA, California voters in 2016 approved Proposition 64, which legalized the use and possession of non-medicinal cannabis products within California by adults age 21 years and older. In June 2017, the State Legislature passed a budget trailer bill, Senate Bill (SB) 94, which repealed MCRSA and integrated its medicinal licensing requirements with Proposition 64 to create the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA). MAUCRSA provides the regulatory structure for commercial cannabis activities in California.

MAUCRSA designates applicable responsibilities for oversight of cannabis commerce in California to several State agencies. The Bureau of Cannabis Control (BCC) is the lead agency in regulating commercial cannabis licenses for retailers, distributors, testing labs, and microbusinesses involved with medical and adult-use cannabis. CalCannabis Cultivation Licensing, a division of the California Department of Food and Agriculture (CDFA), licenses and regulates commercial cannabis cultivators and manages the State's "track-and-trace" system that tracks cannabis and its products from cultivation to sale. The Manufactured Cannabis Safety Branch of the California Department of Public Health (CDPH) is responsible for regulation of commercial cannabis manufacturing. In accordance with MAUCRSA, all three agencies have adopted emergency regulations related to their respective responsibilities, and all three have drafted permanent regulations that are currently undergoing the State rulemaking process.

It is important to note that, although California allows medicinal and adult use, cannabis remains classified as a Schedule 1 controlled substance under the federal Controlled Substances Act of 1970. Individuals engaging in cultivation and other cannabis-related activities risk prosecution under federal law.

Local Regulatory Framework

Ordinance 315-823 (and associated amendments 315-829, 315-830, 315-841, and 315-843) regulates cannabis cultivation. The license grants provisional permission to cultivate cannabis in accordance with state law. The ordinance allows outdoor, mixed-light, and indoor cultivation under the following license types as defined in Section 315-843(3)(a)(i). The ordinance caps the total number of cannabis cultivation licenses at 530. The ordinance also identifies the following caps:

- "Specialty Cottage Outdoor" – for outdoor cultivation up to 25 mature plants.
- "Specialty Cottage Indoor" – for indoor cultivation with 500 square feet or less of total canopy.
- "Specialty Cottage Mixed-Light Tier 1 and 2" – for cultivation using mixed light (i.e., sunlight and artificial light) with 2,500 square feet or less of total canopy. "Tier 1" means the use of artificial light at a rate of six watts or less per square foot, and "Tier 2" means the use of artificial light at a rate greater than six watts but no greater than 25 watts per square foot.
- "Specialty Outdoor" – for outdoor cultivation less than or equal to 5,000 square feet of total canopy, or up to 50 mature plants on noncontiguous plots.
- "Specialty Mixed-Light Tier 1 and 2" – for cultivation using mixed light between 2,501 and 5,000 square feet of total canopy.
- "Small Outdoor" – for outdoor cultivation between 5,001 and 10,000 square feet of total canopy.
  "Small Mixed-Light Tier 1 and 2" – for cultivation using mixed light between 5,001 and 10,000 square feet of total canopy.
- "Medium Outdoor" – for outdoor cultivation between 10,001 square feet and one acre in total canopy.

1.5 Incorporation by Reference

In accordance with Section 15150 of the State CEQA Guidelines to reduce the size of the report, the following documents are hereby incorporated by reference into this Initial Study and are available for public review at the Trinity County Planning Department. A brief synopsis of the scope and content of each of these documents is provided below.

Trinity County General Plan

The Trinity County General Plan (General Plan) is a long-range planning guide for growth and development for the County. The General Plan serves two basic purposes: 1) to identify the goals for the future physical, social, and economic development of the County; and 2) to describe and identify policies and actions adopted to attain those goals. The General Plan is a comprehensive document that addresses seven (7) mandatory elements/ issues in accordance with State law. These elements include Land Use, Housing, Circulation, Conservation, Open Space, Noise, and Public Safety. Other issues that affect the County, including Public Facilities and Services, Recreation, and Economic Development are addressed on a local level in the Douglas City, Hayfork, Junction City, Lewiston, and Weaverville Community Plans. The County's General Plan was utilized throughout this Initial Study as the fundamental planning document governing development on the proposed project site. Background information and policy information from the General Plan is cited in several sections of this Initial Study.

Trinity County Zoning Ordinance

The Trinity County Ordinance No. 315 established a Zoning Plan in an effort to promote and protect public health. The Zoning Plan serves three (3) basic purposes: 1) to assist in providing a definite plan of development for the County, and to guide, control and regulate the future growth of the County, in accordance with said plan; 2) to protect the character and the social and economic stability of agricultural, residential, commercial, industrial, and other areas, within the County and to assure the orderly and beneficial development of such areas; and 3) to minimize harm to public safety resulting from the location of buildings, and the uses thereof, and of land adjacent to highways which are a part of the Circulation Element of the General Plan, or which are important thoroughfares, in such manner as to cause interference with existing or prospective traffic movement on said highways. The Zoning Plan specified and established designations, locations, and boundaries of zoning districts. The districts explicitly established permitted uses including building types, building heights, lot dimensions, yard dimensions, lot setbacks, lot coverage, allowable uses, density, and allowable accessory buildings and uses.

Trinity County currently regulates licensing of commercial cannabis cultivation in the unincorporated area of the county under Ordinance 315-823 (as modified by Ordinances 315-829, 315-830, 315-841, 315-843, and 315-849). These provisions are found in Chapter 17.43 of the Trinity County Code of Ordinances (County Code of Ordinances).

Licensed commercial operations are required to comply with the limitations on the location of cannabis cultivation and with performance standards that address noise; water supply; water quality; restrictions on the use and storage of fertilizers, pesticides, fungicides, rodenticides, and herbicides; and nighttime lighting restrictions. Licensed cultivation operations are also required to obtain state licensing (known as CalCannabis Cultivation Licensing) and comply with the requirements associated initially under the North Coast Regional Water Quality Control Board Order #2015-0023. This order has been superseded by the SWRCB Cannabis Cultivation Policy – Guidelines for Cannabis Cultivation, which includes Cannabis General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (Cannabis General Order); General Water Quality Certification for Cannabis Cultivation Activities; Cannabis Small Irrigation Use Registration; and Water Rights Permitting and Licensing Program. In addition, County ordinances are used to regulate the following commercial noncultivation cannabis uses:

- testing (Ordinance 315-824 [Chapter 17.43C of the County Code of Ordinances]),
- nurseries (Ordinances 315-826, 315-827, and 315-833 [Chapter 17.43A of the County Code of Ordinances]),
- distribution (Ordinances 315-828 and 315-834 [Chapter 17.43B of the County Code of Ordinances]),
- non-storefront retail (Ordinance 315-835 [Chapter 17.43C of the County Code of Ordinances]),
- microbusiness (Ordinance 315-837), and
- manufacturing (Ordinances 315-838 and 315-842).

On December 28, 2020, the Trinity County Board of Supervisors adopted Ordinance 315-849 (Chapter 17.43 of the County Code of Ordinances) related to implementing mitigation measures for the County's Commercial Cannabis Program.

Trinity County Cannabis Program EIR (SCH No. 2018122049)

In 2020, the Trinity County Board of Supervisors approved the Trinity County Cannabis Program (Cannabis Program) to regulate commercial cannabis operations in the unincorporated area of the county. The County prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2018122049) for the Cannabis Program that evaluated the environmental impacts associated with commercial cannabis operations based on the assumptions in the Cannabis Program.

The EIR was prepared at the program "first-tier" level of environmental review consistent with the requirements of California Environmental Quality Act (CEQA) Sections 15152 and 15168. The program-level analysis considered the broad environmental impacts of the overall Cannabis Program. The EIR acknowledged that subsequent projects/actions under the Cannabis Program would occur in multiple years and locations. As those projects/actions are proposed, such as the project, they are being evaluated to determine whether the entitlements/actions proposed fall within the scope of the approved EIR and incorporate all applicable performance standards and mitigation measures identified therein. Should the subsequent projects/actions not be consistent with the approved Cannabis Program, additional environmental review through the subsequent review provisions of CEQA for changes to previously-reviewed and approved projects may be warranted (CEQA Guidelines Sections 15162 through 15164).

The proposed project is subject to the Amended Cannabis Program Ordinance and consistency with the Cannabis Ordinance and Program EIR are discussed in relevant sections of this document. As discussed in this document, the project proposes cannabis activities that are consistent with the assumptions and analysis conducted in the EIR and it is not anticipated that any new significant impacts or substantially more severe impacts would occur from implementation of the proposed project. Therefore, the findings of the Cannabis Program EIR are relevant to the proposed project and, where applicable, project-specific analysis and studies are provided to supplement the analysis from the EIR.

1.6 Project Environmental Studies

As part of the preparation of this Initial Study, the following studies, which are included in Section 5 – TECHNICAL APPENDIX, were prepared or utilized to develop baseline information and project-related impact discussions. Hard copies of these studies are available for inspection at the Trinity County Planning Department, 61 Airport Road Weaverville, California 96093, during normal business hours (8:00 AM to 5:00 PM Monday through Friday).

- Biological Resource Assessment (PWA, 2021)
- Cultural Resources Investigation of the Salyer Kahan Property (ARS, 2020)
- Northern Spotted Owl (NSO) Habitat and Impact Assessment for Cannabis Operations for the Patrick Kahan Property (OBC, 2020)
- Site Management Plan Technical Report Order WQ 2019-0001-DWQ (PWA, 2020)

Information contained in the *Cultural Resources Investigation of the Salyer Kahan Property* (ARS, 2020) related on the specific location of prehistoric and historic sites is confidential and exempt from the Freedom of Information Act (FOIA) and the California Public Records Act (CPRA); therefore, this information is not included in Section 5 – TECHNICAL APPENDIX. Professionally qualified individuals, as determined by the California Office of Historic Preservation, may contact the Trinity County Planning Department directly to inquire about its availability.

1.7 Environmental Review Process

This Initial Study is being circulated for public and agency review as required by CEQA. Because State agencies will act as responsible or trustee agencies, the County will circulate the Initial Study to the State Clearinghouse of the Governor's Office of Planning and Research for distribution and a 30-day review period. During the review period, written comments may be submitted to:

Trinity County
Department of Building & Planning
530 Main Street
Weaverville, CA 96093

Skylar Fisher, Cannabis Division
sfisher@trinitycounty.org
(530) 623-1351

Section 2 – Project Description

2.1 Project Location and Setting

Regional Setting

The project area lies within Trinity County, California near the western border with a portion of the property falling in Humboldt County. This region is at the junction of the uplifted Coast Ranges, the volcanic Cascades, and the ancient volcanic roots of the Sierra Nevada. The Trinity Basin is characterized by cold, wet winters and dry summers. The Trinity watershed drains into the Klamath River, which empties into the Pacific Ocean west of Trinity County. Several plant communities are present in the region, including Klamath mixed conifer, foothill pine (gray pine), mixed chaparral, montane hardwood, montane riparian, and riverine flora. In general, the growing season ranges from March 1 to October 31, but may be as short as mid-June through early September in some areas. Most herbaceous growth occurs during a relatively short period in late spring, ceasing as soil moisture depletes in early summer.

Local Setting

The proposed project is located adjacent to the South Fork Trinity River which is a tributary of the Trinity River watershed. The Project is located in Trinity County approximately 6 miles south of the community of Salyer. The proposed project property does not fall within a Federal Emergency Management Area (FEMA) floodplain. Historical onsite activities included timber harvesting activities.

Project Location

The proposed project is located within Trinity County, south of the town of Salyer at 5200 South Fork Road (Assessor Parcel Number [APN] 008-080-032). The subject parcel is approximately 143.6 acres in size. The parcels immediately surrounding the project are designated by the County's General Plan as Resource (RE) and are zoned as Timber Production Zone (TPZ) and Unclassified (U). Primary site access is provided via South Fork road via State Route 299 (SR-299). The site is identified on the Hennessy Peak USGS quadrangle map, Section 30, Township 6 North, Range 5 East, Humboldt Base Meridian (HBM). The location of the proposed project is shown on Figure 1 (Project Location) and Figures 2 and 3 (Appendix A - Project Site Plans).

Existing Conditions

The land encompassing the project area has been historically used for timber harvest; the existing parcel is the result of a subdivision of parcels in 2011. The 143.6-acre parcel falls under the Resource (RE) General Plan designation, with a zoning designation of Timber Production Zone (TPZ). The site is surrounded by largely undeveloped land.

The project site is currently developed with a single-family residence, a septic system, a groundwater well, two surface water diversion points, a water storage pond, six plastic water storage tanks, and cannabis cultivation activities (Type 2: Mixed-Light – Small). The existing cannabis cultivation includes 10,000 square feet of "outdoor" flowering canopy grown in greenhouses and outdoors, and 1,500 square feet of immature plant area. Existing cultivation activity does not require artificial lighting or additional electricity use. It occurs with the use of blackout tarps (light deprivation) to allow the applicant to have multiple harvests during the growing season. The site is also developed with a compost area, a shed for pesticide and agricultural chemical storage, several parking/equipment storage areas, and a shipping container used as a harvest storage area, administrative hold area, and processing area.

The existing septic system consists of a 1,500-gallon concrete tank with five 50-foot-long high-capacity leach field chambers. Water is provided to the site by the groundwater well and two permitted surface water diversion points from an unnamed Class II tributary to the South Fork Trinity River (see Figures 2 and 3 in Appendix A). Water is then stored in six onsite plastic water storage tanks (16,500 gallons total) and an existing pond (275,000 gallons). Power is provided by the Pacific Gas and Electric Company (PG&E) and supplemented by solar power to run fans and two existing emergency backup generators (EU2000i 2,000-watt portable generators with inverter).

2.2 Proposed Uses

The applicant is currently licensed to cultivate up to 10,000 square feet of cannabis canopy on the project site (Type 2: Mixed-Light – Small) and the applicant is applying for an expansion to allow up to one-acre (43,560 square feet) of outdoor and/or mixed light cannabis canopy area. The purpose of this project is to expand cannabis cultivation operations onsite as a permitted use under the County's cannabis ordinances (see *Proposed Operations*, below).

The proposed project includes expansion of cultivation to up to one-acre (43,560 square feet) of outdoor and/or mixed-light cannabis canopy under a Type 3 (Outdoor – Medium) or multiple Type 2 (Mixed-Light – Small) licenses. The mixed-light cultivation activity would not require artificial lighting or additional electricity use. It is proposed to occur with the use of blackout tarps (light deprivation) to allow the applicant to have multiple harvests during the growing season.

The project, as proposed, meets the requirements for uses compatible within the Resource (RE) General Plan designation and is consistent with the Timber Production Zone (TPZ) zoning as the applicant is an approved Phase I applicant, as defined by the County Code. The proposed project would not alter existing activities at the residence.

Related Zoning

As mentioned above, the subject property has been zoned by the County as Timber Production Zone (TPZ) and allows for agricultural use by a qualified Phase I applicant (Section 17.43.050.A.iv of the County Code). A Phase I applicant is defined as persons or entities who completed enrollment in the NCRWQB Order #2015-0023 by August 1, 2016. Therefore, the proposed uses, as described by the applicant and evaluated in this document, are consistent with the uses allowed for TPZ zoned lands. The applicant was granted a Less Than Three Acre Conversion for the project site in 2017.

Variance Request (CCV-19-16). The proposed project has also applied for a Variance (CCV-19-16) from Section 17.43.050.A.8 of the County Code, which requires a 500-foot setback from the property line for a medium cannabis cultivation site (see Figures 2 and 3 in Appendix A). As a condition of approval of the use permit, the variance must be approved before the applicant can proceed with cultivation in the proposed cultivation area requiring the variance. The purpose of the 500-foot property line setback requirement provision in Trinity County Code Section 17.43.050.A.8. is to mitigate potential impacts (e.g., odors, noise, lighting, fugitive dust, etc.) to adjacent neighbors from cannabis cultivation activities.

The project site is surrounded by vacant undeveloped land and there are no structures or sensitive receptors immediately adjacent to the site. The nearest sensitive receptor (residence) is located 215 from the property line and over 800 feet from the nearest proposed cultivation area. The basis for the variance request is that due to the narrow and steep aspects of the property, the roads and canopy areas are within the required setback. Given the existing site constraints, this location and the granting of a Variance CCV-19-16 is considered environmentally superior to following the strict guidelines of the 1-acre cultivation setbacks. It is important to note that upon issuance of a variance by the County, the variance is evaluated on an annual basis. Should impacts such as odors, noise, lighting, and fugitive dust from the project become an issue, the County could terminate the variance approval and require relocation of the cultivation activity subject to the variance.

Proposed Operations

The proposed project will expand existing onsite activities through the addition of outdoor cultivation in several locations increasing the total flowering canopy cultivation area to 43,560 square feet. The project also proposes a 1,500-square foot barn (30-foot by 50-foot for general storage non-cultivation use), a 1,200-square foot shop (30-foot by 40-foot to be used for processing and immature plant area), a 320-square foot shipping container (8-foot by 40-foot to be used for processing, harvest storage, and administrative hold area), a 320-square foot shipping container (8-foot by 40-foot to be used for immature plant area), a solar array, an additional 1,000,000 gallon water storage pond, and eight additional 5,000-gallon plastic water storage tanks (see Figures 2 and 3 in Appendix A).

The proposed expansion would employ a maximum of nine (9) employees (some permanent and some seasonal) each year. The applicant proposes to use the local labor force within the County, and employees will commute to the site each day. The hours of operation will fall between 7:00 AM and 10:00 PM, following the noise level standards set forth in Section 17.43.060.B of the County Code.

Site Access

The subject property's main access is provided by South Fork Road, an existing paved county-maintained road that runs through the property. South Fork Road is accessed from SR- 299, north of the property near the community of Salyer. Existing private roads provide access across the project Site (see Figures 2 and 3 in Appendix A). No new roadway encroachments or new roadways are required for the implementation of the proposed project. Road access is anticipated to consist of passenger cars, light-duty trucks, delivery vehicles (FedEx™, UPS™, and US Postal Service), and larger dual axle delivery vans. Applicant anticipates that 3-axle trucks will occasionally access the property.

Water Supply and Water Use

As mentioned above, water is provided to the site by an existing 85-foot-deep groundwater well (Well Completion Report 1092844; Diamond Core Drilling, 2005) and two surface water gravity diversion points from an unnamed Class II tributary to the South Fork Trinity River (see Figures 2 and 3 in Appendix A). The Well Completion Report estimated the yield of the groundwater well to be 8 gallons per minute (GPM). A Lake and Streambed Alteration Agreement (LSAA; Notification No. 1600-2016-0019-R1) was obtained for the surface water diversions from California Fish and Wildlife (CDFW) in 2016, and another LSAA notification has been submitted to CDFW for ongoing operation of the diversions (EPIMS-TRI-22558-R1I). A Draft LSAA for ongoing operation of the diversions is pending. The 2016 LSAA specifies that the stream diversion rate from both points of diversion combined shall not exceed 6 GPM. This condition applies cumulatively to both points of diversion because they are located on the same Class II stream. The 2016 LSAA also limits surface water diversion to no more than 200 gallons per day from June 15 to October 15 of each year.

The applicant has provided a Right to Divert and Use Water certificate from State Water Resources Control Board Division of Water Rights (DWR) that applies to both points of diversion for irrigation and fire protection (small irrigation use appropriation; Certificate H100201) dated July 13, 2018. The applicant has also provided Reports of Registrant for water use in 2019 and 2020 (Certificate Number 100202). The applicant filed a Water Resource Protection Plan (WRPP) for the proposed project, outlining best management practices (BMPs) for existing water usage.

Water is to be stored in 6 existing onsite plastic water tanks (totaling 16,500 gallons) and an existing pond (275,000 gallons), plus a proposed 8 additional 5,000-gallon plastic water tanks and one additional proposed 1,000,000-gallon pond for a total proposed water storage of 1,331,500 gallons. From the storage tanks and ponds, water is to be gravity-fed through buried PVC water lines. Water lines will not cross any jurisdictional water features or drainages. The water supply will serve proposed cannabis cultivation activities as well as potential fire suppression efforts. Table 1 summarizes proposed water use by source each month. The water used for cannabis cultivation is all from storage and the groundwater well (total ~650,000 gallons per year). The water used for the residence is all from surface water (total 43,200 gallons per year). Based on the estimated water use and existing and proposed storage, there will be more than sufficient water supply for the proposed cultivation activity.

Table 1
Estimated Water Use (gallons)

Month	Storage	Groundwater Well	Surface Water	Total
January	0	0	0	0
February	0	0	0	0
March	0	0	4,800	4,800
April	0	0	4,800	4,800
May	0	56,000	4,800	60,800
June	0	114,000	4,800	118,800
July	0	116,000	4,800	120,800
August	106,000	30,000	4,800	140,800
September	110,000	30,000	4,800	144,800
October	54,000	30,000	4,800	88,800
November	0	4,000	4,800	8,800
December	0	0	0	0
Annual Total by Source	***270,000***	***380,000***	***43,200***	***693,200***
Total Water Use	**693,200**			

The Trinity County Fire Safe Ordinance 1162 requires buildings created and/or approved after January 1, 1992 to provide a minimum 2,500-gallon water tank. As discussed above, the proposed project includes 14 water tanks as well as two ponds, which can be utilized for fire suppression purposes.

Domestic Wastewater Discharge

As mentioned above, the site maintains an existing permitted septic system, installed in December 2017, consisting of a 1,500-gallon concrete tank with five 50-foot-long high-capacity leach field chambers. This system which was designed for the existing 3-bedroom residence would continue to serve the subject property treating typical residential wastewater from the residence and daily workers. The proposed expansion would employ a maximum of nine (9) employees (some permanent and some seasonal) each year. If the number of employees will exceed the design capacity of the septic system, portable toilet(s) will be brought onsite.

Water Quality

Impacts to water quality associated with the existing cannabis cultivation activities at the project site were initially regulated by the North Coast Regional Water Quality Control Board (NCRWQCB) under Order No. 2015-0023 and were required to transition to regulations of the State Water Resources Control Board (SWRCB) Order No. WQ 2019-0001-DWQ (previously WQ 2017-0023-DWQ) by July 1, 2019. Additionally, the Cannabis Ordinances developed by the County identifies specific requirements for water use and water quality, including compliance with Senate Bill 94 (SB 94) and any applicable NCRWQCB or SWRCB regulations. These existing regulatory requirements address implementation of all applicable best practicable treatment or control (BPTC) measures. In addition, the proposed project obtained a Water Resource Protection Plan (WRPP) which outlines best management practices (BMPs) to prevent, minimize, and control the discharge of waste and other controllable water quality factors associated with site restoration/cleanup/remediation and site operations and maintenance. Also, the Site Management Plan Technical Report (PWA, 2020) for the project describes how the applicant is implementing the Best Practicable Treatment or Control (BPTC) measures listed in Attachment A of the State Water Resource Control Board's Cannabis Cultivation Policy. Refer to Appendix D – Site Management Plan Technical Report.

Power Generation

The site is currently provided power from Pacific Gas & Electric (PG&E), onsite solar, and generators for backup power only. Existing PG&E infrastructure onsite requires no extension of utility lines or systems. There are currently two (2) generators at the project site; no additional generators are proposed. The 2 existing portable EU 2000i generators are approximately 2,000 watts with inverters, which is equivalent to 2.7 HP (horsepower). These generators have the approximate sound level (Full load) of 48-57 dB(A) at 100 feet. Each generator will be located within a covered structure offering secondary containment and further dampening noise levels from operation. Generator use will require compliance with California Department of Food and Agriculture (CDFA) and Trinity County regulations that impose limitations on generator use. For example, the proposed project must be consistent with performance standards in Section 17.43.060.B of the County Code, which requires proposed cannabis operations to comply with the noise level standards set forth in the County General Plan (55 dBA from 7:00 AM to 7:00 PM, and 50 dBA from 7:00 PM to 7:00 AM) measured at the property line, except that generators associated with a commercial grow are not to be used between 10:00 PM and 7:00 AM.

Security Lighting

Pursuant to 3 CCR Section 8304(c), all outdoor lighting used for security purposes would be shielded and downward facing. The proposed project would also be required to comply with the County Cannabis Cultivation ordinance (Ordinance No. 315-823 and amendments), which requires that the light generated by the proposed project meet the following requirement: 1) lighting shall be downcast, shielded and/or screened to keep light from emanating offsite or into the sky, and (2) lighting in greenhouses shall be shielded so that little to no light escapes, and light shall not escape at a level that is visible from neighboring properties between sunset and sunrise (Trinity County, 2018). No light will be generated from the proposed cultivation activity because the applicant is not proposing to use artificial lighting for cultivation. As discussed above, the proposed mixed-light cultivation would occur with the use of blackout tarps (light deprivation) to allow the applicant to have multiple harvests during the growing season.

Biological Resources

The project site comprises 143.6 acres to the east of the South Fork Trinity River. The project is situated on lands that have been previously disturbed by timber harvest and are currently used for a single-family residence and cannabis production, as well as appurtenant structures and related uses. The project is located on private property surrounded by minimal development. The forested habitat on the property is classified as Pacific Douglas Fir forest and the open cultivation site consists of annual and perennial grasslands. There are two waterways located on the property, a Class II and Class III tributaries to the South Fork Trinity River. The Trinity County Cannabis EIR has established the minimum riparian setbacks for all cannabis activities around riparian areas as follows: Class I perennial watercourses: 150 feet; Class II ephemeral watercourses: 100 feet; and Class III intermittent watercourses: 50 feet (Trinity County, 2020). The proposed project is compliant with the required setbacks. The proposed project does not involve the construction of any stream crossings, surface water diversions, or any ground-disturbing activities around riparian habitats. No jurisdictional wetlands meeting the Army Corps three-parameter criteria have been observed in the areas proposed for development on the project site.

A Biological Assessment Report was prepared for the project by the applicant's consultant, Pacific Watershed Associates (PWA) (see Appendix B), which analyzes the potential impacts to special-status animal and plant species from the proposed expansion of cannabis cultivation on the site. The Biological Assessment concludes that with the implementation of the recommended avoidance and minimization measures, impacts to special-status plant and animal species would be reduced to less than significant levels. Additionally, a Northern Spotted Owl (NSO) Habitat Assessment was prepared for the project by O'Brien Biological Consultants (see Appendix C), This report found largely unsuitable nesting habitat for NSO and determined that the proposed project activities were unlikely to result in significant impacts on the NSO.

Documentation and References

PWA (Pacific Watershed Associates). 2021. *Biological Resource Assessment for 5200 Lower South Fork Road*. October 2021.

PWA. 2020. *Site Management Plan Technical Report Order WQ 2019-0001-DWQ for APN 008-080-32*. March 2020.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1988. *General Plan – Land Use Element.* 1988.

Section 3 – Environmental Impacts and Mitigation Measures

This chapter provides an evaluation of the potential environmental impacts of CCUPT3-2019-021 located in Trinity County, as well as the CEQA Mandatory Findings of Significance. A discussion of cumulative impacts is also included at the end of this chapter. The issue areas evaluated in this Initial Study include:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology & Soils
- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
- Mineral Resources
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities & Service Systems
- Wildfire

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the State CEQA Guidelines and used by the County in its environmental review process. This checklist has been updated with the revisions of the January 1, 2019 State CEQA Guidelines. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the proposed project's impacts and identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- **No Impact.** The development will not have any measurable impact on the environment.

- **Less Than Significant Impact.** The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.

- **Potentially Significant Impact Unless Mitigation Incorporated.** The development will have the potential to generate impacts which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.

- **Potentially Significant Impact.** The development will have impacts which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

All answers must take into account the whole action involved, including potential off and onsite, indirect, direct, construction, and operation, except as provided for under State CEQA Guidelines Section 15183 and State CEQA Statute Section 21083. The setting discussion under each resource section in this chapter is followed by a discussion of impacts and applicable mitigation measures.

This Initial Study identifies several potentially significant environmental effects related to the proposed project. Some effects are mitigated by implementation of existing provisions of law and standards of practice related to environmental protection. Such provisions are considered in the environmental impact analysis, and the degree to which they would reduce potential environmental effects is discussed. Additional mitigation measures are specifically identified when necessary, to avoid potential environmental effects or to reduce them to a level that is less than significant.

I. **AESTHETICS**: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Environmental Setting

The project site is surrounded by resource lands that have significant vegetative screening and topographic relief that shields the site from many offsite views, and is not adjacent to any historic sites (Trinity County, 2022). The existing built environment in the vicinity of the proposed project includes both public and privately maintained access roads, scattered residential buildings, but is primarily land owned by the United States Forest Service (USFS).

Scenic vistas are defined as expansive views of highly valued landscapes from publicly accessible viewpoints. Scenic vistas include views of natural features such as topography, water courses, outcrops, and natural vegetation, as well as man-made scenic structures. The County has not designated specific scenic vistas in the immediate project area as a part of the General Plan.

California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. According to Caltrans' California Scenic Highway Program and the National Scenic Byways Program, the proposed project is not located near a highway which has been listed as a State or federal Scenic Highway or as an Eligible State Scenic Highway-Not Officially Designated (Caltrans, 2022). Additionally, the project is not located on a National Scenic Byway System route; however, the South Fork Trinity River is designated as a Wild and Scenic River (NWSRS, 2022).

Impact Analysis

The following includes an analysis of environmental parameters related to *Aesthetics* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) There are limited views of the site from South Fork Road, and the development is consistent with current uses. The development of the proposed project is expected to be viewed as a continuation of the existing development on the site. Though the South Fork Trinity River is designated as a Wild and Scenic River, the majority of the proposed project would occur on the opposite side of South Fork Road and not significantly affect the views of the river. The proposed project would also be required to comply with the County Cannabis Cultivation ordinance (Ordinance No. 315-823 and amendments), which includes performance standards related to site maintenance and visual screening requirements. Impacts would be less than significant in this regard.

b) As discussed under the aesthetic setting above, there are no listed scenic highways in Trinity County. Sections of State Route 299 (SR-299) are all eligible State Scenic Highways, but none have been officially designated by the County. As proposed, the project would not damage any natural resources and the development of any related structures would not significantly change the visual character of the area. Therefore, there would be no impact in this regard.

c) Implementation of the proposed project would not have any short- or long-term visual effects on the immediate area surrounding the project site, because the areas of proposed development would occur on previously disturbed areas. The project does not propose to add significant new above-ground structures, and those that are constructed are not expected to change the visual character or quality of the site as it will be consistent with other existing structures at these locations. As described above under subsection I.a, the proposed project would also be required to comply with the County Cannabis Cultivation ordinance (Ordinance No. 315-823 and amendments), which includes performance standards related to site maintenance and visual screening requirements. Impacts would be less than significant in this regard.

d) Light pollution occurs when nighttime views of the stars and sky are diminished by an over-abundance of light coming from the ground. Light pollution is a potential impact from the operation of any light source at night. Proper light shields, lighting design, and landscaping are commonly used to reduce light pollution generated from lighting by blocking the conveyance of light upwards. The result is that the lights are not visible from above; therefore, ambient light is not added to the nighttime sky. In addition, light reflecting off surfaces during daylight hours has the potential to create a source of glare in the vicinity of the proposed project.

The proposed project currently utilizes outdoor lighting for security purposes. These sources of light are limited and do not generate large amounts of light either on or offsite. Similar lighting would be used in the additional areas proposed for cultivation by this application. Pursuant to 3 CCR Section 8304(c), all outdoor lighting used for security purposes would be shielded and downward facing. The proposed project would also be required to comply with the County Cannabis Cultivation ordinance (Ordinance No. 315-823 and amendments), which requires that the light generated by the proposed project would meet the following requirements: 1) downcast, shielded and/or screened to keep light from emanating offsite or into the sky, and (2) light uses for operations require that lighting in greenhouses is shielded so that little to no light escapes, and light shall not escape at a level that is visible from neighboring properties between sunset and sunrise. No light will be generated from the proposed cultivation site because the project will not use artificial lights on the cultivation site at any time. The proposed mixed-light cultivation would occur with the use of blackout tarps (light deprivation) to allow the applicant to have multiple harvests during the growing season

After evaluation of the proposed project, and the potential for impacts due to new lighting sources, the implementation of the standard requirements of the County's General Plan and Cannabis Cultivation Ordinance provide a uniform standard for reduction and minimization of light trespass. With adherence to applicable General Plan policies and provisions of the Cannabis Cultivation Ordinance, impacts related to light pollution and glare impacts would be less than significant.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation, impacts associated with *Aesthetics* resources were found to be less than significant.

Documentation and References

Caltrans (California Department of Transportation). *California Scenic Highway System*. 2022. [Online]: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed February 5, 2022.

NSBP (National Scenic Byways Program). 2022. [Online]: fhwa.dot.gov/byways/states/CA. Accessed February 5, 2022.

NWSRS (National Wild and Scenic Rivers System). 2022. [Online]: https://www.rivers.gov/california.php. Accessed February 5, 2022.

PWA (Pacific Watershed Associates). 2021. *Biological Resource Assessment for 5200 Lower South Fork Road*. October 2021.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1988. *General Plan – Land Use Element.* 1988.

Trinity County. 1973. *General Plan – Open Space and Conservation Element*. April 1973.

Trinity County. 2022. *Trinity County Parcel Viewer.* [Online]: http://trinitycounty.maps.arcgis.com/apps/Viewer/index.html?appid=320cf1c1558c43c8b1f2f70c23d35026. Accessed: February 5, 2022.

II. AGRICULTURE AND FORESTRY RESOURCES: *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural, Land Evaluation and Site Assessment Mode (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:*	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?				**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			**X**	
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				**X**

Environmental Setting

The parcel falls under the Resource (RE) General Plan designation, with a zoning designation of Timber Production Zone (TPZ). The General Plan describes the RE designation as areas that should be used single-family dwellings, small scale agricultural uses, small scale farming, public stables, campgrounds, or public or quasi-public uses. Existing onsite uses include a single-family residence as well as small scale cannabis cultivation. The current use of the project site includes up to 10,000 square feet of cannabis cultivation and related infrastructure (e.g., groundwater well, water storage and distribution system, septic system, etc.).

Impact Analysis

The following includes an analysis of environmental parameters related to *Agricultural Resources* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) Prime Farmland within Trinity County has not yet been mapped by the California Department of Conservation's Important Farmland Series Mapping and Monitoring Program (DOC, 2022). In addition, according to NRCS, soils contained within the project site are not considered Prime Farmland (NRCS, 2022). The project site has been historically used for resource extraction (timber harvest) and has some existing cannabis cultivation. The proposed project site possesses soils that are considered "not prime" for agricultural production according to the California Department of Conservation. Based on the above, development Impacts related to the conversion of prime, unique, or important farmland would not occur. No impact would occur in this regard.

b) The proposed project site is not currently zoned for agricultural uses or under a Williamson Act contract. Therefore, project implementation would not result in conflicts with existing agricultural zoning. No impact would occur in this regard.

c) The proposed project is zoned as Timberland Production Zone (TPZ). Government Code Section 51104(g) defines "timberland production zone" as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. According to current Trinity County Cannabis Ordinance No. 315-823, cannabis production on TPZ lands is allowable for qualifying Phase I applicants, defined as persons or entities who completed enrollment in the NCRWQCB Order #2015-0023 in reference to a Trinity County-based operation by August 1, 2016. As the applicant for the proposed project on

this site is a qualifying Phase I applicant, implementation of the proposed project would be compliant with County Ordinances. Impacts are considered less than significant in this regard.

d) The project site was used for timber production in the past and is currently being used for cannabis cultivation. Although the proposed project would expand the cannabis operation on the project site, it would not result in the loss of forest land and would only develop a small portion of the site for agricultural-related uses. Implementation of the proposed project would not result in a loss of forest land or a conversion of forest land to non-forest use. No impact would occur in this regard.

e) Implementation of the proposed project would not result in a conversion of farmland to non-farmland or forest land to non-forest use. Although the proposed project would expand the cannabis operation on the project site, it would not result in the loss of farmland or forest land, since it would only develop a small portion of the site for agricultural-related uses. The County has designated the area as Resource (RE), which allows for agricultural production. Developing the property for uses consistent with the County General Plan would not result in the conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur in this regard.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Agricultural Resources* were found to be less than significant.

Documentation and References

DOC (California Department of Conservation). 2022. Farmland Mapping and Monitoring Program. [Online]: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed February 4, 2022.

NRCS (Natural Resource Conservation Service). 2022. *Web Soil Survey.* [Online]: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed February 4, 2022.

PWA (Pacific Watershed Associates). 2021. *Biological Resource Assessment for 5200 Lower South Fork Road*. October 2021.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1973. *General Plan – Open Space and Conservation Element*. April 1973.

III. **AIR QUALITY:** *Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?			X	

Environmental Setting

The project is located in Trinity County, which is a part of the North Coast Air Basin (NCAB). The NCAB extends for 250 miles from Sonoma County in the south to the Oregon border. The climate of NCAB is influenced by two major topographic units: the Klamath Mountains and the Coast Range provinces. The climate is moderate with the predominant weather factor being moist air masses from the ocean. Average annual rainfall in the area is approximately 50 to 60 inches with the majority falling between October and April. Predominate wind direction is typically from the northwest during summer months and from the southwest during winter storm events.

Project activities are subject to the authority of the North Coast Unified Air Quality Management District (NCUAQMD) and the California Air Resources Board (CARB). The NCUAQMD is listed as "attainment" or "unclassified" for all the federal and state ambient air quality in Trinity County. The only exception is for 24-hour particulate (PM10) standards in Humboldt County (which is not a part of the project area) (NCUAQMD, 2022). Due to the large size of the NCUAQMD, it is well understood that particulate matter can travel from other areas into Humboldt County (such as from Trinity County) and affect air quality. In the NCUAQMD, particulate matter has been determined to be primarily from vehicles, with the largest source of fugitive emissions from vehicular traffic on unpaved roads.

In determining whether a project has significant air quality impacts on the environment, agencies often apply their local air district's thresholds of significance to project in the review process. The District has not formally adopted specific significance thresholds, but rather utilizes the Best Available Control Technology (BACT) emissions rates for stationary sources as defined and listed in the NCUAQMD Rule and Regulations, Rule 110 – New Source Review (NSR) and Prevention of Significant Deterioration (PSD), Section 5.1 – BACT (pages 8-9) (NCUAQMD, 2022).

Sensitive receptors (e.g., children, senior citizens, and acutely or chronically ill people) are more susceptible to the effect of air pollution than the general population. Land uses that are considered sensitive receptors typically include residences, schools, parks, childcare centers, hospitals, convalescent homes, and retirement homes. The nearest sensitive receptors to the project site are tenants of a single-family residence on an adjacent parcel (more than 800 feet from the nearest cultivation area).

Criteria air pollution and toxic air contaminants are regulated by the NCUAQMD, CARB, and the Environmental Protection Agency (EPA). Exposure to criteria air pollutants and toxic air contaminants can cause myriad adverse health effects in humans. Human health effects of criteria air pollutants are summarized below in Table 2.

Naturally Occurring Asbestos (NOA) was identified as a Toxic Air Contaminant (TAC) in 1986 by the California Air Resources Board (CARB). NOA is located in many parts of California, and is commonly associated with ultramafic rocks, according to a special publication by the California Geological Survey (Churchill and Hill, 2000). Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks, along their boundaries, or in the soil. According to the report, A General Location Guide to Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos, there are areas of Trinity County in which asbestos is likely to occur (Churchill and Hill, 2000). According to the mapping in this report, the project site is not in an area likely to contains asbestos.

Table 2
Criteria Air Pollutants – Summary of Common Sources and Effects

Pollutant	Major Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust (CAPCOA, 2022).	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death (CAPCOA, 2022).
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel (CAPCOA, 2022).	A respiratory irritant; aggravates lung and heart problems. A precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere (CAPCOA, 2022).
Ozone (O_3)	A colorless or bluish gas (smog) formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (NO_x) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills (CAPCOA, 2022).	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield (CAPCOA, 2022).
Particulate Matter (PM_{10} & $PM_{2.5}$)	Produced by power plants, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others (CAPCOA, 2022).	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; non-fatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (CAPCOA, 2022).
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships (CAPCOA, 2022).	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain (CAPCOA, 2022).
Hydrogen Sulfide (H_2S)	A colorless gas with the odor of rotten eggs. The most common sources of H_2S emissions are oil and natural gas extraction and processing, and natural emissions from geothermal fields. It is also formed during bacterial decomposition of human and animal wastes and is present in emissions from sewage treatment facilities and landfills. Industrial sources include petrochemical plants, coke oven plants, and kraft paper mills (CARB, 2022a).	Can induce tearing of the eyes and symptoms related to overstimulation of the sense of smell, including headache, nausea, or vomiting. A few studies suggest that asthmatics may be at increased risk of exacerbation of their asthma symptoms (CARB, 2022a).
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron, and steel producers, use of leaded fuels by racing and aircraft industries (CARB, 2022b).	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems (CARB, 2022b).
Sulfate	A sub-fraction of ambient particulate matter. Emissions of sulfur-containing compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. A small amount of sulfate is directly emitted from combustion of sulfur-containing fuels, but most ambient sulfate is formed in the atmosphere (CARB, 2022c).	Much like health effects of $PM_{2.5}$, sulfate can cause reduced lung function, aggravated asthmatic symptoms, and increased risk of emergency department visits, hospitalizations, and death in people who have chronic heart or lung diseases (CARB, 2022c).
Vinyl Chloride	A colorless gas with a mild, sweet odor. Most vinyl chloride is used in the process of making polyvinyl chloride (PVC) plastic and vinyl products, thus may be emitted from industrial processes. Vinyl chloride has been detected near landfills, sewage treatment plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents (CARB, 2022d).	Short-term exposure to high levels (10 ppm or above) of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches. The primary non-cancer health effect of long-term exposure to vinyl chloride through inhalation or oral exposure is liver damage. Inhalation exposure to vinyl chloride has been shown to increase the risk of angiosarcoma, a rare form of liver cancer in humans (CARB, 2022d).
Visibility Reducing Particles	These particles vary greatly in shape, size, and chemical composition, and come from a variety of natural and manmade sources. Some haze-causing particles are directly emitted to the air such as windblown dust and soot. Others are formed in the air from the chemical transformation of gaseous pollutants (e.g., sulfates, nitrates, organic carbon particles) which are the major constituents of fine PM. These fine particles, caused largely by combustion of fuel, can travel hundreds of miles causing visibility impairment (CARB, 2022e).	Haze not only impacts visibility, but some haze-causing pollutants have been linked to serious health problems and environmental damage as well. Exposure to particles up to 2.5 ($PM_{2.5}$) and 10 microns (PM_{10}) in diameter in the ambient air can contribute to a broad range of adverse health effects, including premature death, hospitalizations and emergency department visits for worsened heart and lung diseases (CARB, 2022e).

The closest area known to contain asbestos is several miles to the southeast of the project site. Pursuant to NCUAQMD regulations, all construction, grading, quarrying, and surface mining operations must notify NCUAQMD. These activities must comply with CARB's Airborne Toxic Control Measures for naturally occurring asbestos (NOA), as well as NCUAQMD's Rule 401, "Asbestos Fee," which covers the cost of implementing NOA control programs. Based on the location of the project and the regulations of the NCUAQMD, the project would result in less than significant impacts from the release of NOA during construction activities such as site preparation and grading.

Impact Analysis

The following includes an analysis of environmental parameters related to *Air Quality* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a-b) Since Trinity County is designated as "attainment" or "unclassified" for all federal and state air quality standards, the project is not subject to an air quality plan. The NCUAQMD prepared a Draft Particulate Matter Attainment Plan in May 1995, which is only applicable to portions of the District which are nonattainment for PM_{10} (e.g., Humboldt County).

Construction activities proposed by the project may create minor amounts of fugitive dust from construction of greenhouses, raised garden beds, and the proposed dwelling, but these activities are considered minor activities and would not create dust emissions that would require specialized abatement practices. Vehicle use in the vicinity of the project, as well as at the cultivation areas, would be on unpaved roads that can generate dust emissions. Vehicle/truck trips during operation of the project are estimated to be approximately 40 trips daily. Vehicle traffic associated with the project is not expected to generate dust emissions that would cause a substantial increase in PM_{10} within the surrounding area, Trinity County, or the NCUAQMD. Expansion of an existing cannabis cultivation operation within the community of Salyer is not anticipated to result in a significant increase in vehicle miles traveled (see Section XVII – TRANSPORTATION) and associated vehicular exhaust emissions.

The project proposes to use two (2) existing portable 2,000-watt generators for backup electricity, while the majority of power would be provided by Pacific Gas and Electric (PG&E). All generators used would follow the California Air Resources Board (CARB) threshold for participation in the Portable Equipment Registration Program (PERP). The purposed of the PERP program is to reduce diesel particulate matter emissions from portable diesel-fueled engines with a horsepower of 50 or greater (CARB, 2020). Generators under this threshold would not be considered to generate significant emission. Additionally, generators will be required to comply with 3 CCR Section 8306, which establishes specific requirements for the use and registration of generators rated below or above fifty (50) horsepower.

Based on the size, location, and nature of the proposed project, and the fact that Trinity County is designated as "attainment" or "unclassified" for all the federal and State ambient air quality standards, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment (i.e., PM_{10}). As such, impacts from the proposed project would be less than significant.

c) This discussion addresses whether the proposed project would expose sensitive receptors to substantial concentrations of criteria air pollutants or toxic air contaminants. As noted in the *Environmental Setting*, high concentrations of criteria air pollutants and toxic air contaminants can result in adverse health effects to humans. Some population groups are considered more sensitive to air pollution than others; in particular, children, elderly, and acutely or chronically ill persons, especially those with cardio-respiratory diseases such as asthma and bronchitis. Land uses that generally house more sensitive people include residences, schools, parks, childcare centers, hospitals, convalescent homes, and retirement homes. Due to the nature and size of the project, construction and operational activities are not expected to generate air quality pollutants that would cause a significant impact.

Construction. During construction of the proposed project, there is the potential for the generation of emissions of criteria air pollutants and toxic air contaminants including, but not limited to, NOx, CO, fugitive dust, and diesel particulate matter. Due to the size and nature of the proposed project, construction activities are not expected to generate significant emissions of criteria air pollutants or toxic air contaminants. As discussed above, the project site does not contain NOA that could be released during construction activities such as site preparation and grading (USGS, 2011). Since the closest sensitive receptors to the project site are tenants of a single-family residence on an adjacent parcel (more than 800 feet from the nearest cultivation area), the potential to impact sensitive receptors with emissions from construction is limited, and impacts would be less than significant.

Operation. A cannabis cultivation operation is not a type of land use that would generally be considered to emit toxic emissions that would expose sensitive receptors to substantial pollutant concentrations. These types of land uses typically include combustion related power plants, gasoline dispensing facilities, asphalt batch plants, warehouse distribution centers, and quarry operations. However, the proposed project does have the potential to result in the emissions of criteria air pollutants and toxic air contaminants including fugitive dust and diesel particulate matter, which would be primarily from vehicle/truck traffic and the use of generators. As previously stated, generators will be required to comply with 3 CCR Section 8306, which establishes specific requirements for the use and registration of generators rated below or above fifty (50) horsepower.

Cultivation operations also have the potential to generate emissions from pesticide use. Due to the size, location, and nature of the proposed project, operational activities are not expected to generate significant emissions of criteria air pollutants or toxic air contaminants. State buffer zone regulations typically require pesticide applications to be administered a minimum of 300 feet from sensitive receptors (e.g., residences) (Owens and Feldman, 2004). Pursuant to 3 CCR Section 8106, the proposed project will implement a Pest Management Plan that includes chemical, biological, and cultural methods the applicant anticipates using to control or prevent the introduction of pests on the cultivation site. Furthermore, the proposed project would be required to comply with 3 CCR Section 8307, which among other requirements, includes protocols for the prevention of pesticide drift to reduce potential impacts from pesticide application.

According to the EIR prepared for the County Cannabis Ordinance, projects "setback a minimum of 350 feet from adjacent residences such that attendant odors would less likely be detectable by people off-site." As noted above, the closest sensitive receptors are located over 800 feet from the nearest cultivation operation onsite and would not be impacted by any pesticide use that could occur from the proposed cultivation activities. Based on the analysis above, the proposed project would result in a less than significant impact.

d) During long-term operation of the project there is the potential to impact air quality due to odors that would be generated by the proposed cultivation activity. The Trinity County Cannabis Program Revised Draft EIR notes that dispersion modeling has been conducted by other counties to determine the distance from which cannabis odor may be detected. The results of this modeling indicated that specific cannabis compounds may be detectable at a distance of two miles or more depending on weather conditions. The EIR states that although research is limited, it is anticipated that the concentration of cannabis odors is not significant enough to create a public health concern for off-property residential receptors (Trinity County, 2019). While odors from flowering cannabis plants can be strong within the immediate vicinity of cultivation sites, the distance of the proposed cultivation areas to the nearest sensitive receptors and the low density of sensitive receptors will reduce any impacts to less than significant. In addition, many of the nearest sensitive receptors are themselves either cultivating cannabis and/or have immediate neighbors that are cultivating cannabis. As such, their tolerance for cannabis odors may be greater than that of the general public.

As discussed in Section 2 – PROJECT DESCRIPTION, the proposed cultivation area does not comply with the Trinity County Code Section 17.43.050.A.8, which requires a 500-foot setback from the property lines for a medium (up to one acre of canopy) cannabis cultivation site (see Figures 2 and 3 in Appendix A). To allow cultivation in this area, the applicant has submitted an application for a variance. The basis for the variance request is that due to the narrow and steep aspects of the property, the roads and canopy areas are within the required setback. As a condition of approval of the use permit, the variance must be approved before the applicant can proceed with cultivation in the proposed cultivation area requiring the variance. The purpose of the 500-foot property line setback requirement provision in Trinity County Code Section 17.43.050.A.8. is to mitigate potential impacts (e.g., odors, noise, lighting, fugitive dust, etc.) to adjacent neighbors from cannabis cultivation activities. The project site is surrounded by vacant undeveloped land and there are no structures or sensitive receptors immediately adjacent to the site. The nearest sensitive receptor (residence) is located 215 from the property line and over 800 feet from the nearest proposed cultivation area.

Once a variance is issued by the County, the variance is evaluated on an annual basis. Should odor from the project become an issue, the County could terminate the variance approval and require relocation of the cultivation activity subject to the variance. Since there are no sensitive receptors within close proximity to the proposed cultivation areas, the reduced setback from the property lines would not expose a substantial number of people to odors. Based on the analysis above, the proposed project would result in a less than significant impact.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Air Quality* were found to be less than significant.

Documentation and References

CAPCOA (California Sir Pollution Control Officers Association). 2022. *Health Effects.* [Online]: http://www.capcoa.org/health-effects/. Accessed February 6, 2022.

CARB (California Air Resources Board). 2017. *Area Designation Maps / State and National.* [Online]: https://www.arb.ca.gov/permits/permits.htm. Accessed February 5, 2022.

CARB. 2020. *PERP Regulation and Portable Engine ATCM.* [Online]: https://ww2.arb.ca.gov/resources/documents/perp-regulation-and-portable-engine-atcm. Accessed: July 21, 2020.

CARB. 2022a. *Hydrogen Sulfide & Health.* [Online]: https://ww2.arb.ca.gov/resources/hydrogen-sulfide-and-health. Accessed February 6, 2022.

CARB. 2022b. *Lead & Health.* [Online]: https://ww2.arb.ca.gov/resources/lead-and-health. Accessed February 6, 2022.

CARB. 2022c. *Sulfate & Health.* [Online]: https://ww2.arb.ca.gov/resources/sulfate-and-health#:~:text=Why%20does%20CARB%20focus%20on%20sulfates%3F%20Sulfates%20can,range%20of%20adverse%20health%20effects%2C%20as%20described%20below. Accessed February 6, 2022.

CARB. 2022d. *Vinyl Chloride & Health.* [Online]: https://ww2.arb.ca.gov/resources/vinyl-chloride-and-health#:~:text=The%20primary%20non-cancer%20health%20effect%20of%20long-term%20exposure,a%20rare%20form%20of%20liver%20cancer%20in%20humans. Accessed February 6, 2022.

CARB. 2022e. *Visibility Reducing Particles & Health.* [Online]: https://ww2.arb.ca.gov/resources/visibility-reducing-particles-and-health. Accessed February 6, 2022.

CDPR (California Department of Pesticide Regulation). *California Code of Regulations, Title 3, Food and Agriculture, Division 6. Pesticides and Pest Control Operations. Chapter 4. Environmental Protection, Subchapter 5. Surface Water, Article 1, Pesticide Contamination Prevention. Section 6960.* [Online]: https://www.cdpr.ca.gov/docs/legbills/calcode/040501.htm. Accessed February 5, 2022.

Churchill, R. K., and R. L. Hill. 2000. *A General Location Guide for Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos*. California Department of Conservation. 2000.

NCUAQMD (North Coast Unified Air Quality Management District). 2022. [Online]: http://ncuaqmd.org/index.php?page=rules.regulations. Accessed February 5, 2022.

Owens, Kagan and Feldman, Jay. 2004. *Getting the Drift on Chemical Trespass*. Beyond Pesticides/National Coalition Against the Misuse of Pesticides. Vol. 24, No. 2.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

U.S. Geological Survey (USGS). 2011. *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California.*

IV. **BIOLOGICAL RESOURCES:** *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local of regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community, Conservation Plan, or other approved local, regional, or State habitat conservation plan?				X

Environmental Setting

The project site is a 143.6-acre property consisting of lands that have been previously disturbed by timber harvesting activities. The current use of the project site includes a single-family residence and up to 10,000 square feet of cannabis cultivation, as well as appurtenant structures (existing groundwater wells, water storage tanks, harvest, and storage containers, etc.).

The project site is comprised of forested habitats and open field cultivation sites. The property was logged approximately 30 years ago, and the majority of the forested area is comprised of relatively young Pacific Douglas Fir forest, including madrone, tanoak, canyon live oak, and big-leaf maple trees (PWA, 2021). The nearest water sources consist of a Class II and a Class III streams running through the property. There are two existing surface water diversion points and one existing armored fill stream crossing on site (refer to Figures 2 and 3 in Appendix A). No other stream crossings or water diversions are proposed for this project. No jurisdictional wetlands meeting the Army Corps of Engineers three-parameter criteria have been observed in the areas proposed for development on the project site (PWA, 2021).

Land uses in the vicinity of the project parcel are primarily US Forest Service (USFS) land managed for mixed uses including timber harvest, as well as rural residential parcels.

Impact Analysis

The following includes an analysis of environmental parameters related to *Biological Resources* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) A Biological Resource Assessment (BRA) was prepared for the project by Pacific Watershed Associates (PWA) (refer to Appendix A). The BRA included an evaluation of onsite wildlife habitats and the potential impacts to Threatened, Endangered, Sensitive (TES), or rare plant and animal species. The BRA included a review of literature and relevant databases to conduct a nine (9) quadrant search to determine the proximity of special status animal and plant species presence. Field surveys were also conducted, implementing a 150-foot buffer around all proposed project areas to

identify potential habitat for any rare species. Protocol-level plant surveys were completed within each cultivation expansion area as well as for the proposed pond development, following CNPS (2001) and CDFW (2018) guidelines. In addition, passive ocular and seek-and-find observations were made at all identified areas with suitable aquatic and riparian habitat for species presence/absence verification.

The BRA identified three main natural communities within the property: a Douglas fir (*Pseudotsuga menziesii*) woodland, madrone (*Arbutus menziesii*) forest, and a Tobacco brush (*Ceonothus velutinus*) chaparral. The site evaluations found the property to be typical for the area, with the cultivation operations situated in open field areas with sufficient setbacks from the regenerating forest and waters surrounding (PWA, 2021). Based on the database review conducted, seventy-three (73) statewide rare plant species and fifty-one (51) animal species have been documented within the 9-quad search.

Ten (10) wildlife species were identified in the BRA that have moderate potential to exist within the project site or documented as present:

- Pacific tailed frog
- Southern torrent salamander
- Osprey
- Ruffed grouse
- Western bumblebee
- North American porcupine
- Hoary bat
- Long-legged myotis
- Trinity bristle snail
- Redwood juga

Surveys were conducted for Pacific tailed frog (*Ascaphus truei*) and southern torrent salamander (*Rhyacotriton variegatus*), around all aquatic and riparian areas, but none were observed (refer to Appendix A). Although suitable habitat exists on the site for these aquatic species, no riparian habitat on the site will be impacted by proposed project activities. The proposed project does not involve the construction of any stream crossings, additional surface water diversions, or any ground-disturbing activities around riparian habitats. The existing surface water diversions along the Class II intermittent stream and crossings on the Class III watercourse are permitted and maintained per CDFW requirements (CDFW, 2016). Furthermore, proposed development is compliant with the County's required setbacks from all water features (Trinity County, 2019). As Pacific tailed frog and Southern torrent salamander are restricted to streams and associated damp riparian habitat, no mitigation is required.

Although the BRA identified no potential for foothill yellow-legged frog to occur on site, this species is known to use upland areas away from riparian habitat (Cook, 2012). As such, pre-constructions surveys shall be conducted for this species. Preconstruction surveys shall follow widely used and accepted standardized protocols that control for habitat type, seasonality, and environmental conditions, including the methods described in Considerations for Conserving Foothill Yellow-Legged Frog (CDFW 2018), and Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments (Peek, et al., 2017). This has been incorporated as Mitigation Measure BIO-1 to reduce potential impacts to aquatic species to a less than significant level.

As required by the Trinity County Cannabis Ordinance, regardless of detection during the initial biological reconnaissance survey, if suitable habitat for Trinity bristle snail is present within the proposed development area, a qualified biologist approved by the County and familiar with the species shall conduct preconstruction surveys of proposed new development activities within the period when the species is the most active (between May and October and between dusk and dawn) prior to new development activities. Preconstruction surveys shall be conducted using a widely used and accepted standardized protocol that controls for seasonality and environmental conditions, such as the Survey Protocol for Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan (BLM, 2003). This is incorporated as Mitigation Measure BIO-2 to reduce potential impacts to Trinity bristle snail to a less than significant level.

The BRA also noted the long-legged myotis bat (*Myotis volans*) was identified at the site from previous surveys in 2007 (refer to Appendix B). The project does not propose removing trees, buildings, or cave-like structures, therefore proposed development would not impact roosting bats and no mitigation would be required.

The BRA evaluated the potential for occurrence of rare and limited-distribution botanical species documented within the 9-quad search. Twenty-six (26) special-status botanical species were identified to have moderate or high potential to occur at the project site, however, no Threatened, Endangered or CNPS rare plant species were observed during protocol botanical surveys (refer to Appendix B). Therefore, ground disturbing activities associated with the proposed project will have no impact on special-status plants and no mitigation is required.

According to the Trinity County Cannabis Ordinance, prior to removal of any trees, or ground-disturbing activities adjacent to or within suitable nesting, roosting, or foraging habitat (e.g., forest clearings) for spotted owl, a qualified biologist approved by the County and familiar with the life history of the northern spotted owl shall conduct preconstruction surveys for nests within a 1.3-mile buffer around the site as prescribed in Protocol for Surveying Proposed Management Activities that may Impact Northern Spotted Owls. A Northern spotted Owl (NSO) Habitat and Impact Assessment was conducted to determine the potential impacts to suitable habitat for NSO on the project site (OBC, 2020) (refer to Appendix C). The subject property is not designated as NSO critical habitat, but areas 0.45 miles to the west and 0.26 miles to the east are designated as such. There are two NSO activity centers in the vicinity of the proposed project (one is 0.92 miles west of the parcel, the other is 1.0 mile northeast), however, no NSO have been detected within the 1.3 mile buffer radius of each site since 2002 and 2017, respectively. Furthermore, these sites are part of a long-term NSO monitoring demographic study by Colorado State University and will continue to be monitored for the foreseeable future. As part of the NSO Habitat and Impact Assessment, a certified biologist surveyed the project site for NSO habitat availability on October 23rd and December 14th, 2020. Due to the young age of the forest on the property, the habitat assessment found it highly likely unsuitable for nesting/roosting NSO. While the open grassland areas and cultivation sites provide suitable foraging habitat for NSO, the proposed expansion of cultivation areas would not decrease the suitable foraging area (OBC, 2020).

According to the NSO Assessment, the most likely project-related impacts to NSO are from noise and light disturbance. The Arcata Fish and Wildlife Office published a document for use determining probable disturbance distances to nesting owls, based on several factors: ambient sound level at the site, use of specific equipment, and visual line-of-sight distance to nests (USFWS, 2006). Project-specific impacts were analyzed under Scenario 7, which approximates or exceeds both the likely ambient background noise at the site, and the potential action-generated noise from any site-clearing, development, or cultivation activities (USFWS, 2006).

Existing noise standards of the Trinity County Cannabis Ordinance are as follows: The cultivation of cannabis shall not exceed the noise level standards as set forth in the County General Plan: 55 A-weighted decibels (dBA) from 7:00 a.m. to 7:00 PM and 50 dBA from 7:00 PM to 7:00 AM measured at the property line, except that generators associated with a commercial grow are not to be used between 10:00 PM and 7:00 AM (Section 315-843[6][b]). The following additional noise performance standards shall apply to generator use:

- Project-generated sound must not exceed ambient nesting conditions by 20-25 dBA. Project-generated sound, when added to existing ambient conditions, must not exceed 90 dBA.

- The proposed project is powered by PG&E and would only use generators on an emergency back-up basis.

- Existing lighting standards of the Trinity County Cannabis Ordinance are as follows: All lighting associated with the operation shall be downcast, shielded and/or screened to keep light from emanating offsite or into the sky. Those cultivations using artificial lighting for mixed-light cultivations shall shield greenhouses so that little to no light escapes. Light shall not escape at a level that is visible from neighboring properties between sunset and sunrise.

- Mixed-light cultivation does not include the use of artificial lighting. Any external security lighting will adhere to these standards.

The NSO assessment determined the predicted auditory disturbance distance that may impact nesting spotted owls (with either low or moderate ambient background sounds at the site) is 200 meters (1/8 mi), and the visual line-of-sight disturbance distance for nests is a maximum of 100 meters, or less if the view is obscured (OBC, 2020). Since the closest critical habitat to the site is 0.26 miles away, the proposed project exceeds this buffer. Furthermore, the implementation of the lighting standards contained in the EIR for the Trinity County Cannabis Program (Trinity County, 2019) would reduce potential light impacts to less than significant for the project site (OBC, 2020). The NSO assessment concluded that there is highly likely no probability of significant disturbance impacts to NSO from proposed expansion of cultivation activities.

While the proposed project occurs within 1.3 miles of known NSO occurrences, further mitigation will not be required for project activities due to the following: 1) annual NSO surveys are already carried out within this area as part of the Colorado State University long term study; 2) a qualified biologist determined there is no suitable nesting/roosting habitat on the project site (OBC, 2020); 3) existing foraging habitat will not be degraded or removed by the implementation of project activities (OBC, 2020); and 4) in addition to existing noise and light disturbance standards in the Trinity County Cannabis Ordinance, noise and light disturbance from project activities have been analyzed in accordance with USFW guidelines (2006), and significant disturbance is highly unlikely.

Therefore, with continued monitoring of the known Activity Centers within 1.3 miles of the project site, no suitable habitat being removed, and existing noise and light disturbance standards, impacts to the northern spotted owl will be less than significant.

The project proposes an additional water storage pond which may have the potential to support invasive bullfrogs (*Lithobates catesbeianus*) which could cause significant impacts to native aquatic species. Generally, bullfrog tadpoles require two years to develop into frogs, whereas native amphibians only require one year. By draining a pond, a minimum of every two years, bullfrog tadpole development can be handicapped, and bullfrog populations can be dramatically decreased. Per Mitigation Measure BIO-3, the California Department of Fish and Wildlife (CDFW) would be consulted, and a detailed plan for disposal of the bullfrog-infested water should be developed in conjunction with all agencies with permitting authority, such as the Regional Water Quality Control Board.

The trees, shrubs, and grasses within the project parcel could be used by nesting migratory birds. Nesting migratory birds are protected under the Federal Migratory Bird Treaty Act and the California Department of Fish and Wildlife (CDFW) code. Consistent with the EIR for the Trinity County Cannabis Program (Trinity County, 2019), nesting bird surveys will occur for any vegetation clearing that is proposed to occur during the reproductive season. This has been included as Mitigation Measure BIO-4 for the proposed project and will prevent potentially significant impacts to nesting migratory bird species.

Based on the above evaluation of biological resources, impacts to special-status species are considered less than significant with mitigation incorporated.

b) There are two waterways located on the property, a Class II and Class III tributaries to the South Fork Trinity River. The South Fork Trinity River is one of the largest undammed rivers in California and is designated under the *Wild and Scenic Rivers Act*. The Upper South Fork Trinity River is also identified as a Cannabis Priority Watershed in Trinity County (Trinity County, 2019). Both tributaries on the subject property contribute cold water flows to the river with nearly vertical waterfall-like confluences flowing approximately 100 feet above the river. No potential wetlands or vernal pools were observed on the site during the field surveys conducted for preparation of the Biological Assessment (PWA, 2021).

The Trinity County Cannabis EIR has established the minimum riparian setbacks for all cannabis activities around riparian areas as follows: Class I perennial watercourses: 150 feet; Class II ephemeral watercourses: 100 feet; and Class III intermittent watercourses: 50 feet (Trinity County, 2019). The proposed project is compliant with the required setbacks. The proposed project does not involve the construction of any stream crossings, surface water diversions, or any ground-disturbing activities around riparian habitats. The existing surface water diversions along the Class II intermittent stream and crossings on the Class III watercourse are permitted and maintained per CDFW requirements (CDFW, 2016). In addition, no sensitive communities have been identified on the project site (refer to Appendix B). Therefore, the proposed project would not have a substantial adverse effect on riparian habitat or other sensitive natural communities and impacts from the proposed project would be less than significant.

c) No jurisdictional wetlands meeting the Army Corps three-parameter criteria were observed in the areas proposed for development on the project site during the field surveys conducted for preparation of the BRA (see Attachment B). Additionally, the USFWS National Wetland Inventory also does not indicate the potential presence of wetlands on or near the project site (USFWS, 2021). As noted above, the footprint of the proposed cultivation areas would be over 100 feet from the streams on the property. Because no potential wetlands were identified in the areas that would be developed by the project, a formal delineation was deemed unnecessary. Since no known three-parameter wetlands will be disturbed by the proposed project, a less than significant impact to federally protected wetlands would occur.

d) The subject property totals 143.6 acres in in western Trinity County. The property has historically been used for timberland production and is characterized by young mixed-coniferous forests and clearings. Portions of the property are developed with existing roads, accessory buildings, a residence, electrical infrastructure, a pond, a well, and existing cannabis cultivation activities.

There are two streams (a Class II intermittent and a Class III ephemeral) that pass through the property and empty into the South Fork Trinity River. As shown in the project site plans (Figures 2 and 3), the proposed expansion of cultivation activities is designed to comply with required setbacks from these aquatic resources. These regulations require a 100-foot setback from Class II intermittent watercourses or wetlands and a 50-foot setback from ephemeral watercourses (Trinity County, 2019). No fencing or other physical features that may impede wildlife movement are proposed along the riparian corridors on the project parcel.

As discussed above under subsection a), the trees, shrubs, and grasses within the project parcel could be used by nesting migratory birds. Nesting migratory birds are protected under the Federal Migratory Bird Treaty Act and the California Department of Fish and Wildlife (CDFW) code. Consistent with the EIR for the Trinity County Cannabis Program (Trinity County, 2019), nesting bird surveys will occur for any vegetation clearing that is proposed to occur during the reproductive season. As noted above, this has been included as Mitigation Measure BIO-4 for the proposed project and will prevent potentially significant impacts to nesting migratory bird species.

Due to the small scale of the proposed project, the movement of any native resident or migratory wildlife species or established native resident or migratory wildlife corridors is not anticipated to be significant. No fencing is proposed as part of project activities. Based on the location of the areas that would be developed for the project, and the nature of the proposed cultivation activity, there will be limited potential for the project to impact wildlife movement.

As discussed above, Mitigation Measures BIO-4 and suitable measures outlined in the EIR for the Trinity County Cannabis Program (Trinity County, 2019) have been included as mitigation for the proposed project. With the implementation of the proposed mitigation measures in combination with existing regulatory requirements of State and Federal agencies, the proposed project would result in a less than significant impact with mitigation incorporated.

e) The County General Plan, Conservation Element, discusses the need for the protection and conservation of natural resources including biological resources within the county. While the plan outlines various goals and objectives, there has been no policy developed related to specific biological resources or tree preservation or management that would specifically apply to the project and the lands where the project is located. The project does not propose to remove any trees or otherwise impact tree vegetation, as there are no trees on the project site that would be impacted. Any pesticide use on the property will comply with the legal practices outlined by the California Department of Pesticide Regulation (2017 and 2018). There will be no impact to these resources from development of the project.

f) No habitat conservation plans, or other similar plans have been adopted for the project site or project area. As such, the proposed project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community, Conservation Plan, or other approved local, regional, or State habitat conservation plan. Therefore, no impact would occur in this regard.

Mitigation Measures

Mitigation Measure BIO-1: The following measure is provided to reduce potential impacts to foothill yellow-legged frog to a less then significant level:

A qualified biologist approved by the County and familiar with the life cycle of foothill yellow-legged frog, shall conduct preconstruction surveys of proposed new development activities 24 hours before new development activities. Preconstruction surveys for special-status amphibians shall follow widely used and accepted standardized protocols that control for habitat type, seasonality, and environmental conditions, including the methods described in Considerations for Conserving Foothill Yellow-Legged Frog (CDFW 2018), and Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments (Peek, et al., 2017). Preconstruction surveys shall be conducted throughout the proposed construction area and at least a 400-foot buffer around the proposed development area. Surveys shall consist of "visual encounter" as well as "walk and tum" surveys of areas beneath surface objects (e.g., rocks, leaf litter, moss mats, coarse woody debris). Preconstruction surveys shall be conducted within the appropriate season to maximize potential for observation for each species, and appropriate surveys will be conducted for the applicable life stages (i.e., eggs, larvae, adults).

Mitigation Measure BIO-2: The following measure is provided to reduce potential impacts to Trinity bristle snail to a less then significant level:

Regardless of detection during the initial biological reconnaissance survey, if suitable habitat for Trinity bristle snail is present within the proposed development area, a qualified biologist approved by the County and familiar with the species shall conduct preconstruction surveys of proposed new development activities within the period when the species is the most active (between May and October and between dusk and dawn) prior to new development activities. Preconstruction surveys shall be conducted using a widely used and accepted standardized protocol that controls for seasonality and environmental conditions, such as the *Survey Protocol for Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan* (BLM 2003). Surveys shall be conducted throughout the proposed construction area and an appropriate buffer around the proposed development area as determined by the qualified biologist familiar with the species and survey protocols. If Trinity bristle snail or its habitat is not detected during the preconstruction survey, then further mitigation is not required.

If Trinity bristle snail is detected during the preconstruction survey, then consultation with CDFW shall be initiated as described above. Injury or mortality of this species will be avoided through project design modification or cultivation site relocation. If impacts to Trinity bristle snail are unavoidable, then the applicant will submit an incidental take permit (ITP) application to CDFW and receive authorization prior to commencing development of the cultivation site. Conditions of incidental take authorization may include minimization measures to reduce impacts to individual Trinity bristle snails, or compensation for loss of the species including but not limited to purchasing credits from a CDFW-approved mitigation bank.

Mitigation Measure BIO-3: The following measure is provided to reduce potential impacts to special-status amphibians from invasive bullfrogs to a less then significant level:

To avoid impacts to sensitive native amphibian and fishery resources from bullfrog establishment in the proposed rainwater catchment pond, pond draining should occur in September through October, a minimum of every two years. Careful planning and coordination with CDFW, is necessary to ensure potential impacts to stream resources can be addressed, prior to commencing with pond draining. Discharge of polluted water to waters of the state may require permitting from other agencies with permitting authority, such as the Regional Water Quality Control Board.

Take of bullfrogs is specifically allowed in the California Code of Regulations (CCR), Title 14 (T- 14) section 5.05(a)(28), under the authority of a sport fishing license. There is no daily bag limit, possession limit, or hour restriction, but bullfrogs can only be taken by hand, hand-held dip net, hook and line, lights, spears, gigs, grabs, paddles, bow and arrow, or fish tackle. While draining occurs, direct removal efforts should be employed as described above if possible.

Mitigation Measure BIO-4: The following measure is provided to reduce potential impacts to nesting birds to a less then significant level:

If vegetation removal or other ground disturbing activities associated with project construction cannot occur outside the bird nesting season (generally February 1 – August 31), a qualified biologist will conduct nesting bird surveys within the area of impact and establish a protective buffer for any active nests found. The following shall be implemented:

- Conduct surveys no more than 7 days prior to activities, covering the entire area of potential impact.
- If an active nest is located during the survey, a no-disturbance buffer shall be established around the nest by the qualified biologist, in consultation with California Department of Fish and Wildlife and the U.S. Fish and Wildlife

Service.

- Establish protective buffers for active nests based on type of project activity to be conducted, habitat, and species of concern.
- Physical protective buffers should be in the form of high visibility fencing, inspected weekly by a biological monitor to ensure stability.
- If project activities are to be conducted while active nest buffers are in place, a biological monitor will be on site during project activities to ensure that no take of migratory birds occurs.

Findings

In the course of the above evaluation, impacts associated with *Biological Resources* were found to be less than significant with the implementation of the mitigation measures.

Documentation and References

BLM (Bureau of Land management). 2003*. Survey Protocol for Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan.* Version 3.0.

CDFW (California Department of Fish & Wildlife). 2018. *Considerations for Conserving Foothill Yellow-Legged Frog*. May 14, 2018.

CDPR (California Department of Pesticide Regulation). 2017. *Legal Pest Management Practices for Cannabis Growers in California*. December 2017. [Online]: https://www.cdpr.ca.gov/docs/county/cacltrs/penfltrs/penf2015/2015atch/attach1502.pdf. Accessed February 5, 2022.

CDPR. 2018. *Cannabis Pesticides that Cannot be Used*. September 2018. [Online]: https://www.cdpr.ca.gov/docs/cannabis/cannot_use_pesticide.pdf. Accessed February 5, 2022.

Cook, David. 2012. "Natural History Notes: Rana Boylii (Foothill yellow-legged frog) Upland Movement." Herpetological Review, vol 43. P. 325.

OBC (O'Brien Biological Consultants). 2020. *A Northern Spotted Owl (NSO) Habitat and Impacts Assessment for Cannabis Operations for the Patrick Kahan Property.* December 2020.

Peek, R. A., S. M. Yarnell, A. J. Lind. 2017. *Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments*. University of California, Davis. June 2017.

PWA (Pacific Watershed Associates). 2021. *Biological Resource Assessment for 5200 Lower South Fork Road*. October 2021.

PWA. 2020. *Site Management Plan Technical Report Order WQ 2019-0001-DWQ for APN 008-080-32*. March 2020.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1973. *General Plan – Open Space and Conservation Element*. April 1973.

V. CULTURAL RESOURCES: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Environmental Setting

The project area is located within the traditional territory of the South Fork Hupa, or Tsunungwe Tribe (Wallace, 1978). Similar in most aspects to the better-known Hupa tribe to the north, the South Fork Hupa lived along the South Fork of the Trinity River or its tributaries. The traditional territory of the South Fork Hupa, which spanned from the mouth of the South Fork of the Trinity River to Grouse Creek, is abundant with both floral and faunal resources (Wallace, 1978). The most important protein source was the yearly anadromous fish runs on the Trinity River and its territories, in which they were able to smoke and store enough salmon to last through the winter (Wallace, 1978). In addition, the tribe harvested sturgeon, trout, and lamprey eel as riverine resources and deer, elk, squirrel, and woodrat as land-caught game (Goddard, 1903). Of the plant resources available in the area, acorns held a primary importance, but the South Fork Hupa also harvested various nuts, seeds, bulbs, and shoots (Goddard 1903). Family dwelling comprised an excavated pit about five feet deep leaving a shelf of earth surrounding the center and covered with cedar planks (Wallace, 1978). Additional structures included sweathouses and menstrual huts (Wallace 1978; Goddard, 1903).

The nearest South Fork Hupa village to the project area is os-than-tung, approximately 1.25 miles to the northwest. The project site has a documented history of being disturbed for timber harvest. Roads on the parcel have been developed to facilitate this historical timber harvesting. Other non-historical cultural uses may have occurred at the project site and in the surrounding vicinity. Currently, the project site is used for cannabis cultivation.

Impact Analysis

The analysis in this section has been prepared in accordance with Section 15064.5 of the State CEQA Guidelines, which considers the potential impacts on prehistoric, historic, and paleontological resources. This section describes the potential cultural resources within the project study area, and the applicable regulations that govern those resources.

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Section 21084.1). If it can be demonstrated that a project will cause damage to resources Eligible for or Listed in the California Register of Historic Resources (CRHR), Tribal Cultural Resources (TCRs) and other resources on local County or Local lists, or those determined by the lead agency to be significant. The lead agency may require reasonable efforts be made to permit any or all of the resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c) (1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of installation, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

5. A historical resource is a resource listed in, or determined to be eligible for listing, in the CRHR (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

The applicant provided a Cultural Resources Investigation prepared by Archaeological Research and Supply Company (ARS) that included literature and Sacred Lands File searches as well as an intensive-level pedestrian survey over 32 acres of the project site. The report notes that no cultural resources have been previously recorded within the project area and concludes that no newly identified prehistoric or historic-era resources were identified during the pedestrian survey (ARS, 2020).

The following includes an analysis of environmental parameters related to *Cultural Resources* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) Results from an intensive-level pedestrian survey and associated record search did not identify any prehistoric or historic archaeological sites, ethnographic sites, or historic-era built environment resources on the project site (ARS, 2020). The record search showed one previous survey and one resource that was recorded within a ½ mile of the project area but will remain unaffected by project activities. There are no National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) sites located at the project, or within close proximity of the site, that would call for the retention of the historical structure or listing. Therefore, no impacts to historical resources would occur from the implementation of the proposed project.

b) A cultural resources review completed for the project did not find any archaeological site that could be impacted by the proposed project (ARS, 2020). However, there is a possibility that cultural resources, including buried archaeological materials, could exist in the area and may be uncovered during project development. Therefore, if any resources are found during the construction of the proposed project, they will be mitigated through implementation of Mitigation Measure CR-1. Adherence to protocols established by Mitigation Measure CR-1 would serve to avoid impacts that would result in a substantial adverse change in the significance of an archaeological resource as defined in CEQA Section 15064.5. Impacts would be less than significant with mitigation incorporated.

c) There are no known burial sites on or immediately adjacent to the proposed project site. If human remains are unearthed during future development of the site, the provisions of California Health and Safety Code Section 7050.5 shall apply. Under this Section, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition, pursuant to California Public Resources Code Section 5097.98 and Mitigation Measure CR-2. Impacts are considered less than significant with mitigation incorporated.

Mitigation Measures

The following mitigation measures have been developed, to reduce potential impacts related to undocumented cultural resources and unknown human burials to less than significant levels:

Mitigation Measure CR-1. If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 50 feet of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material, and offered recommendations for further action.

Mitigation Measure CR-2. If In the event that previously unidentified evidence of human burial or human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie human remains (Public Resources Code, Section 7050.5), the Trinity County

Coroner must be informed and consulted, per State law. If the coroner determines the remains to be Native American, he or she shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent. The most likely descendent will be given an opportunity to make recommendations for means of treatment of the human remains and any associated grave goods. when the commission is unable to identify a descendant or the descendants identified fail to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendants and the mediation provided for in subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance. Work in the area shall not continue until the human remains are dealt with according to the recommendations of the County Coroner, Native American Heritage Commission and/or the most likely descendent have been implemented.

Findings

With the implementation of the mitigation measures identified the proposed project will have a less than significant impact to *Cultural Resources*.

Documentation and References

ARS (Archaeological Research and Supply Company). 2020. *A Cultural Resources Investigation of the Kahan Property, Salyer, Trinity County, CA.* May 2020.

Goddard, Pliny Earle, 1903. *Life and Culture of the Hupa*. University of California Publications in American Archaeology and Ethnology 1 (1).

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Wallace, William J., 1978. *Hupa, Chilula, and Whilkut.* In R. F. Heizer, ed., Volume 8, California. Handbook of North American Indians. Washington, D.C.: Smithsonian Institution.

VI. ENERGY:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Environmental Setting

In Trinity County, energy is used as a transportation fuel and as electrical and heat energy in homes, businesses, industries, and agriculture. The proposed project includes cannabis cultivation in outdoor full sun conditions and within hoop houses and does not use any artificial lighting for cultivation. The project site is currently provided power from Pacific Gas and Electric (PG&E) which provides power for the existing residence and all components of the small-scale cannabis cultivation. The applicant also has a small solar array and two (2) generators to serve as backup in the event of an electricity outage. Existing energy use at the project site includes PG&E electricity and gas for vehicles, equipment, and generators. The only additional uses of power proposed include increased outdoor lighting for safety and security.

Impact Analysis

The following includes an analysis of environmental parameters related to *Energy* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The following evaluates the project potential to result in significant environmental due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Construction. During construction of the proposed project, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel and delivery truck trips to and from the project site, and to operate generators to provide temporary power for lighting and electronic equipment. Project construction would consist of site preparation and construction of greenhouses, raised garden beds, and associated infrastructure.

There are no unusual project characteristics that would need construction equipment or practices that would be less energy efficient than at comparable construction sites in the region or state. Construction activity would be temporary and fuel consumption would cease once construction ends. Further, various equipment would be supplied by onsite generators, and would not require permanent connections to or otherwise burden local utilities. Due to the temporary nature of construction activities, the fuel and energy needed during project construction would not be considered a wasteful or inefficient use of energy. Therefore, it is expected that construction energy consumption associated with the proposed project would be comparable to other similar construction projects, and would therefore not be inefficient, wasteful, or unnecessary.

Operation. During long-term operation of the cultivation operation, energy would be consumed in the form of electricity from PG&E and fuel for vehicles, equipment, and generators. Electricity needs for the proposed project would be limited since the proposed project would use natural light for cultivation and no artificial lighting. As discussed elsewhere in this document, the proposed mixed-light cultivation would occur with the use of blackout tarps (light deprivation) to allow the applicant to have multiple harvests during the growing season. To provide backup electricity for equipment and security lighting in the event of a PG&E power outage, the applicant proposes the use of two (2) 2,000-watt portable generators with inverters. Generators proposed for this project will be required to comply with 3 CCR Section 8306,

which establishes specific requirements for the use and registration of generators rated below or above fifty (50) horsepower.

Due to the limited scope of the proposed project as a minor expansion of an existing agricultural use, and the use of natural sunlight for cultivation, the additional energy use from operations of the project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project operation. Energy use from operations of the project would be similar to other cultivation operations in the County. Therefore, the proposed project would result in a less than significant impact on this resource category.

b) There are no local plans for renewable energy or energy efficiency. California passed AB 32 which requires local governments to take an active role in addressing climate change and reducing greenhouse gas (GHG) emissions using methods such as energy efficiency in new development. As noted above, the proposed project would not use artificial lighting for cultivation and would be similar to other cultivation operations in the County. Due to the limited energy use that would result from the proposed project, it is not anticipated that the proposed expansion of an existing agricultural operation would conflict or obstruct a state plan for renewable energy or energy efficiency. Therefore, the proposed project would result in a less than significant impact in this resource category.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Energy* were found to be less than significant.

Documentation and References

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County Public Utility District (TPUD). 2022. *District History*. [Online]: https://www.trinitypud.com/about/history.aspx. Accessed February 5, 2022.

VII. GEOLOGY AND SOILS: *Would the project:*	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake, fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publications 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?			**X**	
b) Result in substantial soil erosion or the loss of topsoil?			**X**	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?			**X**	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				**X**
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?			**X**	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		**X**		

Environmental Setting

The United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey (WSSD) identifies three soil complexes on site as follows: Typic Xerofluvents-Riverwash association, 2 to 10 percent slopes; Clallam-Hugo-Holland families association, deep, dry, 35 to 70 percent slopes; and Skalan-Kristirn-Holland families association, deep, 35 to 70 percent slopes (PWA, 2021). These soils are characterized by sandy and gravelly alluvium and weathered metasedimentary rock. Soils are well to excessively drained.

Trinity County has historically experienced very low levels of seismicity and has a relatively low seismic risk compared to the rest of California. Trinity County was not determined to be affected by existing Earthquake Fault Zones under the Alquist-Priolo Earthquake Fault Zoning Act and does not have a relatively high potential for ground rupture (Trinity County, 2002). However, the region may be subjected to low to moderate levels of ground shaking from nearby or distant earthquakes.

Impact Analysis

The following includes an analysis of environmental parameters related to *Geology and Soils* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The project may expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault:

There are no active faults mapped in the project vicinity. The California Geological Survey (CGS, 2018) has the responsibility for mapping active earthquake faults in California, through legislation referred to as the Alquist-Priolo Earthquake Fault Zoning Act. There are no Alquist-Priolo earthquake fault zones identified in close proximity to the project site. In addition, there is no supplemental geologic data to suggest unmapped active faults in the region (USGS,

2022). As such, the proposed project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Based on this existing information, there will be no impact to the project components from impacts related to surface fault rupture.

ii) Strong seismic ground shaking:

Although there are no known earthquake faults in the project vicinity, the entire northern California region is subject to the potential for moderate to strong seismic shaking due to distant seismic sources. Seismic shaking can be generated on faults many miles from the project vicinity. Seismic shaking potential is considered minimal, and the hazard is not higher or lower at the project site than throughout the region. Standard design and construction practices meeting current California Building Code (where applicable) will provide adequate protection for buildings and related facilities proposed by the project. In compliance with these standards, the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, the proposed project would result in a less than significant impact.

iii) Seismic-related ground failure, including liquefaction:

Although located in a seismically active region (northern California), the project site is not likely to be subject to seismic shaking of adequate strength or duration to generate secondary seismic effects. Likely seismic sources are too far from the project site to generate sufficient long-duration strong shaking. Construction standards that meet the current California Building Codes (as applicable) will provide adequate protections for buildings and related facilities proposed by the project. In compliance with these standards, the proposed project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Therefore, the proposed project would result in a less than significant impact on this resource category.

iv) Landslides:

The proposed project site is located on flat terrain created by terracing the land, surrounded by steep slopes and mountainous terrain. There are no documented landslide hazard areas identified within the immediate vicinity of the site that would have an impact on the proposed project. As such, the proposed project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Therefore, the proposed project would result in no impact on this resource category.

b) There are no significant proposed modifications to the surface terrain from the project, as historical land development has significantly modified the site; therefore, the project is not expected to alter the susceptibility of the land to unstable earth conditions or erosion. Furthermore, the operation of the proposed project will be subject to the waste discharge requirements of the State Water Board for cannabis cultivation, which requires the implementation of best practicable treatment or control measures including those intended to minimize erosion. In compliance with existing regulatory requirements, the proposed project would not result in substantial soil erosion or the loss of topsoil. Therefore, the proposed project would result in a less than significant impact.

c) See the discussion under subsection a) above.

d) Expansive soils are those that undergo a change in volume when exposed to fluctuations in moisture, causing shrinking when dry and swelling when moist. Such a change in volume can distort structural elements and damage structures. Typically, soils with high clay contents are most susceptible to these processes. There are no documented expansive soils located at the project site. All soils have gravelly compositions and are well to excessively drained (PWA, 2021). The location of the proposed project consists of mostly residuum weathered from metasedimentary rock. As such, the proposed project will not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. Therefore, the proposed project would result in no impact on this resource category.

e) The proposed project is served by an existing, permitted septic system for the treatment of domestic wastewater. In order to receive approval from the Trinity County Environmental Health Department for a septic system, an analysis of the soil conditions at the site must occur to ensure they are suitable for receiving wastewater discharge. As indicated by the receipt of a permit from the County Environmental Health Department, the soils at the site have been determined

to be adequate to support the use of a septic system. The existing septic system will continue to be used for the proposed project, and the applicant also proposes to bring portable toilet(s) onsite if the number of employees will exceed the design capacity of the existing septic system. If determined to be necessary by the County Environmental Health Department, the septic system may need to be upgraded to handle any increase in wastewater discharge from the new dwelling and expanded cultivation operation. In compliance with existing regulatory requirements, the proposed project would result in less than significant impacts on this resource category.

f) Paleontological resources are classified as nonrenewable scientific resources, such as vertebrate, invertebrate, and plant fossils. No paleontological resources or unique geologic features have been identified on the proposed project site, and the potential for their occurrence is considered minimal.

However, there is a possibility that unknown paleontological resources could exist on the project site and may be uncovered during project development. As such, if a paleontological discovery is made during project development, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery and shall immediately contact the County. A qualified paleontologist shall be retained to observe all subsequent grading activities in the area of the find and shall salvage fossils as necessary. The paleontologist shall establish procedures for paleontological research surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered that require temporarily halting or redirecting of grading, the paleontologist shall report such findings to the County. The paleontologist shall determine appropriate actions, in cooperation with the applicant and the County, that ensure proper exploration and/or salvage. Excavated finds shall first be offered to a state-designated repository such as the Museum of Paleontology, University of California, Berkeley, or the California Academy of Sciences. Otherwise, the finds shall be offered to the County for purposes of public education and interpretive displays. The paleontologist shall submit a follow-up report to the County that shall include the period of inspection, an analysis of the fossils found, and the present repository of fossils. To prevent potential impacts to unknown paleontological resources at the project site, an inadvertent discovery protocol is included as Mitigation Measure GEO-1.

With the proposed mitigation measure, the project will not disturb any unique paleontological resource or unique geologic feature. Therefore, the proposed project would result in a less than significant impact with mitigation incorporated.

Mitigation Measures

The following mitigation measures have been developed to reduce potential impacts related to the inadvertent discovery of paleontological resources to less than significant levels:

Mitigation Measure GEO-1. If a paleontological discovery is made during construction, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery and shall immediately contact the County. A qualified paleontologist shall be retained to observe all subsequent grading and excavation activities in the area of the find and shall salvage fossils as necessary. The paleontologist shall establish procedures for paleontological resource surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered that require temporarily halting or redirecting of grading, the paleontologist shall report such findings to the County. The paleontologist shall determine appropriate actions, in cooperation with the applicant and the County, that ensure proper exploration and/or salvage. Excavated finds shall first be offered to a state-designated repository such as the Museum of Paleontology, University of California, Berkeley, or the California Academy of Sciences. Otherwise, the finds shall be offered to the County for purposes of public education and interpretive displays. The paleontologist shall submit a follow-up report to the County that shall include the period of inspection, an analysis of the fossils found, and the present repository of fossils.

Findings

With the implementation of the mitigation measures identified the proposed project will have a less than significant impact to *Geology and Soils*.

Documentation and References

CGS (California Geological Survey). 2018. *Fault-Rupture Hazard Zones in California, Special Publication 42, Interim Revision 2018*. Sacramento, California. 2018.

PWA (Pacific Watershed Associates). 2021. *Biological Resource Assessment for 5200 Lower South Fork Road*. October 2021.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2002. *Trinity County General Plan – Safety Element.* 2002.

United States Geological Survey (USGS). 2022. *U.S. Quaternary Faults*. [Online]: https://www.usgs.gov/programs/earthquake-hazards/faults. Accessed February 5, 2022.

IIX. GREENHOUSE GAS EMISSIONS: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Environmental Setting

Greenhouse gases (GHGs) are gases in the atmosphere that absorb and emit radiation. The greenhouse effect traps heat in the troposphere through a three-fold process, summarized as follows: short wave radiation emitted by the sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of longwave (thermal) radiation, and GHGs in the upper atmosphere absorb and emit this longwave radiation into space and toward the Earth. This "trapping" of the longwave radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Other than water vapor, the primary GHGs contributing to global climate change include the following gases:

- Carbon dioxide (CO_2), primarily a byproduct of fossil fuel combustion in stationary and mobile sources.
- Nitrous oxide (N_2O), a byproduct of fuel combustion and also associated with agricultural operations such as the fertilization of crops;
- Methane (CH_4), commonly created by off-gassing from agricultural practices (e.g., livestock), wastewater treatment, and landfill operations;
- Chlorofluorocarbons (CFCs), which were used as refrigerants, propellants, and cleaning solvents, although their production has been mostly prohibited by international treaty;
- Hydrofluorocarbons (HFCs), which are now widely used as a substitute for chlorofluorocarbons in refrigeration and cooling;
- Perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) emissions, which are commonly created by industries such as aluminum production and semiconductor manufacturing.

Global climate change is not confined to a particular project area and is generally accepted as the consequence of GHG emissions from global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

California passed Assembly Bill 32 (Global Warming Solutions Act) in 2006, mandating a reduction in greenhouse gas (GHG) emissions and Senate Bill 97 in 2007, evaluating and addressing GHG under CEQA. On April 13, 2009, the Governor's Office of Planning and Research (OPR) submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for GHG emissions, as required by Senate Bill 97 {Chapter 185, 2007} and they became effective March 18, 2010. As a result of these revisions to the CEQA Guidelines, lead agencies are obligated to determine whether a project's GHG emissions significantly affect the environment and to impose feasible mitigation to eliminate or substantially lessen any such significant effects. A lead agency is not responsible for wholly eliminating all GHG emissions from a project; the CEQA standard is to mitigate to a level that is "less-than-significant" or, in the case of cumulative impacts, less than cumulatively considerable (SMAQMD, 2018).

The Global Warming Solutions Act (AB 32) also directed CARB to develop the Climate Change Scoping Plan (Scoping Plan), which outlines a set of actions to achieve the AB 32 goal of reducing GHG emissions to 1990 levels by 2020, and to maintain such reductions thereafter. CARB approved the Scoping Plan in 2008 and first updated it in May 2014. The second update in November 2017 also address the actions necessary to achieve the further GHG emissions reduction goal of reducing GHG emissions to 40 percent below 1990 levels by 2030, as described in Senate Bill 32 (SB 32). In addition, the 2017 Scoping Plan looks forward to the reduction goal of reducing emissions 80 percent under 1990 levels by 2050, as described in Executive Order S-3-05 (EO-S-3-05).

The project site is located in the North Coast Air Basin and is under the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD). Neither Trinity County nor the NCUAQMD have adopted quantitative thresholds for determining the significance of greenhouse gas emissions. In addition, Trinity County does not have an adopted Climate

Action Plan. In the absence of quantitative thresholds or a Climate Action Plan, the NCUAQMD recommends the use of thresholds and guidance provided by other air districts in the State.

The site is currently provided power from Pacific Gas & Electric (PG&E), onsite solar, and generators for backup power only. Existing PG&E infrastructure onsite requires no extension of utility lines or systems.

Impact Analysis

The following includes an analysis of environmental parameters related to *Greenhouse Gas Emissions* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) There are several unique challenges to analyzing greenhouse gas emissions and climate change largely because of the global nature of climate change. Most environmental analyses examine the "project specific" impacts that a particular project is likely to generate. With regard to global warming, however, it is generally accepted that while the magnitude of global warming effects is substantial, the contribution of an individual project is so small that direct project specific impacts are highly unlikely.

   The proposed project involves the expansion of an existing cannabis cultivation operation to allow up to one-acre of cultivation. The proposed project would generate both direct and indirect GHG emissions. Direct GHG emissions would include emissions from construction activities, use of generators for electricity, and mobile sources (vehicles and equipment). Typically, mobile sources make up the majority of direct emissions from land use projects. Indirect GHG emissions would be generated by electricity use, waste generation, and water use. The proposed project will obtain electricity through a variety of sources including the property's existing PG&E service as well as the use of two (2) portable generators and solar panels.

   As noted above, neither the NCUAQMD nor Trinity County has established thresholds of significance for evaluating a project's GHG emissions. Since there are no applicable thresholds for projects in the Air District or Trinity County, the NCUAQMD recommends the use of thresholds and guidance provided by other air districts in the State such as the Bay Area Air Quality Management District (BAAQMD). The BAAQMD has developed project screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant impacts related to greenhouse gas emissions. Projects below the applicable screening criteria would not exceed the 1,100 metric tons (MT) of CO_2e ($MTCO_2e$) per year GHG threshold established by the BAAQMD for land use projects, other than permitted stationary sources. However, the BAAQMD has not established screening criteria for agricultural uses such as crop production. The BAAQMD screening criteria focuses on residential, commercial, industrial, and public facility projects. As noted in the CARB Scoping Plan, quantitative thresholds for the exchange of CO_2 between the atmosphere and California's natural and working lands (e.g., natural ecosystems and agricultural lands) have not been developed (CARB, 2017). Typical emission sources considered for quantitative thresholds of significance involve construction and ongoing operational emissions from stationary industrial projects with high rates of combustion emissions (e.g., refineries, power plants, other processing that uses industrial boilers) or the construction and increased power and transportation needs from newly constructed residential or commercial projects.

   Due to the size, design, location, and nature of the proposed project, it is not anticipated that it would result in the generation of substantial GHG emissions that would have a significant impact on the environment. The construction activities required for development of the greenhouses, cultivation beds, and associated infrastructure is not anticipated to generate a significant amount of GHG emissions. For comparison, a project proposing the construction of 100 single-family residences would fall well below the 1,100 $MTCO_2e$ annual threshold used by the BAAQMD and other air districts in the State (e.g., MCAQMD, SMAQMD, etc.) to determine whether GHG emissions would be significant. As discussed in Section XVII - TRANSPORTATION, the proposed project is estimated to generate up to 40 vehicle/truck trips per day. Mobile emissions are often the greatest source of emissions from land use projects. The number of trips and VMT from the project is minimal and would not be expected to generate significant GHG emissions. For comparison, a project that

generates 300 daily trips would not exceed the 1,100 $MTCO_2e$ annual threshold. Additionally, the project proposes to primarily use areas on the site for cultivation that were previously disturbed by past logging activity (e.g., log landings). As such, the project proposes to maintain the existing forestland on the project site, which would sequester carbon and has the potential to offset GHG emissions from the proposed cultivation and rural residential activity. Also, the proposed project would use natural sunlight for cultivation, instead of energy intensive artificial lighting, which significantly reduces potential GHG emissions from electricity use. Based on the discussion above, development of the project would have a less than significant impact on this resource category.

b) The proposed project involves the expansion of an existing cannabis cultivation operation. As a result, the proposed project could generate both direct and indirect GHG emissions. A GHG impact would be significant if GHG emissions from the proposed project would conflict with an applicable plan, policy, or regulation for the purpose of reducing GHG emissions. As noted in the Setting, a Climate Action Plan has not been adopted by Trinity County. For the proposed project, it is analyzed whether the emissions obstruct compliance with the GHG emission reduction goals in Assembly Bill (AB 32), Senate Bill 32 (SB 32), and Executive Order S-3-05 (EO S-3-05).

The project is subject to a myriad of state regulations applicable to project design, construction, and operation that would reduce GHG emissions, increase energy efficiency, and provide compliance with the California Air Resources Board (CARB) Climate Change Scoping Plan (CARB, 2017). The State of California has the most comprehensive GHG regulatory requirements in the United States, with laws and regulations requiring reductions that affect project emissions. Legal mandates to reduce GHG emissions from vehicles, for example, reduce project-related vehicular emissions. Legal mandates to reduce per capita water consumption and impose waste management standards to reduce methane and other GHGs from solid wastes are all examples of mandates that reduce GHGs.

According to CARB, in 2019, emissions from GHG emitting activities statewide were 418.2 million metric tons of carbon dioxide equivalent (MMTCO2e), 7.2 MMTCO2e lower than 2018 levels and almost 13 MMTCO2e below the 2020 GHG limit of 431 MMTCO2e (CARB, 2021).

As noted in the CARB Scoping Plan, quantitative thresholds for the exchange of CO_2 between the atmosphere and California's natural and working lands (e.g., natural ecosystems and agricultural lands) have not been developed (CARB, 2017). The CARB Scoping Plan focuses on the rehabilitation and maintenance of natural and working lands to increase and/or maintain carbon sequestration as part of the state's climate solution. The Scoping Plan notes that natural and working lands have potential for carbon sequestration. The Scoping Plan also notes that some natural and working lands may be sources of GHG emissions; however, reductions in these emissions are not part of the state's strategy for achieving the longer-term GHG reductions targets for 2030 and 2050 (CARB, 2017).

As described above, due to the size, design, location, and nature the proposed project, it is not anticipated that it would result in the generation of substantial GHG emissions during either construction or operation. The potential GHG emissions from construction activities, vehicle trips, electricity use, and solid waste would be minimal and are anticipated to fall below the 1,100 $MTCO_2e$ annual threshold used by the BAAQMD and other air districts in the State (e.g., MCAQMD, SMAQMD, etc.) to determine whether GHG emissions would be significant. In addition, the project proposes to primarily use areas on the site for cultivation that were previously disturbed by past logging activity (e.g., log landings). As such, the project proposes to maintain the existing forestland on the project site, which would sequester carbon and has the potential to offset GHG emissions from the proposed cultivation and rural residential activity. Also, the proposed project would use natural sunlight for cultivation, instead of artificial lighting, which significantly reduces potential GHG emissions from electricity use.

As designed and in compliance with existing regulatory requirements, the proposed project would not generate GHG emissions that would conflict with an applicable plan, policy, or regulation for the purpose of reducing GHG emissions. Therefore, the proposed project would result in a less than significant impact on this resource category.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Greenhouse Gas Emissions* were found to be less than significant.

Documentation and References

BAAQMD (Bay Area Air Quality Management District). 2017. *California Environmental Quality Act Air Quality Guidelines.* 2017.

CARB (California Air Resources Board). 2017. *2017 Climate Change Scoping Plan: The Strategy for achieving California's 2030 greenhouse gas reduction target.* January 20, 2017.

CARB. 2018a. *8th Edition, California Greenhouse Gas Emissions Inventory: 2000-2016. California Greenhouse Gas Emissions for 2000 to 2016, Trends of Emissions and Other Indicators.* 2018.

CARB. 2018b. *An Inventory of Ecosystem Carbon in California's Natural & Working Lands.* 2018 Edition.

CARB. 2021. California Greenhouse Gas Emissions from 2000 to 2019, Trends of Emissions and Other Indicators. July 28.

NCUAQMD (North Coast Unified Air Quality Management District). 2022. Air Quality Planning & CEQA. [Online]: http://ncuaqmd.org/index.php?page=aqplanning.ceqa. Accessed January 24, 2022.

SMAQMD (Sacramento Metropolitan Air Quality Management District). 2018. *CEQA Guide: Chapter 6 – Greenhouse Gas Emissions.* [Online]: http://www.airquality.org/LandUseTransportation/Documents/Ch6GHGFinal5-2018.pdf. Accessed January 24, 2022.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County Public Utility District (TPUD). 2022. *District History.* [Online]: https://www.trinitypud.com/about/history.aspx. Accessed January 24, 2022.

Trinity County. 2017. *Regional Transportation Plan.* October 2017.

IX. HAZARDS AND HAZARDOUS MATERIALS: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

Environmental Setting

Hazards are those physical safety factors that can cause injury or death, and while by themselves in isolation may not pose a significant safety hazard to the public, when combined with development of projects can exacerbate hazardous conditions. Hazardous materials are typically chemicals or processes that are used or generated by a project that could pose harm to people, working at the site or on adjacent areas. Many of these chemicals can cause hazardous conditions to occur should they be improperly disposed of or accidentally spilled as part of project development or operations. Hazardous materials are also those listed as hazardous pursuant to Government Code Section 65962.5.

Lists of hazardous materials are maintained by federal and State agencies and are available for public review. The US Environmental Protection Agency (USEPA) maintains a database of hazardous materials as well as radiological materials as part of its RCRAInfo database (USEPA, 2022). The State of California Department of Toxic Substances Control (DTSC) maintains a list of hazardous substances and contaminated sites as part of its Envirostor database (DTSC, 2022), as well as other hazardous and waste sites being overseen by the various State Water Resources Control Board which are inventoried in their Geotracker database (SWRCB, 2022). These databases are available to the public for review. No hazardous facilities or sites have been documented to be present at the project site or in the adjacent area.

The State of California Department of Toxic Substances Control (DTSC) is the administering agency and the Certified Unified Program Agency (CUPA) for Trinity County with responsibility for regulating hazardous materials handlers, hazardous waste generators, underground storage tank facilities, above ground storage tanks, and stationary sources handling regulated substances. A Hazardous Materials Business Plan (HMBP) is required of businesses in Trinity County that handle, use, generate, or store hazardous materials. The primary purpose of this plan is to provide readily available information regarding the location, type, and health risks of hazardous materials to emergency response personnel, authorized government officials, and the public. Large cases of hazardous materials contamination or violations are referred to the Central Valley Regional Water Quality Control Board (CVRWQCB) and the DTSC.

Under Government Code Section 65962.5, both the DTSC and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC and SWRCB lists identified no open cases of hazardous waste violations within one mile of the project site.

The EPA maintains the Enforcement and Compliance History Online (ECHO) program. The ECHO website provides environmental regulatory compliance and enforcement information for approximately 800,000 regulated facilities nationwide. The ECHO website includes environmental permit, inspection, violation, enforcement action, and penalty information about EPA-regulated facilities. Facilities included on the site are Clean Air Act (CAA) stationary sources; Clean

Water Act (CWA) facilities with direct discharge permits, under the National Pollutant Discharge Elimination System; generators and handlers of hazardous waste, regulated under the Resource Conservation and Recovery Act (RCRA); and public drinking water systems, regulated under the Safe Drinking Water Act (SDWA). ECHO also includes information about EPA cases under other environmental statutes. When available, information is provided on surrounding demographics, and ECHO includes other EPA environmental data sets to provide additional context for analyses, such as Toxics Release Inventory data. According to the ECHO program, the project site is not listed as having a hazardous materials violation.

The project site is not located within an airport land use plan and is not within two miles of a public airport or public use airport.

The CALFIRE Fire and Resource Assessment Program (FRAP), designates lands in three general classifications, "Moderate", "High" and "Very High" Fire Hazard Severity Zones. The FRAP designation for the project area is Very High Fire Hazard Severity Zone (VHFHSZ). Fire suppression for the area is provided by a combination of first responders such as CALFIRE (designated as a State Responsibility Area), with additional firefighting support from the nearby Salyer Volunteer fire department.

Impact Analysis

The following includes an analysis of environmental parameters related to *Hazards and Hazardous Materials* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) Small quantities of potentially hazardous substances (e.g., petroleum and other chemicals used to operate and maintain equipment, fertilizers, pesticides, etc.) are currently and would continue to be used at the project site. However, none of these materials will be stored at the project facilities in quantities to be considered a significant hazard. Fertilizers and soil amendments would be used during cultivation operations and are purchased and transported to the site as needed, and stored onsite. Pest management consists of applications of commercially available neem oil, sulfur, and citric acid. The products are listed by the California Department of Pesticide Regulation (CDPR) as "Legal to Use on Cannabis" (CDPR, 2017). Pursuant to 3 CCR Section 8106, the cultivation operation would adhere to pest management plan submitted to California Department of Food and Agriculture (CDFA). The proposed project would also be required to comply with 3 CCR Section 8307, which among other requirements, includes pesticide application and storage protocols.

   Application of fertilizers and pesticides would be used on cultivation areas only. Any used fertilizer and chemical containers would be disposed of according to manufacturer's requirements. The proposed project will also be subject to the requirements of the State Water Resources Control Board Cannabis Cultivation Waste Discharge Regulatory Program and the County Cannabis Ordinance. The SWRCB program and County ordinance have standard requirements applicable to cannabis cultivation operations that address impacts from the storage and use of hazardous materials. These include implementation of spill prevention, control, and countermeasures (SPCC) and the maintenance of appropriate cleanup materials onsite.

   Compliance with standard transport and handling procedures of the chemical manufacturers, and the existing regulatory requirements of the County cannabis ordinances, CDPR, and the SWRCB, would ensure that impacts from the proposed project would be less than significant.

b) The proposed project could expose workers, the public, or the environment to hazardous materials through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Small quantities of potentially hazardous substances (e.g., petroleum and other chemicals used to operate and maintain equipment, fertilizers, pesticides, etc.) are currently and would continue to be used at the proposed project site. Accidental releases of these substances could potentially contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard. Compliance with standard safety procedures, hazardous materials handling regulations, and pesticide application requirements would minimize potential impacts from the project. For

example, the proposed project would be required to comply with 3 CCR Section 8307, which among other requirements, includes pesticide application and storage protocols. As discussed above, the proposed project will also be subject to the requirements of the State Water Resources Control Board Cannabis Cultivation Waste Discharge Regulatory Program and the County Cannabis Ordinance. The SWRCB program and County ordinance have standard requirements applicable to cannabis cultivation operations that address impacts from the storage and use of hazardous materials. These include implementation of spill prevention, control, and countermeasures (SPCC) and the maintenance of appropriate cleanup materials onsite. Therefore, in compliance with existing regulatory requirements, impacts from the proposed project would be less than significant.

c) The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impacts would occur in this regard.

d) Pursuant to 3 CCR Section 8102, a hazardous materials record search was completed for the proposed premises. According to the DTSC Envirostor database, SWRCB Geotracker database, and USEPA RCRAInfo database, no hazardous facilities or hazardous materials contamination have been documented at the project site or in the adjacent area. As such, the proposed project is not located on a site which is included on a list of hazardous materials sites and would not create a significant hazard to the public or the environment. Therefore, the proposed project would result in no impacts to this resource category.

e) The project site is not located within an airport land use plan and is not within two miles of a public airport or public use airport. No impact would occur in this regard.

f) Based on the Trinity County General Plan Safety Element State Route 299 (SR-299) is considered a Major Evacuation Route. There are no indications at this time that the proposed project would impair implementation of, or physically interfere, with an adopted emergency response plan or emergency evacuation plan. The proposed project will not impact traffic intensity on along SR-299 or impair access to local roadways or surrounding properties. Impacts would be less than significant in this regard.

g) Portions of the site has been previously disturbed by timber harvest activities and agricultural activities. Development of the project will comply with State Fire Safe Standards for protection of life and property from wildfires through maintaining appropriate vegetation management around proposed structures, the availability and accessibility of onsite water storage (i.e., water storage totaling 1,331,500 gallons), and other actions required for fire protection/suppression actions as may be determined by the County or CALFIRE. Additionally, the Trinity County General Plan Safety Element discusses wildland fires and outlines Wildland Urban Interface Zones Fuels Treatment Goals that describe fuel treatment activities around residential and other structures (Trinity County, 2002). Through implementation of fire safe standards, the project will not be at significant risk of damage from wildfire and the project would not cause significant wildfire risk to the area from project related activities and be in compliance with the County General Plan Safety Element. Based on this evaluation the project would contribute to a less than significant impact related to increased wildfire risk in the area.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated *Hazards and Hazardous Materials* were found to be less than significant.

Documentation and References

CALFIRE (California Board of Forestry and Fire Protection). 2022. *Fire Hazard Severity Zone Viewer.* [Online]: https://egis.fire.ca.gov/FHSZ/. Accessed February 4,2022.

CALFIRE. *State Responsibility Area Viewer.* 2022. [Online]: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1. Accessed February 5, 2022.

CDPR (California Department of Pesticide Regulation). 2017. *Cannabis Pesticides that are Legal to Use*. [Online]: https://www.cdpr.ca.gov/cannabis. Accessed February 5, 2022.

CDPR. 2015. *Legal Pest Management Practices for Marijuana Growers in California*. 2015.

DTSC (California Department of Toxics Substances Control). 2022. *Envirostor Database*. [Online]: https://www.envirostor.dtsc.ca.gov/public/. Accessed February 5,2022.

SWRCB (State Water Resources Control Board). 2022. *Geotracker Database*. [Online]: https://geotracker.waterboards.ca.gov/. Accessed February 5,2022.

Trinity County. 2002a. *General Plan Safety Element.* Revised March 2002.

Trinity County. 2002b. *General Plan Circulation Element.* Revised 2002.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

USEPA (U.S. Environmental Protection Agency). 2022. *RCRA Database*. [Online]: https://enviro.epa.gov/facts/rcrainfo/search.html. Accessed February 5,2022.

X. HYDROLOGY AND WATER QUALITY: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) Result in substantial erosion or siltation on- or off-site; ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) Create or contribute runoff water which would exceed the capacity of existing planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) Impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

Environmental Setting

The proposed project site is a 143.6-acre property consisting of forestlands that have been previously disturbed by timber harvesting activities and cannabis activities. The project site is surrounded by undeveloped forest land with minimal development within the South Fork Trinity River watershed. The project site includes two small unnamed tributaries to the South Fork Trinity River. The California State Water Resources Control Board (SWRCB) has listed the South Fork Trinity River as temperature impaired on the Section 303(d) list and as sediment impaired having exceeded the EPA total maximum daily loads (PWA, 2021).

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline. The California Department of Water Resources (DWR) prioritizes groundwater basins in accordance with the provisions of California Water Code Section 10933(b). California's Groundwater (Bulletin 118) published by DWR is the State's official publication on the occurrence and nature of groundwater in California. The publication defines the boundaries and describes the hydrologic characteristics of California's groundwater basins. The project site is not located in a groundwater basin identified by the DWR. However, the nearest groundwater basin to project site is the Hoopa Valley Groundwater Basin (1-007), approximately 12 miles northwest of the project site (DWR, 2022). DWR has identified the Hoopa Valley Groundwater Basin as a "very low" priority groundwater basin and not at risk of critical overdraft (DWR, 2022).

Trinity County has identified Critical Water Resource Overlay Zones (CWR Zone) throughout the County. The CWR Zone is defined in County regulations as "an area where development may have a detrimental impact on water resources such as those resulting from extractions of ground and/or surface waters, which would be beyond the capability of the resource, or by contamination of ground or surface waters." The proposed project is not located within a CWR Zone designation (Trinity County, 2022).

Water is provided to the site by an existing, permitted 85-foot-deep groundwater well (Well Completion Report 1092844; Diamond Core Drilling, 2005) and two surface water gravity diversion points from an unnamed Class II tributary to the South Fork Trinity River (see Figures 2 and 3 in Appendix A). The Well Completion Report estimated the yield of the groundwater well to be 8 gallons per minute (GPM). A Lake and Streambed Alteration Agreement (LSAA; Notification No. 1600-2016-0019-

R1) was obtained for the surface water diversions from California Fish and Wildlife (CDFW) in 2016. The 2016 LSAA specifies that the stream diversion rate from both points of diversion combined shall not exceed 6 GPM. This condition applies cumulatively to both points of diversion because they are located on the same Class II stream. The 2016 LSAA also limits surface water diversion to no more than 200 gallons per day from June 15 to October 15 of each year.

Water from the groundwater well is used to fill six (6) onsite plastic water tanks (totaling 16,500 gallons) and an existing pond (275,000 gallons). From the storage tanks and ponds, water is gravity-fed through buried PVC water lines to the cultivation areas. Water lines do not cross any jurisdictional water features or drainages. The water line will serve proposed cannabis cultivation activities as well as potential fire suppression efforts.

The site maintains an existing permitted septic system, installed in December 2017, consisting of a 1,500-gallon concrete tank with five 50-foot-long high-capacity leach field chambers. This system which was designed for the existing 3-bedroom residence would continue to serve the subject property, treating typical residential wastewater from the residence and daily workers. The applicant also proposes to bring portable toilet(s) onsite if the number of employees will exceed the design capacity of the existing septic system. If determined to be necessary by the County Environmental Health Department, the septic system may need to be upgraded to handle any increase in wastewater discharge from the new dwelling and expanded cultivation operation.

Flood zones are geographic areas that the Federal Emergency Management Agency (FEMA) has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM). Each flood zone reflects the anticipated type of flooding in the area. According to the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) Panel No. 06105C0725E, the portions of the project site proposed for development are located outside of a regulated flood hazard zone (FEMA, 2010). The entire project site is shown as being in Zone D – Possible but Undetermined Flood Hazard. The Zone D designation indicates that the area is generally sparsely populated and generally no flood analysis has been undertaken. Flooding can occur in Zone D but is generally limited to specific areas.

Impact Analysis

The following includes an analysis of environmental parameters related to *Hydrology and Water Quality* on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The proposed project is served by an existing, permitted septic system for the treatment of domestic wastewater. The applicant also proposes to bring portable toilet(s) onsite if the number of employees will exceed the design capacity of the existing septic system. The septic system must be designed and operated in compliance with the requirements of the County Environmental Health Department. If determined to be necessary by the County Environmental Health Department, the septic system may need to be upgraded to handle any increase in wastewater discharge from the new dwelling and expanded cultivation operation. Impacts related to the continued operation of the existing septic system or to upgrades determined to be necessary by the County Environmental Health Department are considered to be less than significant.

   Cannabis cultivation can degrade water quality in various ways, including discharges of sediment to surface water from roads or other land improvements; discharges of fertilizers, pesticides, and other chemicals to surface waters or groundwater; discharges of fertilizers and pesticides to surface water or groundwater; spills or leaks of fuels, lubricants, hydraulic oil, or other chemicals associated with pumps, construction, or other equipment; and discharges of trash, household refuse, or domestic wastewater. In addition, construction of ponds, and grading for other water storage devices and structures can lead to erosion and thus further degradation of surface water quality during construction. As previously stated above, the SWRCB has listed the South Fork Trinity River as temperature impaired on the Section 303(d) list and as sediment impaired having exceeded the EPA total maximum daily loads.

SWRCB Order WQ 2019-0001-DWQ contains requirements for cannabis cultivation on sites greater than 2,000 square feet. These requirements include plans that address site erosion and sediment control, disturbed areas stabilization, nitrogen management, implementation of best practical treatment or control (BPTC) measures, site closure procedures, and monitoring and reporting requirements. In addition, the Order contains requirements for land development maintenance, erosion control, drainage features, stream crossing installation and maintenance, soil disposal and spoils management, and roadway design and maintenance. In addition, the County's Cannabis Program includes the following standards that address water quality for cultivation operations:

- The cultivation of cannabis shall not create erosion or result in contaminated runoff into any stream, creek, river, or body of water. If the designated area has more than a 35 percent slope, the applicant shall apply for a Tier 2 cultivation under the North Coast RWQCB Order #2015-0023, or regulations established by SWRCB (Section 315-843[6][d]).

- Applicant shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity for construction projects that disturb 1 or more acres of land surface, specifically for new site preparation and development (Section 315-423[6][o]).

Existing cannabis cultivation activities at the project site were initially regulated by the North Coast Regional Water Quality Control Board (NCRWQCB) under Order No. 2015-0023 and were required to transition to regulations of SWRCB Order No. WQ 2019-0001-DWQ (previously WQ 2017-0023-DWQ) by July 1, 2019. Additionally, the Cannabis Ordinances developed by the County identifies specific requirements for water use and water quality, including compliance with Senate Bill 94 (SB 94) and any applicable NCRWQCB or SWRCB regulations. These existing regulatory requirements address implementation of all applicable best practicable treatment or control (BPTC) measures. In addition, the proposed project obtained a Water Resource Protection Plan (WRPP) which outlines best management practices (BMPs) to prevent, minimize, and control the discharge of waste and other controllable water quality factors associated with site restoration/cleanup/remediation and site operations and maintenance. The Site Management Plan Technical Report (PWA, 2020) for the project describes how the applicant is implementing the Best Practicable Treatment or Control (BPTC) measures listed in Attachment A of the State Water Resource Control Board's Cannabis Cultivation Policy.

Pursuant to 3 CCR Section 8102, the applicant will provide evidence of enrollment and compliance with the SWRCB and/or NCRWQCB to the California Department of Food and Agriculture (CDFA). Furthermore, the project would require compliance with any other conditions requested by California Department of Fish and Wildlife (CDFW) or the SWRCB pursuant to 3 CCR Section 8304. Chemical materials for pest management and other uses will be stored and used by the proposed project. As described in Section IX - HAZARDS AND HAZARDOUS MATERIALS, the proposed project would be required to comply with 3 CCR Section 8307, which among other requirements, includes pesticide application and storage protocols effective for protecting surface water and groundwater.

Compliance with these existing regulatory requirements will ensure the proposed cultivation operation will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Based on the above, impacts from the proposed project would be less than significant.

b) The County's Cannabis Program includes requirements regarding water supply. With regards to cultivation activities, applicants must comply with all state laws, including SB 94, regarding surface water, including but not limited to, water used for the cultivation of cannabis needs to be sourced onsite from a permitted well or diversion. If using a permitted well, a copy of the Trinity County well permit shall be provided. The cultivation of cannabis shall not utilize water that has been or is illegally diverted from any stream, creek, river, or water source. If water is hauled it shall be for emergencies, as defined as a sudden, unexpected occurrence, and a bill of sale shall be kept on file from a water district or legal water source (Cultivation) (Section 315-843[6][c]).

Water is currently provided to the site by an existing, permitted 85-foot groundwater well and two surface water gravity diversion points from an unnamed Class II tributary to the South Fork Trinity River (see Figures 2 and 3 in Appendix A). The amount of water obtained from each source is regulated by the County, the State Water Board, and by the applicant's WRPP. The yield of the groundwater well is eight (8) gallons per minute (GPM). The 2016 LSAA for the surface water diversions specifies that the stream diversion rate from both points of diversion combined shall not exceed 6 GPM. This condition applies cumulatively to both points of diversion because they are located on the same Class II stream. The

2016 LSAA also limits surface water diversion to no more than 200 gallons per day from June 15 to October 15 of each year. There are no additional water sources requested as part of this project.

As mentioned above, the project site is not located within a CWR Zone designated by Trinity County or a groundwater basin identified by the DWR. The nearest groundwater basin to project site is the Hoopa Valley Groundwater Basin (1-007), approximately 12 miles northwest of the project site (DWR, 2022). DWR has identified the Hoopa Valley Groundwater Basin as a "very low" priority groundwater basin and not at risk of critical overdraft (DWR, 2022).

The EIR prepared for the County Cannabis Ordinance evaluated whether the Cannabis Program could result in groundwater supply impacts (pgs. 3.10-32 to 3.10-34 and pgs. 4-11 to 4-13). To reduce potential groundwater impacts from implementation of the Cannabis Program, mitigation was included requiring the reporting of annual monitoring of groundwater conditions to the County as part of the annual inspections required under the ordinance. This monitoring is intended to identify if onsite well operations are resulting in groundwater drawdown impacts and what adaptive measures would be implemented to recover groundwater levels and protect adjacent wells. Should this monitoring data identify potential drawdown impacts on adjacent well(s), surface waters, and waters of the state and sensitive habitats, and indicate a connection to operation of the onsite wells, the cannabis operators, in conjunction with the County, shall develop adaptive management measures to allow for recovery of groundwater levels that would protect adjacent wells and habitat conditions that could be adversely affected by declining groundwater levels. Adaptive management measures may include forbearance (e.g., prohibition of groundwater extraction from the months of May to October), water conservation measures, reductions in onsite cannabis cultivation, alteration of the groundwater pumping schedule, or other measures determined appropriate. Adaptive management measures will remain in place until groundwater levels have recovered and stabilized based on annual monitoring data provided to the County as part of subsequent annual inspections. Any monitoring cannabis cultivation irrigation wells that demonstrate hydrologic connection to surface waters shall be subject to surface water diversion requirements and restrictions in SWRCB Order WQ 2019-0001- DWQ.

Because implementation of this mitigation measure would be required as part of annual commercial cannabis operations permit renewals (see Cannabis Ordinance Section 17.43G.030.X), it would provide ongoing protection of local groundwater resources and offset cumulative groundwater impacts. Thus, implementation of this requirement of the Cannabis Program would prevent potential cumulative impacts from cannabis operations in the project area. As the existing regulations described above ensure that water provided for the proposed project would not interfere or impede sustainable groundwater recharge and management, impacts would be less than significant.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on or off-site:

The project activities will be required to comply with the standard provisions of the County Cannabis Ordinances as well as the State Water Resources Control Board Cannabis Cultivation Waste Discharge Regulatory Program which requires dischargers to implement Appendix B: *Best Management Practices for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects*. Implementation of these standard conditions will result in the protection of water quality and not impact drainage patterns or surface runoff. Therefore, impacts from the proposed project would be less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site:

The project proposes new structures (e.g., harvest storage and processing building) that would increase the amount of impervious surface on the project site. As noted above, the project would be required to comply with the State Water Resources Control Board Cannabis Cultivation Waste Discharge Regulatory Program. The SWRCB program requires the management of stormwater runoff to prevent substantial increases in runoff that would result in flooding. In compliance with these requirements, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Therefore, impacts from the proposed project would be less than significant.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff:

Due to the rural location of the project and the nature of the agricultural activities there are no stormwater drainage systems which would be impacted by the proposed project. Stormwater runoff will be managed in compliance with the requirements of the State Water Resources Control Board Cannabis Cultivation Waste Discharge Regulatory Program, which would ensure the proposed project does not result in substantial additional sources of polluted runoff. Therefore, impacts from the proposed project would be less than significant.

iv) Impede or redirect flood flows:

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Panel No. 06105C0725E; dated 1/20/2010), flood hazard zones in the vicinity of the project are classified as Zone D, which is the area where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted (FEMA, 2010). As such, the project site is not in a special flood hazard area and is not anticipated to impede or redirect flood flows. Therefore, impacts from the proposed project would be less than significant.

d) There are no dams located in the general vicinity of the proposed project. In addition, there are no levees near the proposed project. The threat of a tsunami wave is not applicable to inland areas; there is no potential for the generation of a seiche. No impact would occur in this regard.

e) Refer to impact discussions under subsections a) and b) above. No impact would occur in this regard.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated *Hydrology and Water Quality* were found to be less than significant.

Documentation and References

DWR (California Department of Water Resources). 2022. *SGMA Basin Prioritization Dashboard*. [Online]: https://gis.water.ca.gov/app/bp-dashboard/final/. Accessed February 5, 2022.

FEMA (Federal Emergency Management Agency). 2010. *Flood Insurance Rate Map (FIRM) Panel No. 06105C0725E*. January 20, 2010.

NCRWQCB (North Coast Regional Water Quality Control Board). 2015. NCRWQCB *Order No. 2015-0023.* 2015.

PWA (Pacific Watershed Associates). 2021. *Biological Resource Assessment for 5200 Lower South Fork Road*. October 2021.

PWA. 2020. *Site Management Plan Technical Report Order WQ 2019-0001-DWQ for APN 008-080-32*. March 2020.

SWRCB (State Water Resources Control Board). 2017. *SWRCB No. WQ 2017-0023-DWQ.* [Online]: https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/finaladoptedcango101717.pdf

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity Count. 2022. *Trinity County Water Resources Application*. [Online]: https://trinitycounty.maps.arcgis.com/apps/Viewer/index.html?appid=514684c4928a412fa86bef1d37fd3750. Accessed February 8, 2022.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

XI. LAND USE AND PLANNING: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

Environmental Setting

The land encompassing the project area has been historically used for timber harvest. The 143.6-acre project site was created from a subdivision in 2011. The Trinity County General Plan designates the site as Resource (RE) with an underlying zoning designation of Timber Production Zone (TPZ). The site is surrounded by largely undeveloped land.

Both the County General Plan and Zoning Districts did not specifically anticipate development of commercial cannabis when these land use plans and zoning districts were developed. In response to California State Law that allows commercial cannabis activities under permitted and controlled conditions, Trinity County developed County-specific ordinances to regulate commercial cannabis cultivation, testing, nurseries, manufacturing, distribution, microbusiness, events, and sales within the County. Ordinances 315-823, 315-829, 315-830, 315-841, and 315-849 regulate cultivation and are all specifically titled "*An Ordinance of the Board of Supervisors of the County of Trinity Amending Zoning Ordinance No. 315 Creating Section 28: Commercial Cannabis Cultivation Regulations*." All of these ordinances are referred to, collectively, in this section as the "Cannabis Ordinance."

The Cannabis Ordinance, in combination with the provisions of the General Plan and requirements of the County Code, is used to determine appropriate locations and operating standards for cannabis operations in Trinity County. An applicant can apply for a Use Permit for cannabis cultivation operations under the Cannabis Ordinance, as well as a variance to specific provisions and requirements of the Cannabis Ordinance, with approval at the discretion of the County Planning Commission and Board of Supervisors.

The project will require a variance as the project occurs within the 500-foot setback from the property line; however no sensitive receptors are expected to be affected by the project as the nearest sensitive receptor is a residence on an adjacent parcel which occurs over 800 feet from the cultivation area.

Impact Analysis

The following includes an analysis of environmental parameters related to *Land Use and Planning* on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The project does not have the potential to physically divide an established community; the project does not propose to divide land or rezone the parcel. No impact would occur in this regard.

b) The County's General Plan serves as the overall guiding policy document for land use and development. The subject property is designated in the General Plan as Resource (RE) land and is zoned Timber Production Zone (TPZ). The parcels immediately surrounding the project are designated by the County's General Plan as Resource (RE) and are zoned as Timber Production Zone (TPZ) and Unclassified (U). As the proposed project consists of agricultural related activities onsite, the project is considered consistent with the County TPZ zoning.

   The proposed cultivation area does not comply with the Trinity County Code Section 17.43.050.A.8, which requires a 500-foot setback from the property lines for a medium (up to one acre of canopy) cannabis cultivation site (see Figure 2 in Appendix A). To allow cultivation in this area, the applicant has submitted an application for a variance. The basis for

the variance request is that due to the narrow and steep aspects of the property, the roads and canopy areas are within the required setback. As a condition of approval of the use permit, the variance must be approved before the applicant can proceed with cultivation in the proposed cultivation area requiring the variance. The purpose of the 500-foot property line setback requirement provision in Trinity County Code Section 17.43.050.A.8. is to mitigate potential impacts (e.g., odors, noise, lighting, fugitive dust, etc.) to adjacent neighbors from cannabis cultivation activities.

The project site is surrounded by vacant undeveloped land and there are no structures or sensitive receptors immediately adjacent to the site. The nearest sensitive receptor (residence) is located 215 from the west property line and over 800 feet from the nearest proposed cultivation area. Given this distance, the reduced setback from the property line is not anticipated to result in significant impacts from cultivation activities. Once a variance is issued by the County, the variance is evaluated on an annual basis. Should impacts such as odors, noise, lighting, fugitive dust, etc., from the project become an issue, the County could terminate the variance approval and require relocation of the cultivation activity or require additional mitigation measures to be incorporated into the project to reduce the impacts to a less than significant level.

Based on the proposed location and uses, implementation of the proposed project would not conflict with a plan, policy, or regulation for the purpose of mitigation an environmental effect. Impacts are considered less than significant in this regard.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Land Use and Planning* were found to be less than significant.

Documentation and References

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1988. *General Plan – Land Use Element.* 1988.

XII. MINERAL RESOURCES: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, specific plan or other land use plan?				X

Environmental Setting

A mineral resource is land on which known deposits of commercially viable mineral or aggregate deposits exist. The designation is applied to sites determined by the State Division of Mines and Geology as being a resource of regional significance and is intended to help maintain any quarrying operations and protect them from encroachment of incompatible uses.

Mineral production has historically been a significant part of the economy of Trinity County but has waned in the last 75 years. Historically, the County has seen a wide array of mineral production, including asbestos, chromite, copper, sand and gravel gold, limestone, and manganese to name a few. The proposed project site has historically been used for residential, agricultural, and timber harvest purposes. The project area has not been designated by the State or Trinity County as an area of significant mineral resources or an area of locally important minerals (Trinity County, 1973; CGS, 2020).

Impact Analysis

The following includes an analysis of environmental parameters related to *Mineral Resources* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a-b) A mineral resource is land on which known deposits of commercially viable mineral or aggregate deposits exist. The designation is applied to sites determined by the California Geological Survey as being a resource of regional significance and is intended to help maintain any quarrying operations and protect them from encroachment of incompatible uses. The site has not been designated as an important mineral resource recovery site by a local general plan, specific plan, or other land use plan or by the State of California (Trinity County, 1973; CGS, 2020). The project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State and would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur in this regard.

Mitigation Measures

No mitigation measures are required.

Findings

In the course of the above evaluation, impacts associated with *Mineral Resources* were found to not be significant because of the inability of a project of this scope to create such impacts or the absence of project characteristics producing effects of this type.

Documentation and References

CGS (California Geological Survey). 2020. *CGS Information Warehouse - Mineral Land Classifications.* 2020.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1973. *General Plan – Open Space and Conservation Element.* April 1973.

XIII. NOISE: *Would the project result in:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive ground borne vibration or ground borne noise levels			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Environmental Setting

Noise impacts are those that exceed general plan or other local ordinances developed to provide reasonable control of noise to residences, parks, open spaces and other specific designated sites and land uses. Noise sources typically include roadways, freeways, schools, industrial and commercial operations, and other facilities that can generate noise. The Trinity County General Plan Noise Element and the Cannabis Ordinances provide guidelines and direction for noise sources and attenuation requirements for various uses. Projects proposed for development within the County will have their development evaluated to determine potential conformance with the Noise Element and as necessary, specific conditions of approval or mitigations will be placed on projects.

Table VII (Maximum Allowable Noise Exposure-Stationary Noise Sources) of the General Plan Noise Element contains maximum allowable noise exposure levels for stationary noise sources (see Table 3 below). Stationary noise sources are defined by the Noise Element (pg. 3) as "Any fixed or mobile sources not preempted from local control by existing federal or state regulations. Examples of such sources include industrial and commercial facilities, and vehicle movements on private property" (Trinity County, 2003).

Table 3
Maximum Allowable Noise Exposure-Stationary Noise Sources

	Daytime (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (Leq), dB	55	50	45
Maximum Sound Level (Lmax), dB	75	70	65

Policy 4.2.4 of the General Plan Noise Element addresses compliance with the noise standards in Table VII, which states the following: "*Noise created by proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table VII at noise-sensitive land uses*."

In the vicinity of the project, noise generation sources are varied and consist of vehicle traffic along SR-299 and South Fork Road and maintenance activities on surrounding properties. One residence is located on the project site. The closest offsite residence is located at 5350 South Fork Road, approximately 215 feet southwest of the project's parcel boundary and over 800 feet from the nearest proposed cultivation activity. There are no other dwellings located within 1,000 feet of the project site.

The project site is not located within an airport land use plan and is not within the vicinity of a private airstrip or within two miles of a public airport or public use airport.

Impact Analysis

The following includes an analysis of environmental parameters related to *Noise* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides

justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department and other agency staff, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The nearest offsite sensitive receptor is a residence located 215 feet from the site's property line (over 1,000 feet away from the nearest cannabis production area onsite).

   Construction. Due to the relatively small size of construction operations, it is anticipated that one piece of heavy off-road equipment would be used at a time (e.g., loader, grader, scraper, dozer, or something with a comparable engine size and power rating). It is anticipated that cultivation site construction activities would last approximately 4 weeks and the use of heavy off-road equipment would occur for approximately 2 weeks. Additionally, minor amounts of noise could be generated from the development of hoop-houses for cultivation, but this noise is time-limited to facility construction and daytime hours, and then is ceased.

   Operation. Typical cannabis cultivation operations are not considered a significant noise generation source because the daily activities are generally hand operations with minimal equipment use. There are currently two (2) EU 2000i portable generators onsite; no additional generators are proposed. The generators are approximately 2,000 watts with inverters, which is equivalent to 2.7 HP (horsepower). Each generator will be located within a covered structure offering secondary containment and further dampening noise levels from operation. Hours of operation will typically be limited to daytime hours.

   Generators will be required to comply with 3 CCR Section 8306, which establishes requirements for the use and registration of generators rated above or below fifty (50) horsepower. Generator use will require compliance with California Department of Food and Agriculture (CDFA) and Trinity County regulations that impose limitations on generator use. For example, the proposed project must be consistent with performance standards in Section 17.43.060.B of the County Code, which requires proposed cannabis operations to comply with the noise level standards set forth in the County General Plan (55 dBA from 7:00 AM to 7:00 PM, and 50 dBA from 7:00 PM to 7:00 AM) measured at the property line, except that generators associated with a commercial grow are not to be used between 10:00 PM and 7:00 AM.

   Based on the distance to the nearest sensitive receptors, implementation of standard conditions of the various cannabis ordinances, and review by County staff for compliance during operations, noise levels from the proposed project are not anticipated to exceed the noise standards in the General Plan Noise Element at the nearest noise-sensitive land uses. Impacts are considered less than significant in this regard.

b) Groundborne vibrations are usually associated with heavy vehicle traffic (including railroad traffic), and with heavy equipment operations. The proposed project does not include activities that would result in groundborne vibration, such as pile driving or heavy construction equipment. Some minor groundborne vibration may occur during construction and operation of the proposed project but would not be considered excessive or have the potential to cause damage to structures. Impacts are considered less than significant in this regard.

c) The proposed project is not located within the vicinity of a private or public airport or airstrip. No impact would occur in this regard.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Noise* were found to be less than significant.

Documentation and References

USEPA (Environmental Protection Agency). 1981. *Noise Effects Handbook.* Revised 1981. [Online]: www.nonoise.org/library/handbook/handbook.htm

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 2003. *General Plan – Noise Element.* October 2003.

XIV. POPULATION AND HOUSING: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Environmental Setting

Trinity County has a population of approximately 16,112 persons based on the 2020 US Census Data. The median household income is $40,846 per year (US Census, 2022). Housing throughout the project area is primarily individual rural residences on larger parcels of land.

Impact Analysis

The following includes an analysis of environmental parameters related to *Population and Housing* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) Implementation of the proposed project would result in the development and use of existing lands and facilities, with no new housing being proposed. The proposed expansion would employ a maximum of nine (9) employees (some permanent and some seasonal) each year. The applicant proposes to use the local labor force within the County, and employees will commute to the site each day. If temporary employees do not already live in the area, they would be required to find offsite housing as no additional housing is proposed by the project. Based on the information provided, and evaluation of the area, there are no growth-inducing impacts associated with the proposed project. No impact would occur in this regard.

b) The project parcel is currently used for cannabis cultivation with infrastructure remaining from previous uses (i.e., groundwater well, septic system, etc.). The proposed project would not displace any people or existing housing, as none are located at the project site. No impact would occur in this regard.

Mitigation Measures

No mitigation measures are required.

Findings

In the course of the above evaluation, impacts associated with *Population and Housing* were found to not be significant because of the inability of a project of this scope to create such impacts or the absence of project characteristics producing effects of this type.

Documentation and References

US Census (United States Census Bureau). 2022. *American Fact Finder.* [Online]: https://data.census.gov/cedsci/profile?g=0500000US06105. Accessed: February 4, 2022.

XV. PUBLIC SERVICES: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
Fire Protection?			X	
Police Protection?			X	
Schools?			X	
Parks?				X
Other public facilities?			X	

Environmental Setting

The 143.6-acre project site is located within Trinity County, south of the town of Salyer. Primary site access is provided via South Fork Road via State Route 299 (SR-299). The land encompassing the project area has been historically used for timber harvest; the existing parcel is the result of a subdivision of a larger parcel in 2011. The site is surrounded by largely undeveloped land.

Fire protection is provided to the proposed project site by CALFIRE, and the nearest volunteer fire department is the Salyer Volunteer Fire Department which provides mutual aid services. Law enforcement to the area is provided by the Trinity County Sheriff's Department and the California Highway Patrol. The nearest medical facility is the Six Rivers Medical Clinic in Willow Creek approximately 10 miles northwest of the proposed project. The Klamath Trinity Joint Unified School District and Burnt Ranch Elementary School District both provide primary education to students in the area. There are no developed parks in the vicinity of the project site.

Impact Analysis

The following includes an analysis of environmental parameters related to *Public Services* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for:

Fire and Police Protection:

Fire and police protection services to the proposed project are currently provided by County, State and federal agencies and private emergency responders. Development of the project is not expected to significantly increase the demand for these protection services. A security plan is required for this operation and must be approved by the County Board of Supervisors, as a standard condition of approval, after the Conditional Use Permit is issued. Impacts are less than significant in this regard.

Schools:

As described above under *Environmental Setting*, the Klamath Trinity Joint Unified School District and Burnt Ranch Elementary School District both provide primary education to students in the area. While the development of this project could attract employees with families that may have school age children, and those students may contribute to the total student enrollment in these schools, the implementation of the proposed project is not expected to result in a significant increase in the number of school-age children as the result of the proposed nine (9) total employees who work and may also reside within the school districts. Impacts are less than significant in this regard.

Parks:

There are no developed parks in the vicinity of the project site, and the proposed project will not increase the intensity of the land use, impacts to parks and recreational facilities in the project area would remain at existing conditions; no new residential uses are proposed. The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities. No impact would occur in this regard.

Other public facilities:

The proposed project does not involve a substantial change in the land use, does not substantially increase the numbers of people employed in the region, and does not create or require additional housing or related facilities, an increased demand on public facilities is unlikely to occur. Impacts are less than significant in this regard.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Public Services* were found to be less than significant.

Documentation and References

CALFIRE (California Board of Forestry and Fire Protection). 2022. *Fire Hazard Severity Zone Viewer.* [Online]: https://egis.fire.ca.gov/FHSZ/. Accessed February 4,2022.

CALFIRE. *State Responsibility Area Viewer.* 2022. [Online]: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1. Accessed February 4, 2022.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 2002. *General Plan – Safety Element.* Revised March 2002.

Trinity County Office of Education (TCOE). 2022. [Online]: www.tcoek12.org. Accessed February 4, 2022.

XVI. RECREATION:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Environmental Setting

There are no developed recreation specific parks or facilities near the project. The nearest developed site is the Burnt Ranch Elementary School that has play equipment and sports fields. Other dispersed recreation facilities are day use sites and river access points along the Trinity River.

Impact Analysis

The following includes an analysis of environmental parameters related to *Recreation* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The proposed project does not propose a land use that would add significant new numbers of people that would require housing and ancillary recreation facilities. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. No impact would occur in this regard.

b) The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. No impact would occur in this regard.

Mitigation Measures

No mitigation measures are required.

Findings

In the course of the above evaluation, impacts associated with *Recreation* were found to not be significant because of the inability of a project of this scope to create such impacts or the absence of project characteristics producing effects of this type.

Documentation and References

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 1973. *General Plan – Open Space and Conservation Element.* April 1973.

USDA (United States Department of Agriculture, Forest Service). 2022. *Shasta-Trinity National Forest, Recreation*. [Online]: https://www.fs.usda.gov/recmain/stnf/recreation. Accessed. February 5, 2022.

XVII. **TRANSPORTATION**: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Environmental Setting

The project site is located on private property that has existing access to South Fork Road which intersects with State Route 299 (SR-299), the main east/west transportation route in the region. The Trinity County General Plan Circulation Element was last updated in 2002 to address changes to state requirements for regional transportation planning and to address other changes to the Circulation element. The Circulation Element does not address vehicle miles traveled (VMT).

Public transit services are provided by the County through Trinity Transit, which provides daily bus service between Weaverville and Willow Creek with two stops in Salyer. Other private transit carriers also operate in Trinity County to provide services to the elderly, disabled, school children and others (Trinity Transit, 2020). Due to the location of the project site, there are no pedestrian and bicycle facilities or transit services adjacent to the site.

Impact Analysis

The following includes an analysis of environmental parameters related to *Transportation* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a-b) Project approval would allow for the expansion of cannabis cultivation around existing cultivation sites. As this project does not propose the development of new roads or easements there is no conflict with the current Circulation Element of the General Plan. The facility is expected to employ a maximum of nine (9) employees during peak harvest season; this will not cause a significant increase in traffic or require changes to any roadways, public transit, or pedestrian facilities.

Construction. Construction traffic for the proposed project would result in a short-term increase in construction-related vehicle trips on SR-299 and South Fork Road. Construction would result in vehicle trips by construction workers, haul-truck trips for delivery, and disposal of construction materials and spoils to and from construction areas. Due to the limited amount of development proposed by the project, construction activities would not result in substantial adverse effects or conflicts with the local roadway system.

Operation. As noted above, a maximum of nine (9) total employees are anticipated for the expanded cultivation operation. The employees would not live onsite and would commute to work each day. The proposed project is estimated to generate up to 40 vehicle/truck trips per day. This will include 36 employee vehicles trips (conservative estimate of 4 trips per day per employee; 2 trips for commuting to work and 2 trips during lunch hour), 2 trips for the import of agricultural materials and supplies needed for the cultivation operation (1 in/1 out), and 2 trips for the export of unprocessed cannabis plants/flower (1 in/1 out). Employees are presumed to be from the local Trinity County population and would not cause significant additional traffic in the area or vehicle miles traveled (VMT). The estimated vehicle trips from the proposed project are not anticipated to cause a significant increase in traffic or require changes to any roadways, public transit, or pedestrian/bicycle facilities.

The Governor's Office of Planning and Research (OPR) has developed a screening threshold to determine when detailed analysis is needed due to the potential for a project to generate a potentially significant level of VMT. The threshold states that projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact (OPR, 2018). As noted above, the proposed project is estimated to generate approximately 40 vehicle/truck trips per day, which is well below the screening threshold recommended by OPR. For this reason, a detailed analysis of VMT impacts is not included in this Initial Study and it is determined that the project would result in less than significant transportation impacts during operation.

Therefore, the proposed project would not result in conflicts with plans or policies addressing the circulation system and would not conflict with CEQA Guidelines Section 15064.3, subdivision (b) during either construction or operation. As such, less than significant impacts would occur for these resource categories.

c) The proposed project does not propose any new roads and does not propose or require any realignment of existing roads that might cause hazards due to a geometric design feature. The project site is currently used for cannabis cultivation, and no incompatible uses have been identified that would result in significant hazards with implementation of the proposed project. Impacts would be less than significant in this regard.

d) Adequate existing access is provided to the site with State, County, and onsite private roads. The project does not change the existing access to the project site; therefore, the ability for emergency vehicles and personnel to access the subject property will remain at existing condition levels upon completion of the proposed project. The project will be required to comply with State and local Fire Safe Standards and applicable regulations for emergency vehicle access to the project sites including implementation of requirements by the Trinity County Department of Transportation and as directed by CALFIRE for compliance with State Fire Safe Standards. In compliance with these existing regulatory requirements, emergency access to the site would be adequate and impacts from the proposed project would be less than significant.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

In the course of the above evaluation impacts associated with *Transportation* were found to be less than significant.

Documentation and References

Governor's Office of Planning and Research (OPR). 2018. *Technical Advisory – On Evaluating Transportation Impacts in CEQA.*

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 2002. *General Plan – Circulation Element.* Revised 2002.

Trinity County Transit. 2020. [Online]: http://trinitytransit.org/. Accessed February 5, 2022.

XVIII. TRIBAL CULTURAL RESOURCES: *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		**X**		
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		**X**		

Environmental Setting

Assembly Bill (AB) 52 was enacted on July 1, 2015 and establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (Public Resources Code Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource when feasible (PRC Section 21084.3).

Public Resources Code Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and meets either of the following criteria:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California cities, counties, and tribes regarding tribal cultural resources. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

The purpose of the consultation is to determine whether a proposed project may result in a significant impact to tribal cultural resources that may be undocumented or known only to the tribe and its members. As set forth in PRC Section 21080.3.1(b), the law requires:

"Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation."

Consultation and correspondence with various culturally affiliated Tribal groups and agencies were conducted as in accordance with Public Resources Code (PRC) Section 21080.3.1 (AB 52). On February 18, 2020, the County initiated environmental review under the California Environmental Quality Act (CEQA) for the proposed project. The County sent certified project notification letters to he Nor-Rel-Muk Nation, Wintu Tribe of Northern California, Wintu Educational and Cultural Council and the Redding Rancheria, on February 18, 2020, pursuant to PRC Section 21080.3.1, notifying that the project was under review and to provide the Tribes 30 days from the receipt of the letter to request consultation on the project in writing. No responses were received requesting initiation of consultation under the provisions of AB 52.

Impact Analysis

The following includes an analysis of environmental parameters related to *Tribal Cultural Resources* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) Tribal consultation pursuant to AB 52 was initiated on February 18, 2020 with the Nor-Rel-Muk Nation, Wintu Tribe of Northern California, Wintu Educational and Cultural Council and the Redding Rancheria. No responses were received from these entities requesting initiation of consultation under the provisions of AB 52. Results from the intensive-level pedestrian survey and associated record search did not identify any prehistoric or historic archaeological sites, ethnographic sites, or historic-era built environment resources on the project site (ARS, 2020).

   However, there remains the possibility that tribal cultural resources could exist in the area and may be uncovered during project development. To prevent potential impacts to unknown tribal cultural resources at the project site, an inadvertent discovery protocol is included as Mitigation Measure CR-1 (see Section V – CULTURAL RESOURCES). With the proposed mitigation measure, the project will not cause a substantial adverse change in the significance of a tribal cultural resource. Therefore, the proposed project would result in a less than significant impact with mitigation incorporated.

b) Based on the above information, Trinity County (as lead agency) has determined that there are no known tribal cultural resources present on the project site that are considered significant to a California Native American Tribe. However, there remains the possibility that tribal cultural resources could exist in the area and may be uncovered during project development. To prevent potential impacts to unknown tribal cultural resources at the project site, an inadvertent discovery protocol is included as Mitigation Measure CR-1 (see Section V – CULTURAL RESOURCES). With the proposed mitigation measure, the project will not cause a substantial adverse change in the significance of a tribal cultural resource. Therefore, the proposed project would result in a less than significant impact with mitigation incorporated.

Mitigation Measures

Mitigation Measure CR-1. If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 50 feet of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material, and offered recommendations for further action.

Findings

In the course of the above evaluation impacts associated with *Tribal Cultural Resources* were found to be less than significant. Mitigation measures for the protection of currently unknown but discovered resources are provided for in Section V – CULTURAL RESOURCES.

Documentation and References

ARS (Archaeological Research and Supply Company). 2020. *Cultural Resources Investigation of the Salyer Kahan Property*. May 2020.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

XIX. UTILITIES AND SERVICE SYSTEMS: *Would the project:*	Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?			X	

Environmental Setting

Limited public utilities and service systems are provided and available in the area of the project. The project site is currently provided power from Pacific Gas & Electric (PG&E), onsite solar, and generators for backup power only. There are currently two (2) generators at the project site; no additional generators are proposed. The Trinity County Solid Waste Department provides solid waste services at County landfills, with waste disposal by private waste haulers or individuals. Cannabis waste is not permitted at County landfills.

Water is currently provided onsite by an existing 85-foot-deep groundwater well and two surface water gravity diversion points from an unnamed Class II tributary to the South Fork Trinity River. The Well Completion Report estimated the yield of the groundwater well to be 8 gallons per minute (GPM). California's Groundwater (Bulletin 118) published by the Department of Water Resources (DWR) is the State's official publication on the occurrence and nature of groundwater in California. The publication defines the boundaries and describes the hydrologic characteristics of California's groundwater basins. The project site is not located in a groundwater basin identified by the DWR, nor a high priority groundwater basin in risk of critical overdraft (DWR, 2022).

The subject property maintains an existing permitted septic system, installed in December 2017, consisting of a 1,500-gallon concrete tank with five 50-foot-long high-capacity leach field chambers. This system which was designed for the existing 3-bedroom residence would continue to serve the subject property treating typical residential wastewater from the residence and daily workers. The proposed expansion would employ a maximum of nine (9) employees (some permanent and some seasonal) each year. The applicant also proposes to bring portable toilet(s) onsite if the number of employees will exceed the design capacity of the existing septic system. If determined to be necessary by the County Environmental Health Department, the septic system may need to be upgraded to handle any increase in wastewater discharge from the new dwelling and expanded cultivation operation.

Impact Analysis

The following includes an analysis of environmental parameters related to *Utilities and Service Systems* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) The County's Cannabis Program includes requirements regarding water supply. With regards to cultivation activities, applicants must comply with all state laws, including SB 94, regarding surface water, including but not limited to, water used for the cultivation of cannabis needs to be sourced onsite from a permitted well or diversion. If using a permitted well, a copy of the Trinity County well permit shall be provided. The cultivation of cannabis shall not utilize water that has been or is illegally diverted from any stream, creek, river, or water source. If water is hauled it shall be for emergencies, as defined as a sudden, unexpected occurrence, and a bill of sale shall be kept on file from a water district or legal water source (Cultivation) (Section 315-843[6][c]).

As mentioned above, water is provided to the site by an existing 85-foot-deep groundwater well (Well Completion Report 1092844; Diamond Core Drilling, 2005) and two surface water gravity diversion points from an unnamed Class II tributary to the South Fork Trinity River. A Lake and Streambed Alteration Agreement (LSAA; Notification No. 1600-2016-0019-R1) was obtained for the surface water diversions from California Fish and Wildlife (CDFW) in 2016, and another LSAA notification has been submitted to CDFW for ongoing operation of the diversions (EPIMS-TRI-22558-R1I). A Draft LSAA for ongoing operation of the diversions is pending. No additional diversion is anticipated to be required.

The applicant filed a Water Resource Protection Plan (WRPP) for the proposed project, outlining best management practices (BMPs) for existing water usage. The proposed project will be continuously monitored as part of the SWQCB requirements for erosion, sedimentation, and stormwater discharge to prevent the degradation of riparian features. In addition, the applicant is required to renew and report to the SWQCB on a yearly basis.

The proposed project has an existing onsite septic system that disposes of domestic wastewater. This system would continue to be utilized for nine (9) employees at the site, and is not proposed to be expanded to accommodate other future onsite uses. If the number of employees will exceed the design capacity of the septic system, portable toilet(s) will be brought onsite. Should the existing system need to be expanded, the applicant would be required to follow standard County procedures for septic system development as provided for by the Trinity County Department of Environmental Health. It is the applicant's responsibility to continue to provide normal maintenance and repairs to the existing septic system.

Telecommunication services, electricity or natural gas will not require expansion onsite. Therefore, the proposed project will not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Based on the current anticipated uses at the site, impacts would be less than significant.

b) The proposed project would require approximately 693,200 gallons of water annually as provided by the following sources: 270,000 gallons from storage; 380,000 gallons from groundwater; and 43,200 gallons from surface water diversions. There are six (6) existing onsite plastic water tanks (totaling 16,500 gallons) and an existing pond (275,000 gallons). The project proposes adding an additional eight (8) 5,000-gallon plastic water tanks and one additional proposed 1,000,000-gallon pond for a total proposed water storage of 1,331,500 gallons. The tanks and ponds will be used for irrigation, domestic uses, and fire suppression. Based on the estimated water use and existing and proposed storage, there will be more than sufficient water supply for the proposed cultivation activity.

As noted in the *Environmental Setting*, the project site is not located in a groundwater basin identified by the DWR, nor a high priority groundwater basin in risk of critical overdraft (DWR, 2022). Groundwater impacts are reduced by requiring the reporting of annual monitoring of groundwater conditions to the County as part of the annual inspections required under the County's cannabis ordinance. This monitoring would identify if onsite well operations were resulting in groundwater drawdown impacts and what adaptive measures would be implemented to recover groundwater levels and protect adjacent wells. As this requirement is included as part of annual commercial cannabis operations permit renewals, it would provide ongoing protection of local groundwater resources.

It should be noted that the applicant's 2016 LSAA specifies that the stream diversion rate from the two points of diversion combined shall not to exceed 6 GPM. This condition applies cumulatively to both points of diversion because they are located on the same Class II stream. The 2016 LSAA also limits surface water diversion to no more than 200 gallons per day from June 15 to October 15 of each year. The applicant has provided a Right to Divert and Use Water certificate from State Water Resources Control Board Division of Water Rights (DWR) that applies to both points of diversion for irrigation

and fire protection (small irrigation use appropriation; Certificate H100201) dated July 13, 2018 and has also provided Reports of Registrant for water use in 2019 and 2020 (Certificate Number 100202).

Based on the above, sufficient water supplies exist to serve the proposed project. Impacts are considered less than significant in this regard.

c) The proposed project is served by an onsite septic system that is owned by the applicant; there are no impacts to community/public wastewater systems, as there are none in the area. The applicant shall ensure that the existing septic system meets the requirements of Trinity County Environmental Health Department, within 60 days of issuance of the use permit. Impacts are considered less than significant in this regard.

d) For cannabis waste, a Cannabis Waste Management Plan will be prepared for the proposed projects pursuant to 3 CCR Section 8108 and submitted to the California Department of Food and Agriculture. Cannabis waste will be stored and managed at the project parcels at a designated composting area pursuant to 3 CCR Section 8308. The generation of solid waste that is not able to be composted will continue to be disposed of at existing solid waste facilities, as other residential and commercial waste is currently being handled. Disposing of solid waste in existing facilities, either through self-hauling or by contracting with an existing hauler, will ensure the project does not violate solid waste standards at the State or local level. Impacts would be less than significant in this regard.

d) The construction and operational activities from the proposed projects would be required to comply with all federal, State, and local statutes related to solid waste, including Assembly Bill (AB) 939. This would include compliance with recycling, hazardous waste, and composting programs in the County to comply with AB 939. For cannabis waste, a Cannabis Waste Management Plan will be prepared for the proposed projects pursuant to 3 CCR Section 8108 and submitted to the California Department of Food and Agriculture. Cannabis waste will be stored and managed at the project site at a designated composting area pursuant to 3 CCR Section 8308. The proposed project would fully comply with these existing regulations and programs in ensuring continued compliance with the California Integrated Waste Management Act. The proposed project employs the reduce, reuse, recycle mantra throughout its operations and continuously improves on waste diversion practices. Impacts are less than significant in this regard.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

Based upon the review of the information above the implementation of the proposed project will have a less than significant impact with respect to *Utilities and Service Systems*.

Documentation and References

DWR (California Department of Water Resources). Sustainable Groundwater Management Act (SGMA) Data Viewer. [Online]: https://sgma.water.ca.gov/webgis/?jsonfile=https%3a%2f%2fsgma.water.ca.gov%2fportal%2fresources%2fjs%2fmapconfigs%2fGspSubmittalsConfig.js&_dc=0.14375840701535036. Accessed February 4, 2022.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 2022. *Solid Waste Department*. [Online]: https://www.trintycounty.org/Solid-Waste. Accessed February 4, 2022.

XX. WILDFIRE: *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			**X**	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			**X**	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			**X**	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			**X**	

Environmental Setting

The proposed project is located in an area designated as being in the Very High Fire Hazard Severity Zone (VHFHSZ), as identified by the CALFIRE Fire and Resource Assessment Program (FRAP) Fire Hazard Severity Zones in State Responsibility Areas (SRA) (CALFIRE, 2022). Fire hydrants in the County are limited to highly developed areas, and none are located in the area of the project. However, the County General Plan has taken this fact into consideration as a part of the Trinity County General Plan Safety Element. In addition to the local General Plan, the State of California has developed Fire Safe Standards (Public Resource Code Sections 4290 and 4291) which dictate development in rural areas throughout the state, and require vegetation clearing, onsite water storage requirements and other building and development standards.

The Trinity County Office of Emergency Services (OES) administers the County's *Emergency Operations Plan* to respond to major emergencies and disasters. The *Emergency Operations Plan* identifies a broad range of potential hazards and a response plan for each. The Trinity County Sheriff's Department, California Highway Patrol, and other cooperating law enforcement agencies have primary responsibility for evacuations. These agencies work with the County OES, and with responding fire department personnel who assess fire behavior and spread, which ultimately influence evacuation decisions. As of this time CALFIRE, Trinity County Fire Council, Trinity County OES, Trinity County Sheriff's Department, and others have not adopted a comprehensive emergency evacuation plan applicable to this area.

All evacuations in the County follow pre-planned procedures to determine the best plan for the type of emergency. The designated County emergency evacuation and law enforcement coordinator is the sheriff. The evacuation coordinator is assisted by other law enforcement and support agencies in emergency events. Law enforcement agencies, highway/street departments, and public and private transportation providers would conduct evacuation operations. Activities would include law enforcement traffic control, barricades, signal control, and intersection monitoring downstream of the evacuation area, all with the objective of avoiding or minimizing potential backups and evacuation delays.

Another factor in the evacuation process would be a managed and phased evacuation declaration. Evacuating in phases, based on vulnerability, location, or other factors, enables subsequent traffic surges on major roadway to be minimized over a longer time frame and can be planned to result in traffic levels that flow more efficiently than when mass evacuations include large evacuation areas simultaneously. Law enforcement personnel and Trinity County Office of Emergency Services staff would be responsible for ensuring that evacuations are phased appropriately, taking into consideration the vulnerability of communities when making decisions.

Impact Analysis

The following includes an analysis of environmental parameters related to *Wildfire* based on Appendix G of the State CEQA Guidelines. The discussion not only includes the areas for which there is potential for environmental impacts but also provides justification for the conclusions that either no impacts, less than significant impacts, or less than significant impacts with mitigation could occur.

Based on a field review by the Planning Department, information provided by the applicant, existing information available to the Planning Department, and observations made on the project site and in the vicinity, the following findings can be made:

a) Based on the Trinity County General Plan Safety Element SR-299 is considered a Major Evacuation Route. As the project will not impact traffic intensity on the roadway, or impair access to the roadway or surrounding properties, the project is not expected to impair the emergency evacuation plan. Impacts would be less than significant in this regard.

b) The steep topography and extent of forests and woodlands, coupled with typically hot, dry summers, create an extreme fire danger throughout most of the County. The subject property is located within a State Responsibility Zone (SRA). CalFire is the responsible agency with jurisdiction over inspections and managing the fire resources in the area. As such, the subject property is required to maintain a 100-foot defensible space around all structures (CALFIRE, 2005). In addition, the proposed project is required to comply with State Fire Safe Standards for protection of life and property from wildfires through clearing of vegetation, location of appropriately sized water storage facilities, and other actions required for fire protection/suppression actions as may be determined by CALFIRE.

   Commercial cannabis operations are regulated for fire avoidance and protection measures consistent with building and fire codes (CCR Title 24, Part 2, Chapter 7A and PRC Section 4291) and Trinity County Code of Ordinances Chapter 8.30 that provide wildfire protection standards for emergency access, signing and building numbering; private water supply reserves for emergency fire use and vegetation modification. Additionally, State licensing requirements also include fire avoidance and protection measures for cultivation in accordance with CCR Section 8102(aa) and CCR 5501(i).

   While the project parcels are in an area designated as a Very High Fire Hazard Severity Zone, which could expose employees to pollutant concentrations or the uncontrolled spread of a wildfire, these hazards would not be substantially different than that for other types of land uses in the project area. Therefore, the proposed project as designed and in compliance with existing laws and regulations, will not exacerbate wildfire risks, due to slope, prevailing winds, and other factors and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant in this regard.

c) Water onsite is currently stored in six existing onsite plastic water tanks (totaling 16,500 gallons) and an existing pond (275,000 gallons). Implementation of the proposed project would result in eight additional 5,000-gallon plastic water tanks and one additional proposed 1,000,000-gallon pond for a total proposed water storage of 1,331,500 gallons. The water supply will serve proposed cannabis cultivation activities as well as potential fire suppression efforts. Additionally, the project does not include the addition of new roads, fuel breaks, power lines or other utilities. There are no temporary or ongoing activities that will exacerbate the fire risk in the area. Impacts would be less than significant in this regard.

d) According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Panel No. 06105C0725E; dated 1/20/2010), flood hazard zones in the vicinity of the project are classified as Zone D, which is the area where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted (FEMA, 2010). The only potential flood hazards are areas around the South Fork Trinity River. While the possibility of flooding can occur along the South Fork Trinity River, west of the subject property, the site is located over 250 feet above the river where flooding is unlikely. Additionally, the area proposed for cultivation maintains a gently sloping topography that indicates the likelihood of a landslide is low. For these reasons, the flood hazard and potential landslides downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes are considered to be less than significant.

Mitigation Measures

No mitigation measures are required. Impacts would be less than significant.

Findings

Based upon the review of the information above the implementation of the proposed project will have a less than significant impact with respect to *Wildfire*.

Documentation and References

CALFIRE (California Board of Forestry and Fire Protection). 2022. *Fire Hazard Severity Zone Viewer.* [Online]: https://egis.fire.ca.gov/FHSZ/. Accessed February 4,2022.

CALFIRE. *State Responsibility Area Viewer.* 2022. [Online]: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1. Accessed February 4, 2022.

CPRC (California Public Resources Code). *Division 4, Forests, Forestry and Range and Forage Lands. Part 2 Protection of Forest, Range and Forage Lands. Chapter 2, Hazardous Fire Areas, Sections 4251-4290.5*.

CPRC. *Division 4, Forests, Forestry and Range and Forage Lands. Part 2 Protection of Forest, Range and Forage Lands. Chapter 3, Mountainous, Forest-, Brush- and Grass-Covered Lands, Sections 4291-4299*.

FEMA (Federal Emergency Management Agency). 2010. *Flood Insurance Rate Map (FIRM) Panel No. 06105C0725E*. Effective January 20, 2010.

Trinity County. 2018. *Cannabis Ordinance Nos. 315-823; 315-829; 315-830; 315-841; 315-843; and 315-849*. As amended through December 2020.

Trinity County. 2019. *Draft Environmental Impact Report – Trinity County Cannabis Program.* May 2019.

Trinity County. 2002. *General Plan – Safety Element.* Revised March 2002.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE:		Potentially Significant Impact	Potentially Significant Impact Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below the self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c)	Does the project have potential environmental effects which may cause substantial adverse effects on human beings, either directly or indirectly?		X		

Impact Analysis

a) Evaluation of the proposed project as provided in Section IV – BIOLOGICAL RESOURCES, has shown that the activities of the proposed project do not have the potential to degrade the quality of the environment and will not substantially reduce the habitat or cause wildlife populations to drop below self-sustaining levels. Mitigation measures for biological resources have been developed to reduce potential impacts on sensitive habitats and species to less than significant levels. Refer to Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 in Section IV – BIOLOGICAL RESOURCES.

Also, based on the discussion and findings in Section V – CULTURAL RESOURCES, there is evidence to support a finding that the proposed project is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historic Resources (CRHR) under any significance criteria. The project is located in an area that does not appear to be sensitive for prehistoric or historic occupation and is considered to have a low to moderate sensitivity for surface sites and very low sensitivity for subsurface sites. Although no archaeological deposits or features were found during the *Cultural Resources Investigation of the Salyer Kahan Property* (ARS, 2020), implementation of mitigation measures will ensure that any additional archaeological deposits or features may be discovered are fully protected during implementation of the project. Refer to Mitigation Measures CR-1 and CR-2 in Section V – CULTURAL RESOURCES.

b) As discussed throughout this document, implementation of the proposed project has the potential to result in impacts to the environment that are individually limited, but are not cumulatively considerable, including impacts to air quality, biological resources, cultural resources, geology and soils, and hydrology and water quality. In most instances where the projects have the potential to result in individually limited significant impacts to the environment (including the resources listed above), mitigation measures have been imposed to reduce the potential effects to less than significant levels. In other instances, the project design and compliance with existing laws and regulations would reduce impacts of the project to less than significant levels.

Trinity County has approved several permits for commercial cannabis operations within 1-mile of the project parcels. The nearest sensitive receptor (residence) is located 215 from the property line and over 800 feet from the nearest proposed cultivation area. Due to the rural location and size of the project parcels, the potential for the project to make a considerable contribution to potential cumulative impacts (e.g., odors, noise, lighting, fugitive dust, etc.) from cannabis activities in the project area is limited. In all instances where the project has the potential to contribute to cumulatively considerable impacts to the environment (including the resources listed above) mitigation measures have been imposed to reduce the potential effects to less than significant levels. However, there is a potential for the project to contribute to cumulative water quality and groundwater withdrawal impacts. Potential cumulative water quality impacts would not be cumulatively considerable due to compliance with existing regulatory requirements including, but not limited to, the SWRCB Cannabis General Order, DCC regulations (see California Code of Regulations Section 8102(p); Section 8102(dd); Section 8216; Section 8304(a and b); Section 8307), and the Trinity County Cannabis Ordinance.

As discussed in Section X – HYDROLOGY AND WATER QUALITY, the project proposes to use an 85-foot-deep groundwater well for cultivation activity that has a yield of eight (8) gallons per minute. As mentioned above, the project site is not located within a CWR Zone designated by Trinity County or a groundwater basin identified by the DWR. The nearest groundwater basin to project site is the Hoopa Valley Groundwater Basin (1-007), approximately 12 miles northwest of the project site (DWR, 2022). DWR has identified the Hoopa Valley Groundwater Basin as a "very low" priority groundwater basin and not at risk of critical overdraft (DWR, 2022).

The EIR prepared for the County Cannabis Ordinance evaluated whether the Cannabis Program could result in groundwater supply impacts (pgs. 3.10-32 to 3.10-34 and pgs. 4-11 to 4-13). To reduce potential groundwater impacts from implementation of the Cannabis Program, mitigation was included requiring the reporting of annual monitoring of groundwater conditions to the County as part of the annual inspections required under the ordinance. This monitoring is intended to identify if onsite well operations are resulting in groundwater drawdown impacts and what adaptive measures would be implemented to recover groundwater levels and protect adjacent wells. Because implementation of this mitigation measure would be required as part of annual commercial cannabis operations permit renewals (see Cannabis Ordinance Section 17.43G.030.X), it would provide ongoing protection of local groundwater resources and offset cumulative groundwater impacts. Thus, implementation of this requirement of the Cannabis Program would prevent potential cumulative impacts from cannabis operations in the project area. Therefore, in compliance with Section 17.43G.030.X of the County Cannabis Ordinance, groundwater withdrawal by the proposed project would not result in a cumulatively considerable impact.

Further, the project has been designed to be consistent with the EIR prepared for the County's Cannabis Ordinance. As required by CEQA, the EIR specifically analyzed the potential cumulative environmental impacts of commercial cannabis activities as allowed under the County's Cannabis Ordinance. The EIR determined that in compliance with the standards in the Cannabis Ordinance and other applicable laws and regulations, that cumulative impacts from commercial cannabis activities would be less than significant. This is especially true relative to the environmental baseline of unregulated cannabis activity. Therefore, the proposed project as designed, mitigated, and in compliance with existing regulatory requirements, would not result in impacts that are individually limited, but cumulatively considerable. Therefore, impacts would be less than significant with mitigation incorporated.

c) The potential for the proposed project to result in environmental effects that could adversely affect human beings, either directly or indirectly, has been discussed throughout this document. In instances where the proposed project has the potential to result in direct or indirect adverse effects to human beings, including impacts to air quality and cultural resources, mitigation measures have been applied to reduce the impact to below a level of significance. In other instances, the project design and compliance with existing laws and regulations would reduce impacts of the project to less than significant levels. Therefore, the proposed project as designed, mitigated, and in compliance with existing regulatory requirements, would not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure BIO-1: The following measure is provided to reduce potential impacts to foothill yellow-legged frog to a less then significant level:

A qualified biologist approved by the County and familiar with the life cycle of foothill yellow-legged frog, shall conduct preconstruction surveys of proposed new development activities 24 hours before new development activities. Preconstruction surveys for special-status amphibians shall follow widely used and accepted standardized protocols that control for habitat type, seasonality, and environmental conditions, including the methods described in Considerations for Conserving Foothill Yellow-Legged Frog (CDFW 2018), and Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments (Peek, et al., 2017). Preconstruction surveys shall be conducted throughout the proposed construction area and at least a 400-foot buffer around the proposed development area. Surveys shall consist of "visual encounter" as well as "walk and tum" surveys of areas beneath surface objects (e.g., rocks, leaf litter, moss mats, coarse woody debris). Preconstruction surveys shall be conducted within the appropriate season to maximize potential for observation for each species, and appropriate surveys will be conducted for the applicable life stages (i.e., eggs, larvae, adults).

Mitigation Measure BIO-2: The following measure is provided to reduce potential impacts to Trinity bristle snail to a less then significant level:

Regardless of detection during the initial biological reconnaissance survey, if suitable habitat for Trinity bristle snail is present within the proposed development area, a qualified biologist approved by the County and familiar with the species shall conduct preconstruction surveys of proposed new development activities within the period when the species is the most active (between May and October and between dusk and dawn) prior to new development activities. Preconstruction surveys shall be conducted using a widely used and accepted standardized protocol that controls for seasonality and environmental conditions, such as the *Survey Protocol for Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan* (BLM, 2003). Surveys shall be conducted throughout the proposed construction area and an appropriate buffer around the proposed development area as determined by the qualified biologist familiar with the species and survey protocols. If Trinity bristle snail or its habitat is not detected during the preconstruction survey, then further mitigation is not required.

If Trinity bristle snail is detected during the preconstruction survey, then consultation with CDFW shall be initiated as described above. Injury or mortality of this species will be avoided through project design modification or cultivation site relocation. If impacts to Trinity bristle snail are unavoidable, then the applicant will submit an incidental take permit (ITP) application to CDFW and receive authorization prior to commencing development of the cultivation site. Conditions of incidental take authorization may include minimization measures to reduce impacts to individual Trinity bristle snails, or compensation for loss of the species including but not limited to purchasing credits from a CDFW-approved mitigation bank.

Mitigation Measure BIO-3: The following measure is provided to reduce potential impacts to special-status amphibians from invasive bullfrogs to a less then significant level:

To avoid impacts to sensitive native amphibian and fishery resources from bullfrog establishment in the proposed rainwater catchment pond, pond draining should occur in September through October, a minimum of every two years. Careful planning and coordination with CDFW, is necessary to ensure potential impacts to stream resources can be addressed, prior to commencing with pond draining. Discharge of polluted water to waters of the state may require permitting from other agencies with permitting authority, such as the Regional Water Quality Control Board.

Take of bullfrogs is specifically allowed in the California Code of Regulations (CCR), Title 14 (T- 14) section 5.05(a)(28), under the authority of a sport fishing license. There is no daily bag limit, possession limit, or hour restriction, but bullfrogs can only be taken by hand, hand-held dip net, hook and line, lights, spears, gigs, grabs, paddles, bow and arrow, or fish tackle. While draining occurs, direct removal efforts should be employed as described above if possible.

Mitigation Measure BIO-4: The following measure is provided to reduce potential impacts to nesting birds to a less then significant level:

If vegetation removal or other ground disturbing activities associated with project construction cannot occur outside the bird nesting season (generally February 1 – August 31), a qualified biologist will conduct nesting bird surveys within the area of impact and establish a protective buffer for any active nests found. The following shall be implemented:

- Conduct surveys no more than 7 days prior to activities, covering the entire area of potential impact.
- If an active nest is located during the survey, a no-disturbance buffer shall be established around the nest by the qualified biologist, in consultation with California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.
- Establish protective buffers for active nests based on type of project activity to be conducted, habitat, and species of concern.
- Physical protective buffers should be in the form of high visibility fencing, inspected weekly by a biological monitor to ensure stability.
- If project activities are to be conducted while active nest buffers are in place, a biological monitor will be on site during project activities to ensure that no take of migratory birds occurs.

Mitigation Measure CR-1. If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 50 feet of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near

the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material, and offered recommendations for further action.

Mitigation Measure CR-2. If In the event that previously unidentified evidence of human burial or human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie human remains (Public Resources Code, Section 7050.5), the Trinity County Coroner must be informed and consulted, per State law. If the coroner determines the remains to be Native American, he or she shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent. The most likely descendent will be given an opportunity to make recommendations for means of treatment of the human remains and any associated grave goods. when the commission is unable to identify a descendant or the descendants identified fail to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendants and the mediation provided for in subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance. Work in the area shall not continue until the human remains are dealt with according to the recommendations of the County Coroner, Native American Heritage Commission and/or the most likely descendent have been implemented.

Mitigation Measure GEO-1. If a paleontological discovery is made during construction, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery and shall immediately contact the County. A qualified paleontologist shall be retained to observe all subsequent grading and excavation activities in the area of the find and shall salvage fossils as necessary. The paleontologist shall establish procedures for paleontological resource surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered that require temporarily halting or redirecting of grading, the paleontologist shall report such findings to the County. The paleontologist shall determine appropriate actions, in cooperation with the applicant and the County, that ensure proper exploration and/or salvage. Excavated finds shall first be offered to a state-designated repository such as the Museum of Paleontology, University of California, Berkeley, or the California Academy of Sciences. Otherwise, the finds shall be offered to the County for purposes of public education and interpretive displays. The paleontologist shall submit a follow-up report to the County that shall include the period of inspection, an analysis of the fossils found, and the present repository of fossils.

Findings

Based upon the review of the information above, the implementation of the project is not anticipated to have a substantial adverse effect on the environment. Therefore, with mitigation incorporated there is no significant impact.

Documentation and References

Refer to Sections I through XX of this Initial Study.

Section 4 – CEQA Determination

On the basis of the initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

X I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR of NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Copies of the Initial Study may be obtained on the following websites:

Governor's Office of Planning and Research: CEQAnet Web Portal
https://ceqanet.opr.ca.gov/

County of Trinity Website: Community Development Services – Building and Planning Department
https://www.trinitycounty.org/Planning

Dependent on current work hours and staffing levels, copies may also be obtained at the Trinity County Building and Planning Department, 530 Main Street, Weaverville, CA 96093. Contact Skylar Fisher, Planning Department, Cannabis Division (530-623-1351 or sfisher@trinitycounty.org) for additional information.

Lisa Lozier, Interim Director of Building & Planning
Trinity County

3/22/22
Date

Section 5 – Technical Appendix

Appendix A
Project Figures and Site Plans

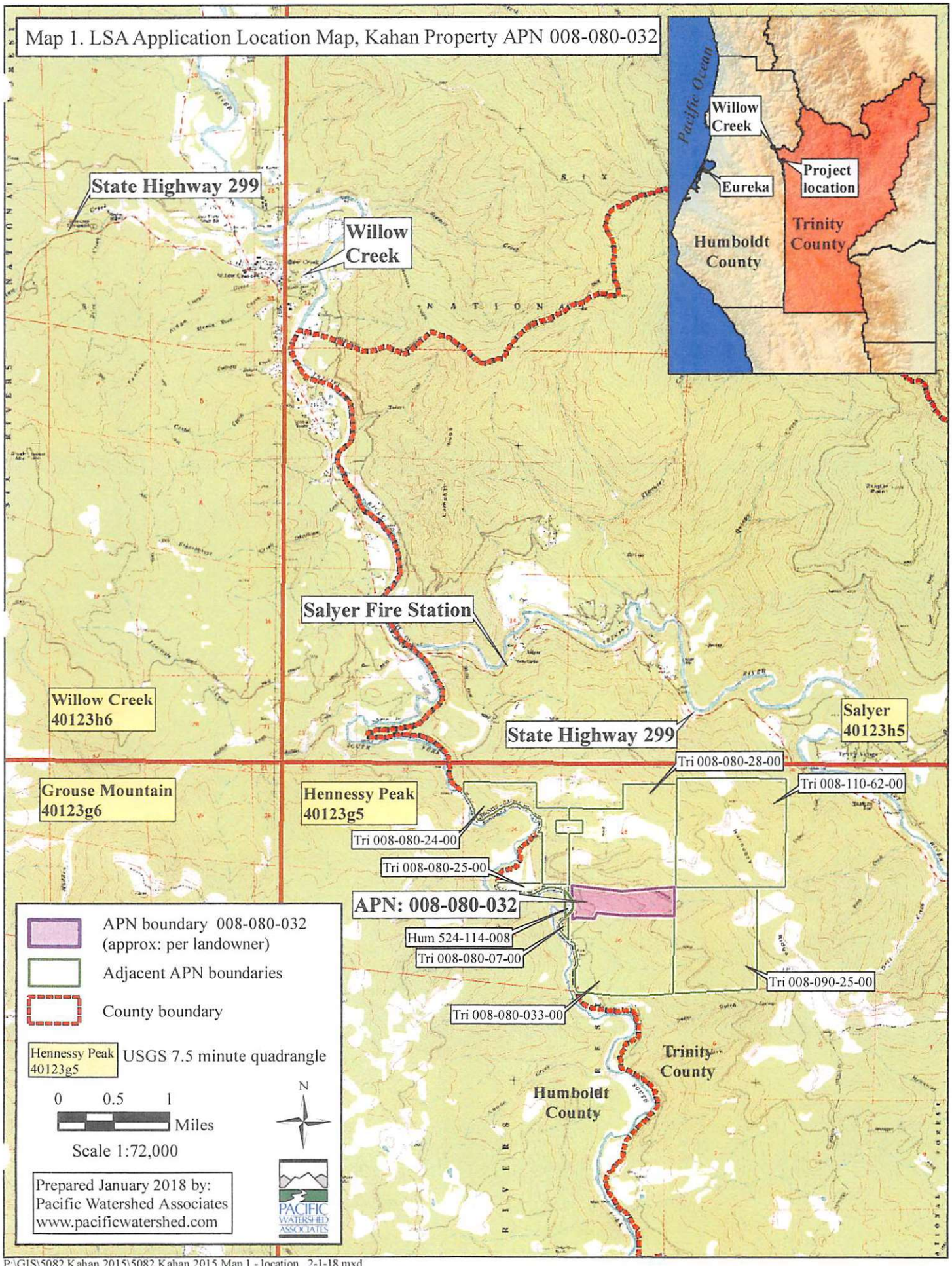
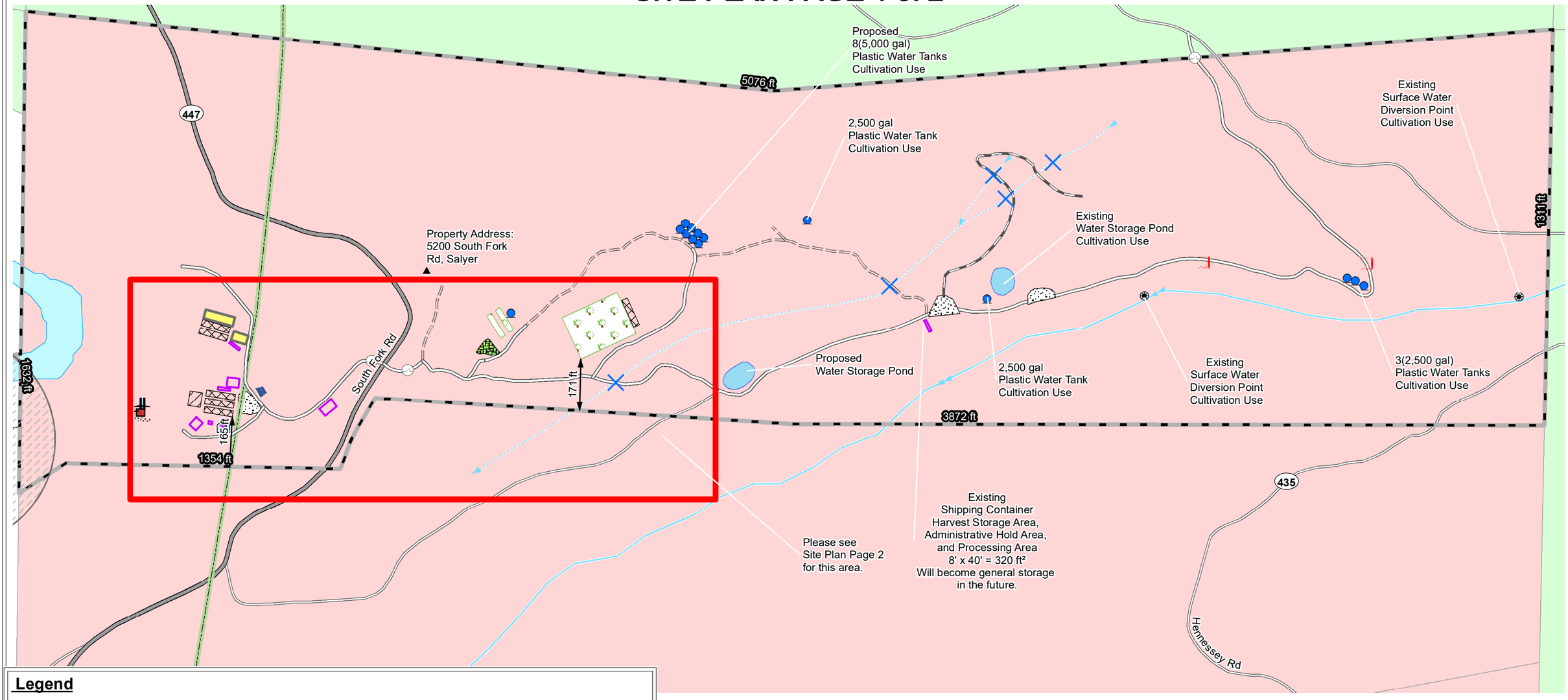

Map 1. LSA Application Location Map, Kahan Property APN 008-080-032
Pacific Ocean
Willow Creek
Eureka
Project location
Humboldt County
Trinity County
State Highway 299
Willow Creek
Salyer Fire Station
Willow Creek 40123h6
Salyer 40123h5
State Highway 299
Grouse Mountain 40123g6
Hennessy Peak 40123g5
Tri 008-080-28-00
Tri 008-110-62-00
Tri 008-080-24-00
Tri 008-080-25-00
APN: 008-080-032
Hum 524-114-008
Tri 008-080-07-00
Tri 008-090-25-00
Tri 008-080-033-00
Trinity County
Humboldt County
APN boundary 008-080-032 (approx: per landowner)
Adjacent APN boundaries
County boundary
Hennessy Peak 40123g5
USGS 7.5 minute quadrangle
0 0.5 1
Miles
Scale 1:72,000
N
Prepared January 2018 by:
Pacific Watershed Associates
www.pacificwatershed.com
PACIFIC WATERSHED ASSOCIATES
P:\GIS\5082 Kahan 2015\5082 Kahan 2015 Map 1 - location 2-1-18.mxd

Figure 1

SITE PLAN PAGE 1 of 2



Legend

- Subject Property

Cultivation
- Future Cultivation
- Greenhouse
- Immature Plant Area
- Outdoor Cultivation Area
- Structure Boundary

Waste
- Compost
- Septic
- Leach Lines
- Gates

Power
- Solar Panels

Water Source
- Diversion Point
- Pump House
- Water Storage

Culverts
- Culvert
- Crossings

Roads
- Paved
- Rocked
- Native
- Jeep/Skid Trail
- PG&E Easement
- Parking Area

Mapped Streams
- Mapped Intermittent
- Mapped Ephemeral
- Rivers
- Ponds

Ownership
- Parcel Lines
- Private: Timber Production
- US Forest Service
- 350ft Residential Setback

Variance is required for the proposed project due to the insufficient property line setback.

Total Existing Mature Canopy Area = 10,000 ft²
Total Proposed Mature Canopy Area = 43,560 ft²

While we strive to present the most accurate data available, approximate scale, distances, location, and site conditions may vary.

N

Main Map Scale 1 Inch = 325 ft

0 162.5 325 650 feet

Trinity River CONSULTING

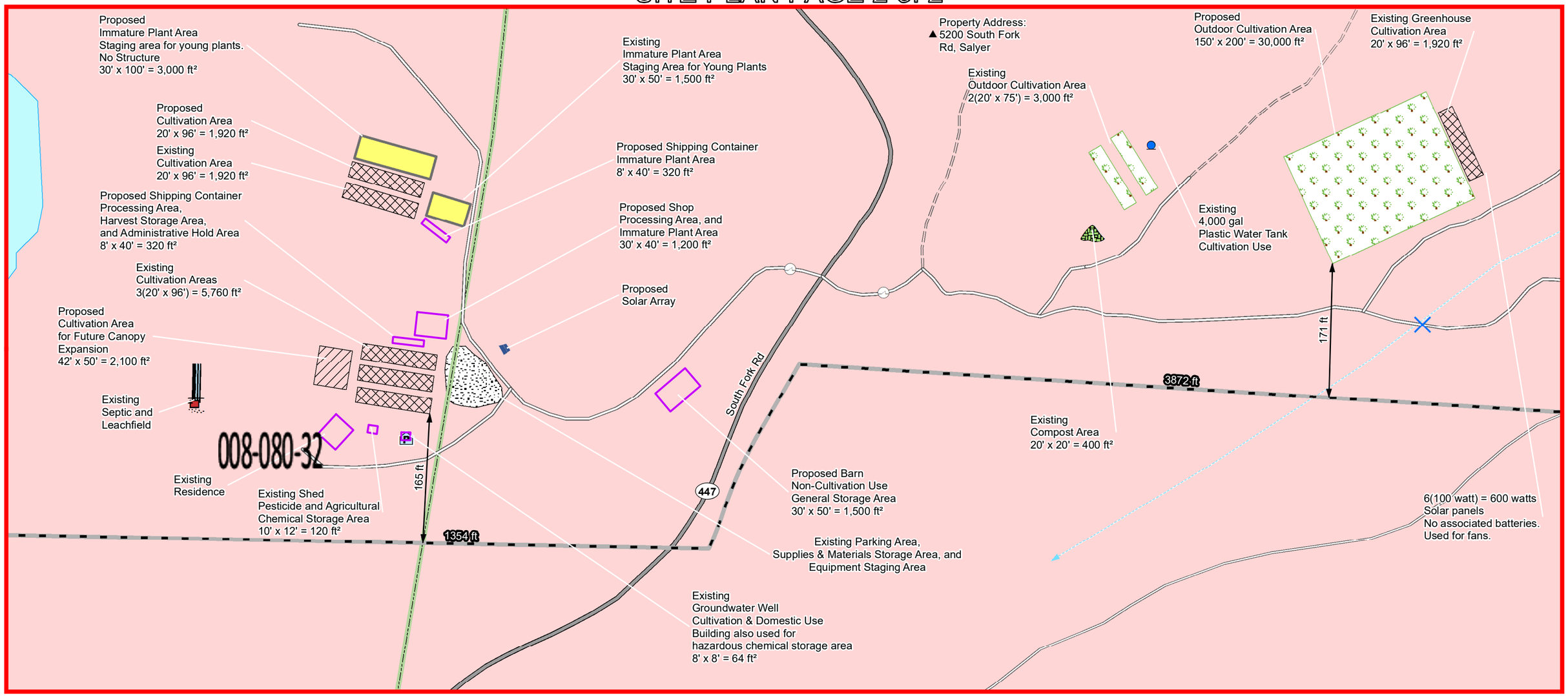
TRINITY COUNTY PLANNING DEPARTMENT
APPLICANT PREPARED SITE PLAN

Application No. _____

Drawn By: S.Elliott APN: 008-080-32-00
Date: 12/07/2021 Zoning: TPZ
Scale: 1:3,900 Lot Area: 143.57 Acres

Figure 2

SITE PLAN PAGE 2 of 2



Legend

- Subject Property
- **Cultivation**
  - Future Cultivation
  - Greenhouse
  - Immature Plant Area
  - Outdoor Cultivation Area
  - Structure Boundary
- **Waste**
  - Compost
  - Septic
  - Leach Lines
  - Gates
- **Power**
  - Solar Panels
- **Water Source**
  - Pump House
  - Water Storage
  - Crossings
- **Roads**
  - Paved
  - Native
  - PG&E Easement
  - Parking Area
- **Mapped Streams**
  - Mapped Ephemeral
  - Rivers
- **Ownership**
  - Private: Timber Production

Variance is required for the proposed project due to the insufficient property line setback.

Total Existing Mature Canopy Area = 10,000 ft²
Total Proposed Mature Canopy Area = 43,560 ft²

While we strive to present the most accurate data available, approximate scale, distances, location, and site conditions may vary.

Main Map Scale 1 Inch = 125 ft

0 62.5 125 250 feet

N

Trinity River CONSULTING

TRINITY COUNTY PLANNING DEPARTMENT
APPLICANT PREPARED SITE PLAN
Application No. _____

Drawn By: S.Elliott APN: 008-080-32-00
Date: 12/07/2021 Zoning: TPZ
Scale: 1:1,500 Lot Area: 143.57 Acres

Figure 3

Appendix B
Biological Resource Assessment (PWA, 2021)

BIOLOGICAL RESOURCE ASSESSMENT
for
5200 Lower Southfork Rd.
Trinity County
APN: 008-080-32-000
Cannabis Cultivation License CCL-2020-037

PWA Report No. 20548201
October 2021

Prepared for:
Patrick Kahan
True Heart Connection, Inc.
PO Box 404
Bayside, CA 95524

Kim Hunter
Trinity County Planning Cannabis Division
PO Box 2819
Weaverville, CA 96093
(530) 623-1351

Prepared by:
Georgia Hamer, Staff Ecologist
Margo Moorhouse, Fisheries Biologist/Aquatic Ecologist
Pacific Watershed Associates Inc.
P.O. Box 4433, Arcata, CA 95518-4433
georgiah@pacificwatershed.com
margom@pacificwatershed.com

Table of Contents

Appendices

1.0 INTRODUCTION

On 14 July 2020 and 20 April 2021, Pacific Watershed Associates (PWA) Ecologist Georgia Hamer and PWA Fisheries Biologist/Aquatic Ecologist Margo Moorhouse conducted a biological resource assessment for areas of existing and proposed development (hereafter referred to as "project area"). This resource assessment includes a reconnaissance survey review of relevant databases and literature regarding possible present species, a review of site-specific conditions as to the likelihood of hosting habitat for the species; and if habitat is present, a completion or recommendation for additional protocol level surveys. Species in this context can be defined as "state and/or federally-listed as endangered, threatened, or proposed, including candidate species". Additionally, this report includes a protocol level plant survey at as well as focused surveys at proposed expansion areas (Appendix A: Figure 1, Figure 2). Patrick Kahan (hereafter referred to as "landowner") holds a Commercial Cannabis License (CCL) through the Trinity County Planning Cannabis Division applied for under Ordinance 1355, and this report serves to satisfy section 4.4 Biological Resources of Trinity County's Appendix C Cannabis Program Environmental Checklist. The landowner is also engaged in additional permitting processes related to the cultivation of commercial cannabis on the property with the California Department of Cannabis Control (DCC), Trinity County Planning Department, State Water Resources Control Board, and the California Department of Fish and Wildlife (CDFW).

1.1. Location

The property is located within the South Fork Trinity River watershed, approximately three miles south/southeast of Salyer, Trinity County, CA. The property is located in Section 36, Township 6N, Range 5E, Humboldt Base and Meridian, in the Hennessy Peak U.S (Appendix A: Figure 1).

2.0 PROJECT DESCRIPTION

2.1 Property Uses

The landowner utilizes the property as a seasonal cannabis farm and permanent residence. The landowner plans on constructing a new pond as well as expanding their cannabis cultivation footprint (Appendix A: Figure 2). The landowner utilizes two points of diversions (POD) within unnamed streams on the property for all cannabis irrigation and domestic needs. (Appendix A: Figure 2).

2.2 Property Ecology

The property sits at approximately 1,800 – 700 feet in elevation, is 141 acres, and is characterized by historic logging and present cannabis cultivation activities.There are three main natural communities within the property (Appendix A: Figure 2), a Douglas-fir (*Pseudotsuga menziesii*) woodland, a madrone (*Arbutus menziesii*) forest, and a Tobacco brush (*Ceanothus velutinus*) chaparral, which are defined below. Natural community descriptions are based upon the California Native Plant Society (CNPS) Manual of California Vegetation Online (CNPS, 2021) and the United States Geological Survey (USGS).

- **Douglas-fir Woodland**
  This natural community consists of *P.menziesii* predominantly and is intermixed with additional conifers or broadleaf hardwoods such as *Arbutus menziesii* (Pacific madrone) *Abies grandis* (grand fir), *Acer marcophyllum* (big leaf maple), *Acer circinatum* (vine maple), *Pinus sabiniana* (gray pine), and *Notholithocarpus densiflorus* (tanoak). The canopy is continuous leading to a shrub layer that is sparse to intermittent and an herbaceous layer that is sparse or abundant. Common shrubs and herbaceous plants include *Corylus cornuta* (beaked hazelnut), *Gautheria shallon* (salal), *Toxicodendron diversilobum* (poison oak), *Lonicera hispidula* (pink

honeysuckle), *Rosa gymnocarpa* (wood rose), and *Whipplea nidesta* (modesty). The stand within the property has been logged and thinned within the last 20 years and is not as dense as a typically described Douglas fir woodlands (Photo 1).

Photo 1. Douglas-fir woodland. (April 20th, 2021)

- **Madrone Forest**

  This natural community consists of *Arbutus menziesii* (madrono) predominantly and is intermixed with *Acer macrophyllum* (big leaf maple), *Umbellularia californica* (California bay tree), and *Alnus viridis ssp. sinuate* (Sitka alder). The canopy is continuous leading to a shrub layer that is sparse to intermittent and an herbaceous layer that is sparse. Common herbaceous plants include *W.nidesta* , *Spiraea douglasii* (Douglas spiraea), and *Rubus ursinus* (California blackberry). The stand occurring within the property is growing along a steep slope leading to the South Fork Trinity River, causing many of the trees to form tension wood at their base to continue growing upright (Photo 2).

Photo 2. Madrone forest growing on a steep slope. (July 14th, 2021)

- **Tobacco Brush Chaparral**
  This natural community consists of *Ceanothus velutinus* (Tobacco brush) which is co-dominate with *Arctostaphylos patula* (green leaf manzanita). The canopy is continuous leading to a shrub layer that is sparse to intermittent and an herbaceous layer that is sparse. Common herbaceous plants include *W.nidesta, Spiraea douglasii* (Douglas spiraea), and *Rubus ursinus* (California blackberry). The stand can reach up to 13 feet in height with an intermittent to continuous canopy and a sparse herbaceous layer. This natural community occurs where recent conifer removal has been implemented on the property and is intermixed with stands of young *P.menziesii.*

2.2.1 Geologic and Soil Composition

As defined by the United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey (WSSD), this parcel contains three different soil complexes (Appendix A: Figure 3). The three soil complexes identified within the parcel are defined as follows:

- **Typic Xerofluvents-Riverwash association**, 2 to 10 percent slopes (100)
  The parent material of this soil association consists of sandy and gravelly alluvium. This association is characterized by low runoff, is excessively drained, and makes up 4.1% of the parcel. (Appendix A: Figure 3)
- **Clallam-Hugo-Holland families association,** deep, dry, 35 to 70 percent slopes
  The parent material of this soil association consists of residuum weathered from metasedimentary rock. This association is characterized by very high runoff, is well drained and makes up 52.3% of the parcel. (Appendix A: Figure 3)
- **Skalan-Kristirn-Holland families association**, deep, 35 to 70 percent slopes (260)
  The parent material of this soil association consists of residuum weathered from metasedimentary rock. This association is characterized by very high runoff, is well drained, and makes up 43.6% of the parcel. (Appendix A: Figure3)

2.2.2 National Wetlands Inventory

The United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) has no documented wetlands within the project area nor the property as a whole (Appendix A: Figure 4). Due to the lack of field data, this general categorization by NWI is not intended for planning purposes as noted in the "Data Limitations, Exclusions, and Precaution" disclaimer:

> *"The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high-altitude imagery. Wetlands are identified based on vegetation, visible hydrology, and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis."*
> (USFWS, 2020)

2.2.3 Watershed

The subject property includes two small tributaries to the South Fork Trinity River, a tributary to the Trinity River that flows into the Klamath River and thence the Pacific Ocean. The South Fork Trinity

River is the largest undammed *Wild and Scenic* designated river remaining in California originating from its spring fed sources in the Yolla Bolly-Middle Eel Wilderness area, flowing nearly 90 miles downstream to the confluence with the Trinity River. The South Fork Trinity River is the largest tributary to the Trinity River encompassing a watershed area of approximately 970 square miles. Elevations in the South Fork Trinity River range between approximately 400 feet at the confluence with the mainstem Trinity River and 7,800 feet in the headwaters located in the Yolla Bolly-Middle Eel Wilderness area. The California State Water Resources Control Board (SWRCB) has listed the South Fork Trinity River as temperature impaired on the Section 303(d) list and as sediment impaired having exceeded the EPA total maximum daily loads (EPA, 1998). The South Fork Trinity River is a critical watershed supporting listed anadromous fishes and other rare wildlife. The two small tributaries on the subject property contribute cold water flows in the summer to the South Fork Trinity River with nearly vertical waterfall-like confluences flowing off the last break-in-slope situated nearly 100 feet above the river.

3.0 REGULATORY SETTING

Select federal, state, and local legislative acts applicable to this property and proposed activity are listed below. These acts protect special-status species, jurisdictional Waters of the U.S. and State of California, and other sensitive biological resources.

- Section 401 and 404 of the Clean water Act
- Fish and Wildlife Coordination Act
- Federal Endangered Species Act
- Migratory Bird Treaty Act
- Porter-Cologne Water Quality Control Act
- California Endangered Species Act
- California Environmental Quality Act
- California Fish and Game Code Section 1600, 1908, 3503, 3511, 3513
- Endangered Species Act of 1973
- Native Plant Protection Act of 1977
- Natural Community Conservation Planning Act
- Humboldt County General Plan
- Commercial Cannabis Land Use Ordinance

4.0 METHODS

4.1 Biological Background Data

Rare species are defined here to include: (1) all species that are federal or state listed as rare, threatened, or endangered; (2) all federal and state “candidate” species for listing; (3) all plants included in Ranks 1-4 of the CNPS Inventory of Rare, Threatened, and Endangered Plants of California; and (4) plants that qualify under the definition of “rare” in the California Environmental Quality Act (CEQA), Section 15380. See Appendix B for a description of all listing definitions.

Preliminary biological reviews are conducted by utilizing subscription databases along with literature reviews and professional consultations. The databases consulted for this review include the U.S. Department of Agriculture’s ecoregion classification system, California Natural Diversity Database (CNDDB), NWI, Calflora, and the Pacific Northwest Consortium. All documents produced from these databases are found in Appendix A. (CDFW CNDDB, 2021; CDFW Spotted Owl Observations, 2021; USFWS, 2021; Consortium of California Herbaria, 2021). Additionally, SHN Consulting in Eureka,

CA provided the landowner with a target species list for their CEQA compliance, which is integrated within Table 1.

When utilizing the CNDDB and IPaC databases, a nine (9) quadrant search was conducted to determine proximity of species presence. The nine (9) quadrants are defined by the Public Land Survey System (PLSS), consisting of township, range, and section. Species accounts are recorded as Elemental Occurrences (EO), which is defined as an area of land and/or water in which a species or natural community is, or was, present. All rare species documented within the vicinity of the project area were then assessed based on associated vegetation communities, soil affinity, associated species, topographic position, shade tolerance, disturbance tolerance, elevation (as applicable to the species), and population distribution to determine the potential for these species to occur.

4.2 Biological Field Survey

All surveying was conducted on-foot by PWA Staff Ecologist Georgia Hamer and Fisheries Biologist/Aquatic Ecologist Margo Moorhouse. A 150-foot buffer was established from all project areas as to identify potential habitat for any rare species and was surveyed to the greatest extent possible. Protocol level plant surveys were conducted within each cultivation expansion area as well as for the proposed pond development following the protocol described in recommended resource agency guidelines (Appendix A: Figure 2) (CNPS, 2001, CDFW, 2019). All plants were identified using the Jepson Manual (Baldwin et al., 2012) to the taxonomic level necessary to determine species status. Names given follow the Integrated Taxonomic Information System (ITIS, 2021) database of accepted taxonomy. Additionally, passive ocular and seek-and-find observations were made at all identified areas with suitable aquatic and riparian habitats for species presence/absence verification.

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

- **None**: Species listed as having “none” with regard to their potential to occur within the project areas are those species for which there is no suitable habitat present in the project area.
- **Low**: Species listed as having “low” potential to occur within the project area are those for which there is no known record of occurrence in the vicinity of the project area, and there is marginal or very limited suitable habitat present in the project area.
- **Moderate:** Species listed as having “moderate” potential to occur within the project area are those species for which there is a known record of occurrence in the vicinity of the project area, and/or there is suitable habitat present in the project area.
- **High:** Species listed as having “high” potential to occur within the project area are those species for which there is a known record of occurrence in the vicinity of the project area and there is highly suitable habitat present in the project area.
- **Present:** Species listed as “present” in the project area are those species for which the species was observed in the project area during the investigations.
- **Not Present:** Species listed as “not present” in the project area are those species for which the species was searched for and was not observed during the investigation.

5.0 RESULTS

5.1 Background Data Search Results

Based on a review of the databases listed in Section 4.1, seventy-three (73) statewide rare plant species have been documented within the nine (9) quadrant search of the project area (Appendix A: Table 1,

Figure 4). Additionally, five (5) amphibians, eleven (11) birds, one (1) crustacean, nine (9) fish, two (2) insects, thirteen (13) mammals, eleven (11) mollusks, and one (1) reptile were also documented within the nine (9) quad search (Table 1, Appendix A: Figure 4)

5.2 Species Information and Occurrence Potential

Table 1. Special Status Species Occurrence Potential		
Scientific Name	**Common Name**	**Potential to Occur**
Amphibians		
Ascaphus truei	Pacific tailed frog	Not Present
Plethodon elongatus	Del Norte salamander	Low
Rana aurora	northern red-legged frog	None
Rana boylii	foothill yellow-legged frog	None
Rhyacotriton variegatus	southern torrent salamander	Not Present
Birds		
Accipiter cooperii	Cooper's hawk	Low
Accipiter gentilis	northern goshawk	Low
Haliaeetus leucocephalus	bald eagle	Low
Ardea herodias	great blue heron	Low
Charadrius montanus	mountain plover	None
Icteria virens	yellow-breasted chat	None
Pandion haliaetus	osprey	Moderate/Low
Bonasa umbellus	ruffed grouse	Moderate
Sphyrapicus ruber	red-breasted sapsucker	Low
Psiloscops flammeolus	flammulated owl	Low
Strix occidentalis caurina	Northern Spotted Owl	Low
Crustaceans		
Pacifastacus leniusculus klamathensis	Klamath crayfish	None
Fish		
Acipenser medirostris	green sturgeon	None
Acipenser transmontanus	white sturgeon	None
Catostomus rimiculus	Klamath smallscale sucker	None
Cottus aleuticus	Coastrange sculpin	None
Cottus asper ssp.	prickly sculpin	None
Entosphenus tridentatus	Pacific lamprey	None
Oncorhynchus kisutch	coho salmon - southern Oregon / northern California ESU	None
Oncorhynchus mykiss irideus	steelhead - Klamath Mountains Province DPS	None
Oncorhynchus tshawytscha	Chinook salmon - upper Klamath and Trinity Rivers ESU	None
Insects		
Bombus occidentalis	western bumble bee	Moderate
Parapsyche extensa	King's Creek parapsyche caddisfly	None
Mammals		
Arborimus pomo	Sonoma tree vole	Low

Table 1. Special Status Species Occurrence Potential		
Scientific Name	**Common Name**	**Potential to Occur**
Erethizon dorsatum	North American porcupine	Low
Gulo gulo	California wolverine	None
Martes caurina humboldtensis	Humboldt marten	None
Pekania pennanti	Fisher	Low
Corynorhinus townsendii	Townsend's big-eared bat	Low
Lasionycteris noctivagans	silver-haired bat	Low
Lasiurus cinereus	hoary bat	Moderate
Myotis evotis	long-eared myotis	None
Myotis lucifugus	little brown bat	Low
Myotis thysanodes	fringed myotis	Low
Myotis volans	long-legged myotis	Present
Myotis yumanensis	Yuma myotis	Low
Mollusks		
Monadenia callipeplus	downy sideband	None
Monadenia churchi	Klamath sideband	None
Monadenia infumata ochromphalus	yellow-based sideband	None
Monadenia infumata setosa	Trinity bristle snail	Moderate
Ancotrema voyanum	hooded lancetooth	None
Helminthoglypta talmadgei	Trinity shoulderband	None
Pristinicola hemphilli	pristine pyrg	None
Lanx alta	highcap lanx	None
Margaritifera falcata	western pearlshell	None
Juga orickensis	redwood juga	Moderate
Gonidea angulata	western ridged mussel	None
Reptiles		
Emys marmorata	western pond turtle	None

5.2.1 AMPHIBIANS

Ascaphus truei (Pacific tailed frog)
Listing Status: Global Rank – G4, State Rank S3S4, CDFW -Species of Special Concern, IUCN -Least Concern
The Pacific tailed frog is found in montane hardwood-conifer, redwood, douglas-fir, and ponderosa pine habitats. Restricted to swift perennial montane streams with cobble substrates. Tadpoles require water below 15^{o} Celsius and reach metamorphosis in 1-2 years in coastal areas (2-3 years in the Cascade Mountains). From stomach content analysis forage items consist primarily of diatoms, some filamentous algae, and seasonally, conifer pollen.
Occurrence Potential
Not present, the habitat exists on the property, but the species was not observed during surveys.

Plethodon elongatus (Del Norte salamander)
Listing Status: Global Rank – G4, State Rank – S3, CDFW – Watch List, IUCN – Near Threatened

The Del Norte salamander inhabits cool, moist, stable microclimates with deep litter layers within closed, multi-storied canopy, large tree-dominated coniferous and deciduous forests. They occur in mountain brook micro-environments of low order streams with cold (<15° Celsius) low velocity flows over unsorted talus substrates and usually in mesic mature to old-growth forests. Adults reach around 52 millimeters in total length and can also be found within the damp riparian areas under dense shade. Eggs are aquatic and larvae metamorphose in 3.5 years.

Occurrence Potential

Low potential to occur, there is not enough old growth on the property to support the species (Appendix A: Figure 5).

Rana aurora (northern red-legged frog)

Listing Status: Global Rank – G4, State Rank – S3, CDFW - Species of Special Concern, IUCN - Least Concern, USFS - Sensitive

The northern red-legged frog inhabits humid forests, woodlands, grasslands, and streamsides of Northern California, usually near dense riparian cover. Their distribution ranges from the Pacific Northwest, including Vancouver Island, and south along the Pacific Coast to Mendocino County, California. The northern red-legged frog occupies a variety of aquatic habitats including wetlands, rivers, streams, ephemeral, and permanent ponds. During the non-breeding season adults can be found within coarse woody debris and in mid-level canopy trees. The home ranges of breeding adults can be several kilometers. Adults are insectivores, while tadpoles feed on periphyton (algae). Breeding in California occurs as early as January and will continue into late-June, when metamorphosis takes place. Oviposition generally takes place in densely vegetated, shallow portions of wetlands with little current, and in unusual cases, egg masses have been observed in water up to 500 centimeters in depth.

Occurrence Potential

No potential to occur, the property is too far inland (Appendix A: Figure 6).

Rana boylii (foothill yellow-legged frog)

Listing Status: CNDDB Element Ranks – Global G3, State S3, BLM_S-Sensitive, CDFW -Species of Special Concern, Candidate Threatened, IUCN -Near Threatened, USFWS -Sensitive

Occurrence of the foothill yellow-legged frog is directly related to the presence of perennial water. This species has the highest aquatic affinity of the ranids and are typically found in streams with temperatures below 26° Celsius in rocky substrates with open sunny banks. Presence has also been documented in isolated pools and vegetated backwaters with deep shade and that are spring fed. Eggs are deposited behind cobbles and small boulders where the larvae grow in the vicinity and metamorphose in 3 to 4 months.

Occurrence Potential

No potential to occur as no streams on the property are perennial (Appendix A: Figure 7).

Rhyacotriton variegatus (southern torrent salamander)

Listing Status: Global Rank – G3G4, State Rank – S2S3, CDFW -Species of Special Concern, IUCN - Least Concern, USFWS -Sensitive

The southern torrent salamander is primarily found in mountain brook microenvironments of low order streams with cold (<15° Celsius) low velocity flows over unsorted talus substrates and usually in mesic mature to old-growth forests. Adults reach around 52 millimeters in total length and can also be found within the damp riparian areas under dense shade. Eggs are aquatic and larvae metamorphose in 3.5 years.

Occurrence Potential

Small amounts of suitable habitat were present on the property but none were identified during surveys

(Appendix A: Figure 8).

5.2.2 BIRDS

Accipiter cooperii (Cooper's hawk)
Listing Status: Global Rank – G5, State Rank – S4, CDFW – Watch List, IUCN – Least Concern
A medium-sized hawk of the woodlands and is the most widespread nesting bird south of Canada (Kaufman, 2020). They can be found in mature forest, open woodlands, wood edges, and river groves; nesting in deciduous, coniferous, and mixed woods, typically with tall trees and openings or an edge habitat nearby (Kaufman, 2020) at elevations from sea-level to up to 9,800 feet, but frequently found at 3,300 feet. Nests are built in either deciduous or coniferous trees, usually 25-50 feet above ground, often placed on top of a preexisting foundation such as a clump of mistletoe or an old squirrel or large bird nest, and are bulky stick structures lined with softer material such as bark (Kaufman, 2020). Adult Cooper's hawks have reddish eyes, steely blue-gray backs, and reddish-barred chests, with a sharp division of color on the face between a black cap and gray neck and thick dark bands on the tail (Cornell University, 2019). The *A. cooperii* diet consists mainly of birds and small mammals such as robins, jays, flickers, and chipmunks, tree and ground squirrels, mice, and bats, and occasionally reptiles and insects (Kaufman, 2020)
Occurrence Potential
Low potential to occur within the project area due to low site elevation and lack of suitable habitat (Appendix A: Figure 8).

Accipiter gentilis **(**northern goshawk)
Listing Status: Global Rank – G5, State Rank – S3, BLM – Sensitive, CDF – Sensitive, CDFW – Species of Special Concern, IUCN – Least Concern, USFS – Sensitive
Northern goshawks have broad, rounded wings and long tails. Adults range in size between a crow and a goose and are dark slate gray above with pale gray barred underbody and a dark head with a wide white stripe over the eye (Cornell University, 2019). Juveniles are brown and brindled, with narrow dark bands in the tail and an indistinct pale eyebrow stipe and yellow eyes (Cornell University, 2019). Goshawks can be found in mixed and coniferous forests, generally restricted to dense woodland areas, but may be in open woods or along edges and in any forest type during winter excursions to the south, staying at a general elevation of 9,800 feet (Kaufman, 2020). This species hunts by flying low through the woods or perching quietly at mid-levels in trees, then after spotting prey, attack with a short flight in a great burst of speed (Kaufman, 2020). Prey consists mainly of small mammals and many medium-sized birds, such as grouse and crows; also, many squirrels, rabbits, snowshoe hares, snakes and insects (Kaufman, 2020). Nest sites are often located in deciduous trees, in a major crotch in the trunk, commonly 25-50 feet above ground (Kaufman, 2020). Nests are a platform of sticks lined with finer material and green foliage and may be reused each year.
Occurrence Potential
Low potential to occur within the project area due to low site elevation and lack of suitable habitat (Appendix A: Figure 9).

Haliaeetus leucocephalus (bald eagle)
Listing Status: Global Rank – G5, State Rank – S3, Federal Status – Delisted, State Status – Endangered, BLM – Sensitive, CDF – Sensitive, CDFW – Fully Protected, IUCN – Least Concern, USFS – Sensitive, USFWS – Birds of Conservation Concern
The bald eagle is a prolific raptor species inhabiting a wide range of habitats throughout North America, including ocean shores, lake margins, lower montane coniferous forests, alpine and sub-

alpine riverine corridors, and wetland complexes. Their nesting habitat requirements include large, old-growth, or live-tree-dominant stands with open branches, often associated with ponderosa pine. They roost communally in the winter. Breeding begins in early-to-mid-winter, with nesting beginning in late winter, early spring, and rearing and dispersal occurring through the summer into late fall.
Occurrence Potential
Low potential to occur, lack of suitable habitat within the property (Appendix A: Figure 10).

Ardea Herodias (great blue heron)
Listing Status: Global Rank – G5, State Rank – S4, CDF – Sensitive, IUCN – Least Concern
The great blue heron inhabits brackish, estuarine, and freshwater marshes and swamps, lake margins, tide-flats, rivers and streams, wet meadows, riparian forests, and wetlands. They are opportunistic hunters feeding on nearly anything within striking distance, including fish, amphibians, reptiles, small mammals, insects, and other birds. The great blue heron is a colonial nester building nests in tall trees, cliffsides, and sequestered places on marshes. Rookery sites are often in close proximity to foraging areas. Breeding and nesting occurs in late winter, early-spring and coincides with the increased duration of low-tides and in-shore movement of prey (fish). Rearing and dispersal occurs through the summer and into late fall.
Occurrence Potential
Low potential to occur, lack of suitable habitat within the property (Appendix A:, Figure 11).

Charadrius montanus (mountain plover)
Listing Status: Global Rank – G3, State Rank – S2S3, BLM - Sensitive, CDFW - Species of Special Concern, IUCN - Near Threatened, NABCI - Red Watch List, USFWS - Birds of Conservation Concern
The mountain plover inhabits short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms within chenopod scrub and valley and foothill grasslands of western North America. A winter visitor to California, the mountain plover primarily occurs in the Central and Imperial Valleys of central and southern California from September to mid-March, with peak numbers occurring from December through February. Wintering birds will seek invertebrate prey in cracks and crevices of soil and other substratum such as alkali flats.
Occurrence Potential
No potential to occur, project area exists outside of species known range (Appendix A: Figure 12).

Icteria virens (yellow-breasted chat)
Listing Status: Global Rank – G5, State Rank – S3, CDFW – Species of Special Concern, IUCN – Least Concern
The yellow-breasted chat inhabits riparian thickets of willow and other brushy tangles near watercourses within riparian scrub, woodlands, and forests. Yellow-breasted Chats forage mainly on spiders and insects, as well as fruits and berries, often relying on a combination of both while on wintering grounds. Nests are built low in dense riparian vegetation, such as berry and wild grape thickets, and hardwood scrub, approximately 0.25-to-2.5-meters above the ground. Breeding takes place from early April to mid-August.
Occurrence Potential
No potential to occur, project area exists outside of species known range (Appendix A: Figure 13).

Pandion haliaetus (osprey)
Listing Status: CNDDB Element Ranks – Global G5, State S4
Ospreys are a large, slender hawk with long narrow wings and long legs. They have a marked kink in

their wings, making an M-shape when seen from below. The birds are brown above and white below, with a broad brown stripe through their eye. They usually are found around any form of body of water eating almost exclusively fish, and nest on top of poles and dead trees.
Occurrence Potential
Moderate potential to occur on the property intermittently but low potential to create a nest on the property (Appendix A: Figure 14).

Bonasa umbellus (ruffed grouse)
Listing Status: Global Rank – G5, State Rank S3S4, CDFW – Watch List, IUCN – Least Concern
The ruffed grouse inhabits dense canyon-bottom or stream-side growths, usually of mixed deciduous and coniferous trees within coastal, upper montane, and riparian mixed-stand forests. Marked populations occur within the extreme northern humid coastal strip of Del Norte, Humboldt, and Siskiyou counties. The ruffed grouse is an omnivorous consumer whose food requirements include leaves, buds, and fruits of ferns, shrubs, and woody plants, as well as protein-rich prey such as insects and other invertebrates, particularly for 2 to 4 week-old precocious chicks. In the early spring, hens choose nest sites at the base of a tree, stump, or rock in areas with sparse ground cover that give a clear view of predators. Nests may also be built in brush piles, or in the bases of partially open, hollowed-out stumps. Rearing and dispersal occurs throughout the summer into late fall.
Occurrence Potential
Moderate potential to occur along the Trinity River but not within influence of the project areas (Appendix A: Figure 15).

Sphyrapicus ruber (red-breasted sapsucker)
Listing Status: Global Rank – G5, State Rank – S4
The red-breasted sapsucker inhabits a variety of forested and woodland habitats throughout western and coastal North America, occurring as far north as southeastern Alaska, and as far south as northern Baja California. Their food requirements include sap, fruits, and arthropods. Red-breasted sapsuckers are cavity nesters requiring standing snags or hollow trees. Nesting occurs in the early spring, with fledging occurring in the late summer.
Occurrence Potential
Low potential to occur within influence of the project area (Appendix A: Figure 16).

Psiloscops flammeolus (flammulated owl)
Global Rank – G4, State Rank – S2S4, IUCN - Least Concern, NABCI - Yellow Watch List, USFWS - Birds of Conservation Concern
The flammulated owl inhabits montane forests with dispersed understory brush within lower mountain and subalpine forests. Occurrence is closely associated with the presence of ponderosa pine and Jeffery pine. The flammulated owl feeds mostly on insects, especially owlet moths, geometrid moths, crickets, grasshoppers, bugs, and beetles, and on rare occasions will feed small birds, bats, mice, or shrews to nestlings. Nesting occurs in late spring, early fall within cavities in trees, occasionally utilizing nest boxes. Rearing and dispersal occurs throughout the summer into late fall.
Occurrence Potential
Low potential to nest within the project area, suitable habitat boarders the property (Appendix A: Figure 17).

Strix occidentalis caurina (Northern Spotted Owl, NSO)
Listing Status: IUNC Red List of Threatened Species 2017
A medium-sized (16-19 inches long) dark brown owl that primarily inhabits old growth forests. In

October of 2020 O'Brien Biological Consultants conducted a NSO survey titled "*A Northern Spotted Owl (NSO) Habitat and Impact Assessment for Cannabis Operations ofr the Vital Green Future LLC, 5200 South Fork Road, APN# 008-080-32-000*" which is located in Appendix A. O'Brien did not identify any potential impacts to nearby NSO occurrences.

5.2.3 CRUSTACEANS

Pacifastacus leniusculus klamathensis (Klamath crayfish)
Listing Status: Global Rank – G5T5, State Rank – S3
The Klamath crayfish is a temperate-zone freshwater sub-species of *Pacifastacus leniusculus* endemic to the Klamath river watershed. They can be found in habitats ranging from clear, shallow coastal streams to major riverine habitats with high turbidity, as well as lakes and reservoirs; they have also been observed copulating, molting, and laying eggs in brackish waters. They are a non-burrowing crayfish typically seeking shelter in rocky crevices or woody debris within streambeds and littoral zones. Copulation occurs during the fall (September or October), with eggs hatching in the spring (March and April) coinciding with warming waters.
Potential Occurrence
Being that the tributaries on the subject property include nearly 100-foot waterfall confluences and in the summer become intermittent or dry, Klamath crayfish have no potential to occur within the subject property.

5.2.4 FISH

Acipenser medirostris (green sturgeon)
Listing Status: Global Rank – G2, State Rank – S2, CDFW – None,
USFWS - Threatened, NMFS - Species of Concern, AFS Status - Vulnerable
Green sturgeon are an anadromous species found in estuaries, in the lower reaches of large rivers, and in brackish water off river mouths spending most of their lifetime in the ocean except to spawn in freshwater and can live up to 70 years weighing up to 350 pounds. Within California, green sturgeon are found in the Klamath and Trinity river basins; these populations unique in that they represent the only populations in California that migrate a significant distance upstream to spawn (Nakamoto and Kisanuki, 1995). Other spawning populations are found in the Sacramento River and in Oregon, the Rogue River. In California the Klamath and Trinity Rivers are believed to be the principal spawning streams for green sturgeon, which are limited in both rivers by migrational barriers; Ishi Pishi Falls (river mile (rm) 67) in the Klamath River and Greys Falls (rm 43) in the Trinity River (Benson et al., 2007).
Occurrence Potential
Green sturgeon are present within the Klamath-Trinity River system and are an anadromous species. However, being that the tributaries on the subject property include nearly 100-foot waterfall confluences they have no potential to occur within the subject property

Acipenser transmontanus (white sturgeon)
Listing Status: Global Rank – G4, State Rank – S2, CDFW - Species of Special Concern, NMFS – None, AFS Status – EN - Endangered
White sturgeon are anadromous with spawning populations in California found in the Sacramento and Feather Rivers. White sturgeon typically remain within the San Francisco Estuary throughout their lives, making upstream migrations into freshwater to spawn and quickly return to the estuary (Miller et al., 2020). Historically, these fish would grow to about 20 feet, weighing nearly 1,800 pounds, and

living over 100 years. White sturgeon are prized for their roe (caviar) and for their flesh to eat. In the Sacramento River basin, the current maximum length is closer to 10 feet with maximum weights around 400 pounds and about 27 years old however, these individuals are uncommon (Moyle, 2002).
Occurrence Potential
White sturgeon are an anadromous species with the only spawning populations in California are within the Sacramento and Feather River systems. There is no potential for occurrence on the subject property.

Catostomus rimiculus (Klamath smallscale sucker)
(To be noted: *C. rimiculus spp.*is a listed sub-species and is an isolated population, that will remain isolated, in Jenny Creek that is within the Klamath River Watershed.)
The Klamath smallscale sucker is widely distributed from the Rouge River in Oregon south to the Trinity River in California. In spite of the species wide distribution, its life history and ecology have been understudied. This sucker grows to about 19 ¾ inches and may live up to 15 years and primary inhabit deep slow pools. As a benthic omnivore, the Klamath smallscale sucker feeds on algae, zooplankton, small invertebrates, crustations, and plants. Klamath smallscale suckers migrate up tributaries to spawn in the spring and juveniles are abundant in these natal streams (Moyle, 2002).
Occurrence Potential
The Klamath smallscale sucker does populate the Trinity River and its larger tributaries. However, being that the tributaries on the subject property become seasonally intermittent or dry, there is no potential for occurrence.

Cottus aleuticus (Coastrange sculpin)
The Coastrange sculpin is found along the Pacific Coast from the Aleutian Islands and Bristol Bay, Alaska and south to Santa Barbara County, California. Even though this sculpin species is locally abundant, its distribution is sporadic south of Mendocino County, California. The coastrange sculpin is more commonly associated with lagoons and estuaries, than inland waters, where larval rearing is presumed to occur. Swift, gravel bottomed habitats are preferred where boulders and logs provide cover, with temperatures less than 22^{o} Celsius. Coastrange sculpins are mostly nocturnal, except during downstream migrations in January through March for spawning closer to the estuary where the larvae rear. Being an amphidromous species is advantageous where, individuals are increasingly larger in upstream areas while the smaller larvae occupy estuaries and lagoons where smaller forage items are more abundant. Coastrange sculpin commonly co-occur with prickly sculpin, threespine stickle back, and salmonids (Moyle, 2002).
Occurrence Potential
Coast range sculpin are found along the California coastal stream and rivers, use coastal lagoons for larval rearing and are rarely found more than 12 miles upstream from the stream or river mouth. There is no potential for occurrence on the subject property.

Cottus asper (prickly sculpin)
Prickly sculpin commonly occur with coastrange sculpin (*C. aleuticus*) and can be found in coastal streams and estuaries from the Kenai Peninsula, Alaska, south to the Ventura River in southern California. Inland the prickly sculpin co-exists with riffle sculpin (*C. gulosus*). There are few fishes that can live in a as wide a range of environments as the Prickly sculpin. This species can live in fresh water to brackish water to sea water; in cold, clear streams to large warm and turbid rivers; in lakes and reservoirs ranging from large to small, eutrophic to mesotrophic; and can tolerate temperatures exceeding 20^{o} Celsius and have been found in lowland rivers with temperatures up to 30^{o} Celsius. In lotic environments, the prickly sculpin inhabits a variety of stream habitats with the presence of cover

from overhanging vegetation, rocks, and logs; cover is presumed to be the key habitat element for this species. The prickly sculpin spawns in loose gravel substrates with flowing water; the nests are guarded by the males until hatching. After hatching the larvae can be swept downstream into pools or the estuary and in lentic environments, they are pelagic. Once transformed juveniles settle to the bottom and rear to adulthood moving upstream as they grow. The oldest documented prickly sculpin was 7 years old and measured 4 inches long and reach sexual maturity by four years old where size plays a more important role than does age (Moyle, 2002).

Occurrence Potential

Prickly sculpin occur within the Trinity river watershed. However, being that the tributaries on the subject property become seasonally intermittent or dry there is no potential for occurrence.

5.2.4.1 Lampetra

Two genera of Lamprey species occur within the South Fork Trinity River watershed.
All lamprey species require low gradient streams and rivers for spawning and rearing with suitable gravels for spawning and silty littoral margins and backwater areas for rearing.

Entosphenus tridentatus (Pacific lamprey)
California North Coast Regional Management Unit (RMU)
Listing Status: Global Rank – G4, State Rank – S4, CDFW - Species of Special Concern, AFS Status - Vulnerable
The Pacific lamprey an anadromous species that spawning in freshwater, rearing for up to seven years in freshwater in a larval state and then migrates to the ocean to grow to adulthood. Adults can reach up to 31 inches in length and die after spawning. As larvae, the Pacific lamprey are non-parasitic but after metamorphoses, are parasitic as adults. Spawning normally occurs in the spring after returning from the ocean in the winter and a preference is shown for low gradient stream reaches with gravel pool tails. After hatching, the newly emerged larvae (ammocoetes) drift downstream to silty areas where they will rear for up to seven years before migrating to the ocean to become adults (Goodman and Reid 2012).

Lampetra richardsoni (western brook lamprey)
California North Coast Regional Management Unit (RMU)
Listing Status: Global Rank – G4G5, State Rank – SNR
The western brook lamprey spawns in the spring in gravel substrates near pool tails and the adults typically die after spawning. Newly hatched ammocoetes emerge and drift into silty backwater areas where they rear for up to seven years. Metamorphosis into the adult stage occurs in the spring with adults being 4.7 to 5.5 inches in length. Western brook lampreys are non-parasitic and do not feed as adults (Goodman and Reid 2012).

Occurrence Potential

Lamprey species are present within the South Fork Trinity River watershed. However, being that the tributaries on the subject property include nearly 100-foot waterfall confluences and in the summer become intermittent or dry, they have no potential to occur within the subject property.

5.2.4.2 Salmonidae

For most species falling into the Salmonidae family there are similarities in general life history cycles and freshwater habitat needs for survivability from one stage to the next and persistence from one generation to the next. This is true for the salmonids that currently occur within the South Fork Trinity River watershed which are individually described below.

All these genera are anadromous, spawn and rear in freshwater, migrate to the ocean, and then return to spawn. Habitat requirements are similar in that cool to cold water temperatures are crucial for survival. Stream flows and pool-riffle-run habitat with adequate cover complexity and forage items are critical for age class strength and reproductive success. The anadromous life cycle requires very specific physiological changes to occur (osmoregulation) necessary to survive in the two opposite aquatic environments. Juveniles will change from a parr to a smolt and in adults this physiological change occurs in the ocean and is most likely driven by gonad development and environmental cues.

Oncorhynchus kisutch (coho salmon)
Southern Oregon Northern California Coast (SONCC) ESU
Listing Status: Global Rank – G4T2Q, State Rank – S2, CDFW –Threatened,
USFWS – Threatened, Status Rank – 2, AFS -Threatened
Of all the six Pacific salmon species, coho are the most studied and most closely related to Chinook salmon. The potential for hybridization is present but rarely occurs within the natural stream environment. Coho salmon show strong fidelity to natal streams, a critical element of their biology as the spawning stream is cohort occupied on a year-round basis. The South Fork Trinity River watershed lies within the Evolutionary Significant Unit (ESU) from Punta Gorda north to the Oregon border. Punta Gorda marks the northern end of a long steep coastline with inaccessible tributaries to coho but is also a prominent feature affecting localized ocean currents. This ESU contains genetically different populations and is the southernmost extent of the existing population range.

In the SONCC, adult coho return to freshwater beginning with the rains and as flows allow with the runs peaking in November to January. Course gravels are the preferred substrate for spawning, and females build a series of redds moving upstream. Spawning occurs shortly upon arrival to the natal location and with the availability of cohort mates. Fry emerge from the gravels in three to five weeks depending on temperature and will rear as parr for a year. The following spring as flows recede, the 1+ juvenile coho will migrate downstream to the ocean. For coho juveniles to rear, an additional year in freshwater is needed to migrate as 2+. This is not uncommon, but rearing coho juveniles are a proportionally smaller percent of the cohort population. Optimal water temperatures vary by life cycle stage where embryonic development is reported to be 4.4 to 13.3^{o} Celsius, with juveniles optimal range from 12 to 14^{o} Celsius, and adult migrations and spawning not exceeding 15.6^{o} Celsius (Moyle et al. 2017).
Occurrence Potential
Coho salmon are present within the South Fork Trinity River watershed. However, being that the tributaries on the subject property include nearly 100-foot waterfall confluences, they have no potential to occur within the subject property.

Oncorhynchus tshawytscha (Chinook salmon)
Upper Klamath-Trinity River ESU
Listing Status: Global Rank – G5T3Q, State Rank – S1S2, State Status – Candidate Endangered, CDFW-Species of Special Concern, USFWS-Threatened (re-instated 2005), AFS-Threatened,
Note:
August 18th, 2021, Fish and Game Commission Meeting Outcomes. Listing upper Klamath-Trinity River spring run Chinook salmon as *threatened* under CESA (Pursuant to Section 2075.5, Fish and Game Code). Ratifying finding to list was rescheduled to a future Commission meeting.

Chinook salmon express significant variability in life history strategies and characteristically exhibit an

"ocean-type" freshwater stage where the juveniles spend less than a year in freshwater, migrating to the ocean typically within several months after emerging from redds. Two distinct runs occur within the South Fork Trinity River watershed: a spring run and a fall run. Both have similar habitat requirements where a preference is shown for the largest substrate size of all salmonids in California showing a preference for cobbles and large gravels. In general, fry emerge from the gravel in the late winter or early spring and begin outmigration within a week to a month after emergence. In the Redwood Creek watershed, the peak period for emigration is around June presumably having adapted to the mouth becoming barred from the ocean seasonally during low flows. A small proportion might overwinter as parr, but the majority will reside in the estuaries or lagoons for a few months prior to entering the ocean. Water temperature is an important component for freshwater survival and varies for the different life cycle stages. In general, for adults (migration, holding, and spawning), optimal temperatures range from 10 to 16^{o} Celsius, incubation is the most temperature sensitive and the optimal range is from 9-13^{o} Celsius, and for juveniles (rearing and smoltification) ranges can be averaged at 13-19^{o} Celsius.

Where the differences lay in their life-cycle timing, adult Upper Klamath/Trinity River spring-run Chinook salmon enter the Klamath Estuary in March through July, peaking runs are in late May or early June. Daily migrations can be up to 3.7 km (about 2.2 mi.) a day and reach the South Fork Trinity River from May through August. They over summer in cold water areas from 10-16°Celsius for 2-4 months and spawning begins in early September, about 4-6 weeks earlier than the fall-run Chinook salmon. Due to the differences in run-timing and access to a wide variety of spawning habitat historically, there was minimal spawning overlap between fall- and spring-run Chinook. Spring-run Chinook adults require deep, cool pools to over-summer, as found at the mouths of tributaries, and pools with hyporheic flow from springs or groundwater seeps. Eggs hatch in 40-60 days after spawning typically in January through late May, and remain inter-gravel absorbing their yolk sacs for another 4-6 weeks. Juvenile spring-run Chinook begin migrating downstream after emerging from the gravels beginning in February through mid-June to feed and grow in the ocean before returning to spawn at age three or four (Moyle et al. 2017).

The fall run typically only is present during the winter months and will enter the South Fork Trinity River as early September as precipitation allows but peaks in late October and can continue through December. Fry will emerge and being their downstream migration shortly after emerging in the spring.

Occurrence Potential
Chinook salmon are present within the South Fork Trinity River watershed. However, being that the tributaries on the subject property include nearly 100-foot waterfall confluences, they have no potential to occur within the subject property.

Oncorhynchus mykiss (steelhead trout)
Northern California Summer Steelhead (NCCS) Distinct Population Segment (DPS)
Listing Status: Global Rank – G5T2T3Q, State Rank – S2, CDFW – Candidate Endangered (June 18, 2019), Federal Status – Threatened, Status Rank – 2, AFS-Threatened
Northern California Winter Steelhead (NCCW) DPS
Listing Status: Global Rank – G5T2T3Q, State Rank –S3, Federal Status – Threatened, Status Rank 3

August 18th, 2021, Fish and Game Commission Meeting Outcomes. Listing upper northern California summer steelhead as *endangered* under CESA (Pursuant to Section 2075.5, Fish and Game Code). Ratifying finding to list was rescheduled to a future Commission meeting.

Summer steelhead and winter steelhead are morphologically similar with the differences being migration timing, gonadal maturity at migration, and spawning locations. Additionally, steelhead are essentially an anadromous form of rainbow trout and can be residents that remain in freshwater all their lives. Within many river systems, steelhead and rainbow trout share the same gene pool which contributes to the ability for adaptation to the highly unpredictable changing conditions of coastal watersheds being subject to frequent disturbances. Unlike salmon, steelhead can spawn more than once (are iteroparous), and some may repeat spawning 2 to 4 times. In some coastal watersheds repeat spawners comprise as much as 25% of the cohorts in any given year. Freshwater occupation is highly variable at all life cycle stages. Juveniles can rear in freshwater for up to three years before migrating to the ocean and then remain in the ocean for as long as four years.

Steelhead generally migrate further upstream and into smaller streams than salmon by possessing a body form adapted to faster water and navigating steeper gradients. These smaller systems include the habitats which support their varying life cycle needs. Suitable habitats for winter and summer steelhead are similar with loose gravels being the optimal spawning substrate and with cover complexity (logs, boulders, and bubble curtain) needed within pools and riffles to accommodate several years of juvenile residency under varying seasonal flows and providing consistent prey items. Generally, both winter and summer steelhead have the same cold water needs with optimal spawning and embryo development temperatures ranging from 5-11^{o} Celsius, the temperature range for juveniles to be between 10-17^{o} Celsius, and for adults holding and maturing to reproductive ripeness ranging from 10-15^{o} Celsius.

Winter steelhead migration timing at age is more similar to salmon, where in the Redwood Creek system adults will typically enter freshwater from November to April. Spawning is most active from February through April and after emerging from the redd in two to three months, fry will rear and grow to juveniles. Juveniles will rear in freshwater for two years and then migrate to the ocean as smolts. This downstream migration to the ocean occurs in the spring and summer.

Migration timing for adult summer steelhead to move back into freshwater is in the spring where they will hold over summer as their gonads mature. Over summer, survival is dependent on critical well shaded habitats with depths greater than three meters providing colder water temperatures and even thermal stratification in the deeper pools. Summer steelhead are fall spawners and the survivors will migrate back to the ocean after spawning and as flows allow. After emerging from the redds, the fry move off to the margins and rear into juveniles that will remain in freshwater anywhere from one to three years before transitioning into smolts. The Summer steelhead smolts will migrate downstream to the ocean with winter flows (Moyle et al. 2017).

Occurrence Potential

Steelhead are present within the South Fork Trinity River watershed. However, being that the tributaries on the subject property include nearly 100-foot waterfall confluences, they have no potential to occur within the subject property.

5.2.4 INSECTS

Bombus occidentalis (western bumble bee)

Global Rank – G2G3, State Rank – S1, USFS - Sensitive

The western bumble bee is a historically common and widespread species capable of inhabiting a wide range of habitats throughout western North America. Their foraging habitat needs include areas rich in

floral resources such as grasslands and meadows. They are generalist foragers not typically dependent on any one flower type; however, they often select specific suites of plants for obtaining nectar and pollen based on their flower structure. Other habitat requirements include above and below-ground micro-sites for overwintering and nesting, including logs, stumps, and abandoned rodent and ground-nesting bird nests. They are a highly social species emerging in annual colonies in late winter or early spring.

Occurrence Potential

Moderate potential to occur within the property, but none were observed during surveys.

Parapsyche extensa (King's Creek parapsyche caddisfly)

Listing Status: Global Rank – GH, State Rank – SH

The King's Creek parapsyche caddisfly is an aquatic invertebrate species that until recently (2013) was known only from King's Creek Meadow in Mt. Lassen Volcanic National Park. *P. extensa* appears to be restricted to Mt. Lassen Volcanic National Park and up to 20 km northwest of the park within Hat Creek (Givens, 2013). Not much life history or behavioral information is available for this species; however, larvae in this genus usually live in small, cold, fast-flowing streams, and construct a retreat of small stones and detritus with a silken mesh net for capturing food particles.

Occurrence Potential

No potential to occur, outside of the species known range.

5.2.5 MAMMALS

Arborimus pomo (Sonoma tree vole)

Listing Status: Global: G3, State: S3, CDFWS-Species of Special Concern, IUCN-Near Threatened

Endemic to California, the Sonoma tree vole (*Arborimus pomo*) is a red, furry, nocturnal vole up to eight inches long (Reid, 2006). The breeding period lasts year-round resulting in a litter of two that is weaned for an additional 30-40 days (Reid, 2006; Brylski and Harris, 1990). *A. pomo* prefers moist, mature or old growth Douglas fir, redwood, or mixed conifer forests with high canopy cover for food and nest sites (Brylski and Harris, 1990). The vole takes up old bird nests high in trees and is mostly arboreal with limited activity on the forest floor (Reid, 2006). Its diet consists of needles and inner twig bark of Douglas fir trees, but also feeds on true firs, Sitka spruce, and Western hemlock (Blois et al., 2008). They are listed as Near Threatened on the IUCN Red List (Blois et al., 2008) and are vulnerable to logging and habitat fragmentation (Reid, 2006).

Occurrence Potential

Low potential to occur within the project area due to lack of suitable habitat (Appendix A: Figure 18).

Erethizon dorsatum (North American porcupine)

Listing Status: CNDDB Element Ranks – Global G5, State S3

The North American porcupine is a black to brown-yellow rodent with a short round body. It is covered in quills that are solid at the base and hollow at the shaft with barbed tips. The porcupine lives in coniferous, deciduous, and mixed forest types and is a generalist without many specific habitat needs.

Occurrence Potential

Moderate potential to occur, but no signs of presence were detected during surveys (Appendix A: Figure 19).

Gulo gulo (California Wolverine)

Global Rank – G4, State Rank – S1, CDFW-Fully Protected, IUCN-Near Threatened, USFS-Sensitive

The California wolverine inhabits caves, logs, and burrows in a wide variety of high-elevation habitats, including alpine, alpine dwarf and montane dwarf scrub, meadow and seep, riparian, subalpine and upper montane coniferous forests, and wetlands. They are found in the North Coast mountains and the Sierra Nevada. They require a nearby water source and are a characteristic long-distance traveler. Wolverines are opportunistic feeders and consume a variety of foods depending on availability. They primarily scavenge carrion, but also prey on small animals and birds, and eat fruits, berries, and insects. Breeding generally occurs from late spring to early fall with litters born between February and April. The California wolverine often moves long distances in short periods of time when dispersing from natal ranges, with large home range requirements dependent on availability of food and differences in habitat. Adult males will generally cover greater distances than females.

Occurrence Potential

No potential to occur, suitable habitat is not within the project area (Appendix A: Figure 20).

Martes caurina humboldtensis (Humboldt marten)

Listing Status: Global Rank – G4G5T1, State Rank – S1, Federal – Threatened, State Status – Endangered, CDFW - Species of Special Concern, USFS - Sensitive

The Humboldt marten is a subspecies of the American marten (*Martes americana*), known only from coastal northwestern California, including southern Del Norte County to northern Humboldt County (Hamlin et al., 2010; UFWS, 2018). This mesocarnivore is compared to the mink in size but is more closely related to the fisher (*Martes pennanti*). They have long, slender bodies with rounded ears, short limbs, and a bushy tail (USFWS, 2018). Out of the two subspecies of American marten (*M. c. humboldtensis* and *M. a. sierrae*), the Humboldt marten is typically darker with a richer golden tone and less orange and yellow in the throat patch, and a smaller skull (Hamlin et al., 2010). The coastal Humboldt subspecies is of greatest conservation concern (Zielinski et al., 2001). Martens are typically associated with closed-canopy, late-successional coast redwood or mesic coniferous forests with complex physical structure near the ground (Hamlin et al., 2010). Structures near the ground may be the lower branches of living trees, coarse woody debris, shrubs, rockfields, and tree boles in various stages of decay (Hamlin et al., 2010). As an opportunistic predator, martens have diverse diet that may include mammals (voles, squirrels, chipmunks, etc.), birds, carrion, eggs, insects, and vegetation (grass, lichens, fungi, nuts, berries, fruits, etc.) (Hamlin et al., 2010).

Occurrence Potential

No potential to occur, outside of species known range (Appendix A, Figure 21)

Pekania pennanti (fisher)

Listing Status: Global Rank – G5T1, State Rank – S1, Federal – Endangered, State - Threatened, BLM – Sensitive, CDFW – Species of Special Concern, USFS – Sensitive

A fisher is a medium-sized carnivore endemic to North America (Reid, 2006), ranging from the Sierra Nevada to the Appalachians of West Virginia and Virginia, excluding the prairie or southern regions of the United States (Rhines, 2003). Ranging in size from 29 – 47 inches long, fishers have dark brown coats with gold to silver coloring on their head and shoulders, with black legs and tail (Rhines, 2003). Active day or night, fishers climb well but mainly hunt on the ground, feeding on small mammals, especially snowshoe hares, while also scavenging fruit, nuts, and fungi, even carrion (Reid, 2006). Fishers are one of the few predators of adult porcupines (Reid, 2006). Like the American marten, fishers are one of the only medium-sized predators agile in trees with the ability to elongate themselves to find prey in hollow trees and holes in the ground (Rhines 2003). For this reason, they prefer areas with dense canopy cover, such as coniferous, deciduous, and mixed forests (Rhines, 2003). This also allows them to utilize hollow trees for dens, which typically include fir, spruce, white cedar, and some hardwoods, reflecting their favorite prey species (Rhines, 2003). In the summer, P. pennanti can be

found sleeping in tree branches, and in hollow trees or below ground in winter (Reid, 2006). Fishers do not hibernate, but their movements are hindered by deep, soft snow (Reid, 2006). Breeding once per year, fishers' broods range from 1 – 6 in March to April (Reid, 2006), averaging three (3) per litter (Rhines, 2003).

Occurrence Potential

Low potential to occurr, suitable habitat is not within the project area but does occur adjacent to the property (Appendix A: Figure 22).

Corynorhinus townsendii (Townsend's big-eared bat)

Listing Status: Global Rank – G4, State Rank – S2, BLM-Sensitive, CDFW-Species of Special Concern, IUCN-Least Concern, USFS – Sensitive, WBWG - High Priority

Townsend's big-eared bats are medium-sized bats with large wings and ears, and fleshy lumps on each side of the mouth behind the nostrils (Reid, 2006). These nocturnal bats are excellent fliers and are swift to evade capture. Like many other bats, they forage low over fields or high in the treetops, feeding on moths or other flying insects (Reid, 2006). *C. townsendii* roost in caves, mines, or buildings, usually near the roost entrance (Reid, 2006) and are extremely susceptible to human disturbance. Breeding season occurs once a year in the winter, peaking from November through February, usually yielding one (1) offspring (Sullivan, 2009). There are two main populations of Townsend's big-eared bats – a western and central/eastern population (Gruver and Keinath, 2006). In the west, these bats live in montane forest thick with pine, fir, and aspen trees, bounded by shrub and grasslands (Sullivan, 2009). Eastern subspecies of these bats occur in isolated populations in oak-hickory forest and other woodlands across the Midwest including Oklahoma, Arkansas, Missouri, Kentucky, Virginia, and North Carolina and more (Reid, 2006). Most (eastern) populations of *C. townsendii* are considered federally endangered, yet the species is listed as Least Concern on the IUCN Red List (Sullivan, 2009). Temperate North American populations are currently threatened by "white-nose syndrome", a fungal disease that grows on the bodies of hibernating bats, resulting in mass deaths of multiple bat populations (Sullivan, 2009). While currently there are no records of Townsend big-eared bat mortalities, the disease continues to more westward across North America (Sullivan, 2009).

Occurrence Potential

Low potential to occur, suitable habitat is not within the project area (Appendix A: Figure 23)

Lasionycteris noctivagans (silver-haired bat)

Listing Status: Global Rank – G3G4, State Rank – S3S4, IUCN - Least Concern, WBWG - Medium Priority

Silver-haired bats (*Lasionycteris noctivagans*) are small bats nearly completely covered in black fur with silver frosting and a dark face (Reid, 2006). Fur covers all but wings, snout, and ears (Bentley, 2017); their tail membranes are furred on the upper surface for about half the length (Reid 2006). These bats are solitary and will seek shelter singly or in small groups under loose bark in snags or dead trees, or inside hollow cavities previously used by birds and squirrels (Bentley, 2017). In the summer, females give birth to twins then males and females segregate, females north and east while males stay in wintering areas (Reid, 2006). They prefer willow, maple and ash trees near ponds, streams and other water ways (Reid, 2006) and forage throughout the early evening before dawn (Bentley, 2017). Diet consists primarily of winged insects such as flies and beetles. Hibernation occurs in dry, warm climates during the winter, from October to March (Bentley, 2017), although locations are not well known (Reid, 2006). Common locally in the northwest, their known range includes lower montane coniferous forests, old growth, and riparian forests (Reid, 2006).

Occurrence Potential
Low potential to occur within the project site but suitable habitat is adjacent to the property (Appendix A: Figure 24)

Lasiurus cinereus (hoary bat)
Listing Status: Global Rank – G3G4, State Rank – S4, IUCN - Least Concern, WBWG - Medium Priority
The hoary bat has short, thick, rounded ears and blunt, rounded noses with small eyes (Anderson, 2002). Their fur is dark brown and heavily frosted with white, appearing almost as stripes, with a yellow band around the face (Reid, 2006). Hoary bats roost 2 to 5 meters above the ground during the day, usually in the foliage of medium to large trees, and near water (Anderson, 2002). In the winter, roosting sites are typically found in tree trunks or on the sides of buildings (Reid, 2006). They prefer open habitats that have access to cover and open areas for feeding, where they prey on many winged insects, primarily moths (Anderson, 2002). Their peak activity is about five hours after sunset, where they forage about the treetops, along streams and lake shores, and in some urban areas with lots of trees. The most widespread of all bats in the United States (Anderson, 2002), they can be found particularly in broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and the north coast coniferous forest. Males and females are generally separated during the warmer months in North America, usually found together only in the mating season (Anderson, 2002). In May and June, females give birth to typically two (2) young (Reid, 2006).
Occurrence Potential
Moderate potential to occur, suitable habitat within and around the project area (Appendix A, Figure 25)

Myotis evotis (long-eared myotis)
Listing Status: Global Rank – G5, State Rank – S3, BLM – Sensitive, IUCN - Least Concern, WBW - Medium Priority
Myotis evotis, or long-eared myotis, can be most easily recognized by their long, black ears (Reid, 2006), longest of all *Myotis* (Weber, 2004). These small bats have rather long and fluffy fur, yellowish to dark brown on the back (Reid, 2006) with a long and slender tragus (Weber, 2004). While *M. evotis* are widespread and listed as Least Concern on the IUCN Red List, individuals are not abundant (Arroyo-Cabrales et al., 2017). These nocturnal bats inhabit mainly forested regions, up to 10,000 feet in elevation (Reid, 2006). This species is either solitary or roosts in colonies of up to 30 individuals (Arroyo-Cabrales et al., 2017). Females, particularly in the Pacific Northwest, choose the most variety of roost sites among any other bat in the area, usually roosting in large snags in canopy gaps or stumps in clear-cut areas (Arroyo-Cabrales et al., 2017), and young are born June-July and raised in maternity colonies (Reid, 2006). Long-eared myotis depend on their hearing for feeding rather than echolocation, preying on moths and beetles in the vegetation (Reid, 2006).
Occurrence Potential
No potential to occur based on CDFW predicted habitat (Appendix A: Figure 26).

Myotis lucifugus (little brown bat)
Listing Status: Global Rank – G3, State Rank – S2S3, IUCN - Least Concern, WBWG - Medium Priority
The little brown bat occurs throughout much of North America and utilizes a multitude of habitat types. Roosting habitats can include human-made structures such as mines and buildings, as well as natural structures such as tree hollows, wood piles, rocky outcrops, and occasionally caves. They are nocturnal feeders foraging within scrubby edge habitat, near bodies of water and streams, and within

old-growth forests. Their diets consist mainly of arthropod species, including spiders, beetles, mayflies, moths, stoneflies, and caddisflies. The little brown bat is a seasonal breeder with mating taking place in the fall before an annual hibernation. They are a colonial species occurring in colonies between 9,000-180,000 individuals.

Occurrence Potential

Low potential to occur based on CDFW predicted habitat (Appendix A: Figure 27).

Myotis thysanodes (fringed myotis)

Listing Status: Global Rank – G4, State Rank – S3, BLM -Sensitive, IUCN - Least Concern USFS - Sensitive, WBWG - High Priority

Myotis thysanodes, or fringed myotis, is the larger of the Myotis species and are the only ones with a fringe of short pale hair along the edge of the tail membrane (Vingiello, 2002; Reid,2006). In the Pacific Northwest, fringed myotis are reddish brown or dark brown (Reid 2006). This subspecies can be found at sea level on the West Coast but is usually found at 4,000 – 6,000 feet in elevation, in oak, pinyon, ponderosa pine forests, as well as desert scrub (Reid, 2006). Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer (Harris, 1990). Widespread in California, fringed myotis occur in all but the Central Valley and Mojave and Colorado desert, and while common locally, abundance of this species is irregular (Harris, 1990). This nocturnal species is active shortly after sunset to 4-5 hours after (Harris, 1990). Roosting sites are easily disturbed and can be found in caves, mines, tunnels, rock crevices, and buildings (Vingiello, 2002; Reid, 2006). Single young are born in late June to early July after a gestation period of 50 – 60 days (Vingiello, 2002) and raised in maternity colonies of 30 – 300 (Reid, 2006). Fringed myotis fly slowly throughout the forest, preying on moths, beetles and other insects, while also gleaning insects off nearby vegetation (Reid 2006). This species is listed as Least Concern on the IUCN Red List (Vingiello 2002). Temperate North American populations are currently threatened by “white-nose syndrome”, a fungal disease that grows on the bodies of hibernating bats, resulting in mass deaths of multiple bat populations (Vingiello, 2002). While currently there are no records of fringed myotis mortalities, the disease continues to expand its range in North America (Vingiello, 2002). \

Occurrence Potential

Low potential to occur based on CDFW predicted habitat (Appendix A: Figure 28).

Myotis Volans (long-legged myotis)

Listing Status: Global Rank – G4G5, State Rank – S3, IUCN - Least Concern, WBWG - High Priority

Long-legged myotis (*Myotis volans*) are listed as Least Concern on the IUCN Red List (Solari 2019), as little is known about the habits of the uncommon species (Hutchinson, 2002). These bats can be found in coniferous forests and canyons, usually at 6,000 – 10,000 feet, throughout much of western North America (Reid, 2006). They establish roosts in trees, rock crevices, fissures in stream banks, and buildings, and are only found in caves and mines at night and during hibernation (Hutchinson, 2002; Reid, 2006). Mating occurs prior hibernation, young are born late June to July, yielding one offspring on average (Solari, 2019). *M. volans* are reddish brown to nearly black in color with relatively dark ventral fur extending onto the underside of the wing to a line joining the elbow and knee (Hutchinson, 2002). Long-legged myotis have short, rounded ears and a short, brown snout (Reid, 2006), but their common name derives from their relatively long tibia and small feet (Hutchinson, 2002). Often hunting in forest openings beginning at dusk and staying active throughout the night, these bats use echolocation to feed on moths, also preying on lacewings, leafhoppers, beetles, flies, and spiders (Hutchinson, 2002).

Occurrence Potential

Present as of a survey conducted in 2007 (Appendix A: Figure 3)

Myotis yumanensis (Yuma myotis)
Listing Status: Global Rank – G5, State Rank – S4, BLM -Sensitive, BLM – Sensitive, IUCN - Least Concern, WBWG – Low/Medium Priority
Yuma myotis, *Myotis yumanensis*, are not unalike their *Myotis* counterparts; however, they are more closely associated with water than any other North American species of bat (Sims, 2000). Their variety of habitat ranges from juniper and riparian woodlands to desert regions near open water, and are surely to be found wherever there are lakes, ponds, streams, rivers etc. (Sims, 2000). Yuma myotis emerge at dusk to forage for moths and flies using echolocation, then can be found in groups of thousands roosting in caves, mines, buildings, attics, beneath bridges, and other structures (Reid, 2006; Sims, 2000). Their large maternity colonies occupy structures with high temperatures (up to 55°Celsius), bearing single young in May – July (Reid, 2006). In the Pacific Northwest, Yuma myotis have dull brown to very dark brown fur on their back, grayish-white fur on the belly, and black facial skin, ears, and membranes (Reid, 2006).
Occurrence Potential
Low potential to occur based on CDFW predicted habitat (Appendix A: Figure 29).

5.2.6 MOLLUSKS
Terrestrial mollusks are important components of forest ecosystems, yet little is known about the distribution and habitat of the species. The ecology of mollusks is even less studied and understood. In the Pacific Northwest mollusks undoubtedly play a significant role in forest and stream health being mostly detritivores contributing a functional role in making nutrients available for uptake and supporting primary production.

Freshwater mussels have a complex life cycle; where males release sperm into the water and females filter it for fertilization. Larvae or glochidia are released into the water where they attach to the gill filaments or fins of fish for dispersal. After several weeks, they release from the fish, sink to the bottom, and burrow in the substrates. Once within the substrates, freshwater mussels may move less than a few yards throughout their lifetime (70 years or more) and are dependent on fish species for dispersal and colonization. Living in dense beds and as filter feeders, freshwater mussels provide an important function to purify water filtering out suspended nutrients, solids, and contaminants.

Freshwater snails are relatively short lived (1 to 2 years) and inhabit clear, spring-fed streams or large spring pools with cold, well-oxygenated water and stable cobble-boulder substrates. High-gradient streams or streams with mobile substrates often have small and generalized snail species. Freshwater snails are mostly grazers feeding off rocks with attached diatoms, bacteria, and smaller epiphytic algae. Few species graze on periphyton and a smaller number on macrophytes. Very few species are facultative detritivores as in some *Juga*. All species are sensitive to DO and pH fluctuations or to hypoxic or anoxic conditions, and as cold-water biota, are a good indicator for water quality.

Monadenia callipeplus (downy sideband)
Listing Status: Global Rank – G1, State Rank – S1S2
This terrestrial snail is found amid live oak and is associated with old growth forests. The snail inhabits areas within forested streambanks among rocks and leaf litter at elevations up to 2,300 feet in the Scott River watershed and the Marble Mountains within Siskiyou County (Frest and Johannes, 1993).

Occurrence Potential

The downy sideband is endemic to Siskiyou County. There is no potential for occurrence on the subject property.

Monadenia churchi (Klamath or Church's sideband)
Listing Status: Global Rank – G2G3, State Rank – S2
This snail is terrestrial and found in old growth forests along the coast, dry coniferous forests, along riparian areas with deciduous trees, and in wet meadows. This species is dependent on talus slopes from limestone or lava parent material and can live up to 10 years. This species is commonly found near Shasta Lake in Shasta County but also occurs in Butte, Humboldt, Siskiyou, Tehama, and Trinity counties (BLM, 1999).
Occurrence Potential
The Klamath sideband is endemic to Trinity County, among others. This species prefers limestone outcrops and talus slopes, and lava rockslides. These habitats are absent in the project area and therefore, there is no potential for this species to occur.

Monadenia infumata ochromphalus (yellow-based sideband)
Listing Status: Global Rank – G2T1, State Rank – S1
This terrestrial snail is found in stable riparian areas in semi-dry deciduous and coniferous forests in Del Norte, Siskiyou, and Humboldt counties. The snail's habitat includes locations where dry forest litter is abundant in rocky areas. This species is more tolerant and adapted to dryer environments than other Monadenia species (Burke et al., 1999).
Occurrence Potential
The yellow-based sideband is endemic to Del Norte, Siskiyou, and Humboldt counties. There is no potential for occurrence on the subject property.

Monadenia infumata setosa (Trinity bristle snail)
Listing Status: CDFW –Threatened, Federal – Special Concern Species
The Trinity bristle snail is dependent on cool, moist riparian conditions and is found in association with big leaf maples, feeding on the fallen and decomposing leaves. This snail species can live for over ten years and shelters in rotten logs during summer heat. The Trinity bristle snail is rare and endemic to California and is found in isolated populations and fragmented locations within central Trinity County and extreme eastern Humboldt County. Populations may be found along the mainstem Trinity River, the eastern slope of the New River Gorge, the South Fork Trinity River, Hayfork Creek, and along the east slope of the South Fork Mountain along the Trinity/Humboldt County divide (Sullivan, 2021).
Occurrence Potential
The tributaries and their riparian areas on the subject property have suitable habitat but none were detected during the surveys. Moderate occurrence potential exists however, these riparian areas are distant from the current and proposed activities and will remain undisturbed**.**

Ancotrema voyanum (hooded lancetooth)
Listing Status: Global Rank – G1G2, State Rank – S1S2
This land snail commonly occurs in Trinity County but has also been found in Humboldt and Siskiyou counties. This species is known for living at intermediate elevations ranging from 550 to 3,150 feet and seemingly limited to areas with perennial subsurface dampness in late-successional forests with abundant litter and substrates containing limestone (Burke et al., 1999).
Occurrence Potential
The hooded lancetooth is endemic to Northern Californian and prefers late successional riparian

conditions associated with limestone substrates within elevations ranging from 550 to 3,150 feet. These habitats are absent and there is no potential to occur on the subject property.

Helminthoglypta talmadgei (Trinity shoulderband)
Listing Status: Global Rank – G2, State Rank – S2, CDFW – None, USFWS – None
The Trinity shoulderband snail is terrestrial and has a patchy distribution in the Klamath Mountains of California. Most occurrences are along the Trinity River from Junction City to the Klamath River. This snail is mostly found on south-facing slopes associated with rock talus, woody debris, and fungus in environments that provide partial shading and proximity to streams to prevent evaporation loss. Also found less frequently on north-facing slopes, where proximity to streams is less important and shelter can be found in decaying woody debris amongst rock talus (Burke et al., 1999).
Occurrence Potential
The Trinity shoulder band is endemic to Trinity County and prefers rock talus slopes with woody debris for fungi foraging and shelter from dehydration. These habitats are absent and there is no potential to occur on the subject property.

Pristinicola hemphilli (pristine pyrg)
Listing Status: Global Rank – G3, State Rank – S1
This aquatic snail species is semelparous (breeds once, then dies) with a 1- to 2- year life span. The pristine pyrg is gilled and completely aquatic feeding upon algae, bacteria, yeast, and diatoms off rocks and woody debris; and has also been known to eat aquatic plants. This species is scattered throughout the Columbia and Snake River basins and prefers cold springs and seeps in pristine condition (Frest and Johannes, 1999).
Occurrence Potential
The pristine pyrg requires perennial lotic waters and is commonly found in the Columbia and Snake River watersheds, but also occurs in the Rouge, Umpqua, and Smith River basins in southern Oregon and Del Norte County. There is no potential for occurrence on the subject property.

Lanx alta (highcap lanx)
Listing Status: Global Rank – G2G2, State Rank – S1S2
The highcap lanx is relatively short lived semelparous snail living 1 to 2 years. They are rasper-grazers and feeding on algae and diatoms off rocks and has a low tolerance for hypoxia and anoxia. In California, this species is found in the Klamath River and its large tributaries, on the upper surfaces of bedrock and large boulders with fast flowing water. Habitats are limited to cold, fast flowing water, especially where temperature is influenced by springs and subsurface seeps (Frest and Johannes, 1996).
Occurrence Potential
The highcap lanx currently is only known to persist in the Klamath River and its large tributaries in Oregon and California and requires highly oxygenated, cold, perennial flowing water. These habitats are absent and there is no potential to occur on the subject property.

Margaritifera falcata (western pearlshell)
Listing Status: Global Rank – G4G5, State Rank – S1S2
The western pearlshell range extends from Alaska, south through California, and east to Nevada, Wyoming, Utah, and Montana; but is reportedly most abundant in Oregon, Washington, British Columbia, and Idaho. This aquatic species inhabits cold creeks and rivers with resident and anadromous Salmonid spp. to host larvae dispersal; hermaphroditism has been documented in this mussel species. The Western pearlshell can be found in low velocity areas with cobbles and boulders

where scour and dislodgement is less likely during high flow events. This mussel species has an average life span of 60 to 70 years. Due to its sedentary lifestyle, this species is sensitive to environmental change and because of its long life span, is an indicator of water quality (Washington Department of Fish and Wildlife, 2015).

Occurrence Potential

The Western pearlshell requires cool perennial lotic waters and a host salmonid for transport and distribution. The streams on the subject property can run intermittent or dry up in the summer and do not support fish populations. There is no potential for the Western pearlshell to occur on the property.

Juga orickensis (redwood juga)

Listing Status: Global Rank – G2, State Rank – S1S2

This aquatic snail species ranges from central California north to Washington with narrow endemic populations that are identified as clades. Juga spp. are characterized as rasper-grazers and feeding on algae and detritus on rocks. As obligate or facultative detritivores, they occur in highly oxygenated cold water on or in gravel-boulder substrates. The estimated life span is 5 to 7 years reaching maturity in about 3 years (Frest and Johannes, 1993).

Occurrence Potential

The redwood juga are found in clear, permanent springs, creeks, and rivers. The Klamath-Trinity River system to include the South Fork Trinity River support a clade of this species. The subject property includes the habitat for this species clade and there is moderate potential to occur.

Gonidea angulata (western ridged mussel)

Listing Status: Global Rank – G3, State Rank – S1S2

The western ridged mussel can be an important indicator of water quality due to its long life span of 20 to 30 years. This mussel species inhabits cold, clear, lotic waters with slow water areas that are protected from scouring winter flows. The fish host species in northern California are, Hardhead (*Mylopharodon conocephalus*), Pit Sculpin (*Cottus pitensis*), and Tule Perch (*Hysterocarpus traski*). The fish host is unknown in Washington (Washington Department of Fish and Wildlife, 2015)

Occurrence Potential

The western ridged mussel is found in fast flowing perennial water over stable substrates and in association with fish species that are not found in the South Fork Trinity River. These habitats and fish species are absent and there is no potential to occur on the subject property.

5.2.7 REPTILES

Emys marmorata (western pond turtle)

Listing Status: Global Rank – G3G4, State Rank – S3, CDFW – SSC- Species of Special Concern,

Within California and north of San Francisco, the northern western pond turtle range extends from the Pacific coast up to 6,696 feet (Stebbins, 2003). The western pond turtle inhabits intermittent and perennial waters of streams, rivers, lakes, ponds, reservoirs, stock ponds, marshes, irrigation ditches, and sewage treatment ponds. Suitable aquatic habitats and preference is characterized by areas with adequate emergent vegetation, refugia areas as in undercut banks, submerged vegetation, with muddy and/or rocky bottoms, that include basking areas typically logs and rocks (Holland, 1994). Sexual maturity is reach around 8 to 9 years old, mating may occur year-round but is most common in late April to early May. Females emigrating from water to upland areas to deposit eggs between May and August. Ova deposition locations are along the sandy banks near water, or in sunny spots within fields rarely more than a few hundred feet from water. Hatchlings either emerge in late summer or overwinter in the nest, following adult overwintering patterns, and emerge in the spring moving into aquatic

habitats (Ernst et al., 2009). Prolonged torpor or aestivation during hot and cold periods to conserve energy is important throughout the turtles long-life of 40 years or more. Access to water is essential for the survival of this opportunistic feeder as they cannot swallow air and are only able to feed underwater.

Occurrence Potential

The western pond turtle requires perennial ponds or rivers with logs, islands, or rocks for basking areas. Western pond turtle populations reside within the South Fork Trinity River and the subject property does have a lined pond that is drained annually. The habitat needed for the western pond turtle is absent on the subject property and there is no potential for occurrence.

6.0 RESULTS AND RECOMMENDATIONS

No rare plants were identified within the project area (Appendix A, Tables 1 and 2). Because there is low to moderate occurrence potential for many bird species, the western bumblebee, and some mammals, as well as a documented presence of the long-legged myotis the following mitigation measures as outlined within the "*Volume 2 Revised Draft Environmental Impact Report for the Trinity County Cannabis Program SCH Number: 201822049*" prepared by Ascent Environmental Inc. in November 2020 are to be followed.

- Tree removal shall only occur during the nesting raptors' non-breeding season (September 1 – Jan 31), unless cleared by a qualified biologist.
- Prior to removal of any trees, or ground disturbing activities between February 1 and August 31, a qualified biologist shall conduct nesting raptor, Sanoma vole, and bat surveys.
- Project-generated sound must not exceed ambient nesting conditions by 20-25 decibels
- Project-generated sound when added to existing ambient conditions, must not exceed 90 decibels.
- To minimize potential for loss of or disturbance to fisher and Sanoma tree vole habitat, removal of old growth habitat shall be prohibited.
- In order to avoid disturbance to the Sonoma tree vole, all trees over ten inches diameter at breast height slated for removal shall be surveyed for vole nests by a qualified biologist prior to falling. If a vole nest is discovered, the Permittee shall consult with CDFW immediately.
- To avoid disturbance to any bat species, general recommendations include leaving all caves, abandoned mines, stable wooden bridges, and vacant buildings undisturbed for potential roost sites. A qualified biologist should survey the area for presence of bat maternity or hibernation roosts prior to structure removal. Alternatively, trees and structures could be removed from September 1st through October 31st, after the maternity roost season but before winter hibernation.
- Avoid the use of insecticides and herbicides as to not negatively effect the health of native bees within the property
-

In general, to reduce any potential for invasive species spread after ground disturbing activities, it is recommended that when the landowner purchases soil or straw in the future they are to make sure all soil is sterilized and to only utilize rice straw for erosion control measures.

7.0 CERTIFICATION AND LIMITATIONS

This report reflects PWA's professional opinions derived in accordance with current standards of professional practice and are valid as of the submittal date. No other warranty, expressed or implied, is made. PWA is not responsible for changes in the conditions of the property with the passage of time,

whether due to natural processes or to the works of man or changing conditions on adjacent areas. Finally, PWA is not responsible for changes in applicable or appropriate standards beyond our control, such as those arising from changes in legislation or the broadening of knowledge, which may invalidate any of our findings.

Georgia Hamer, Ecologist

Margo Moorhouse, Fisheries Biologist/Aquatic Ecologist

8.0 REFERENCES

Anderson, S. K. (2002). *Lasiurus cinereus (hoary bat)*. Animal Diversity Web. Retrieved October 18, 2021, from https://animaldiversity.org/accounts/Lasiurus_cinereus/.

Arroyo-Cabrales, J. and Alvarez-Castaneda, S.T. (2017). *Myotis evotis. The IUCN Red List of Threatened Species 2017.* Retrieved from http://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T14157A22059133.en.

Baldwin, B.C., Goldman, D.H., Keil, D. J., Patterson, R., and Roasatti, T.J. Eds. (2012). The Jepson Manual, Vascular Plants of California, Second Edition. University of California Press. Berkeley, CA.

Benson, R.L., Turo, S., and. McCovey Jr., B.W. (2007). Migration and Movement Patterns of Green Sturgeon (*Acipenser medirostris*) in the Klamath and Trinity Rivers, California, USA. Environ Biol Fish *79*, 269-27.

Bentley, J. (2017). *Lasionycteris noctivagans.* Animal Diversity Web. Retrieved October 18, 2021, from https://animaldiversity.org/accounts/Lasionycteris_noctivagans/.

Blois, J. and NatureServe (Clausen, M.K., Hammerson, G., and Cannings, S.). (2008). *Arborimus pomo. The IUCN Red List of Threatened Species 2008*: e.T2018A9174950. [Assessed 2020 September 22]. https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T2018A9174950.en.

Brylski, P. and Harris, J. (1999). Life history account for Sonoma Red Tree Vole. California Wildlife Habitat Relationships System, California Department of Fish and Wildlife, California Interagency Wildlife Task Group. 2 p.

Bureau of Land Management (BLM). (1999). Contributors: Kelley, R. S.(BLM), Dowlan, S. (BLM), Duncan, N. (BLM), and Burke, T. (USFS). Field Guide to Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan. Bureau of Land Management, Oregon State Office. 126 pp.

Burke, T.E., Applegarth, J.S., and Weasma, T.R. (1999). Management recommendations for survey and manage terrestrial mollusks. v. 2.0. Report submitted to USDI Bureau of Land Management, Salem, Oregon, October 1999. 305pp.

Calflora (2019). "What Grows Here?" *Calflora*, www.calflora.org/entry/wgh.html.

California Department of Fish and Wildlife (CDFW). (2019). California Natural Diversity Database (CNDDB) – Commercial version dated August 03, 2019. Retrieved from https://apps.wildlife.ca.gov/bios/

California Native Plant Society (CNPS). (2001). CNPS Botanical Survey Guidelines. Sacramento, California. Retrieved December 2019 from https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf

California Native Plant Society (CNPS). (2021). A Manual of California Vegetation, Online Edition. http://www.cnps.org/cnps/vegetation/; searched on [1, October, 2021]. California Native Plant Society, Sacramento, CA.

Cornell University. (2019). *Cooper*'s Hawk Identification. All About Birds/The Cornell Lab. Retrieved from https://www.allaboutbirds.org/guide/Coopers_Hawk/id.

Cornell University. (2019). Northern *Gos*hawk Identification. All About Birds/The Cornell Lab. Retrieved from https://www.allaboutbirds.org/guide/Northern_Goshawk/id.

Ernst, C.H., Barbour, R. W., and Lovich, J. E. (1994). (2nd Edition published 2009). *Turtles of the United States and Canada*. Smithsonian Institution.

Frest, T.J. and Johannes, E.J. (1993). Mollusk Species of Special Concern within the Range of the Northern Spotted Owl. Report prepared for: Forest and Ecosystem Management Working Group, USDA Forest Service Pacific Northwest Region. 145 pp.

Frest, T. J., and Johannes, E. J. (1996). Freshwater Mollusks of the Upper Klamath Drainage, Orgeon. Deixis Consultants, Seattle, WA. 219 pp.

Frest, T.J. and Johannes, E.J. (1999). Field Guide to Survey and Manage Freshwater Mollusk Species. Unpublished report BLM/OR/WA/PL-99/045+1792 to the Bureau of Land Management, Oregon State Office, September 1999. 128 pp.

Givens, D. R. (2014). An Annotated List of Caddisflies (Trichoptera) Collected in Lassen Volcanic National Park, California, U.S.A. during 2011 – 2013. Entomological News Vol. 124(3): p. 153-175. The American Entomological Society. Philadelphia, PA.

Goodman, D.H. and S.B. Reid. 2015. Regional Implementation Plan for Measures to Conserve Pacific Lamprey (*Entosphenus tridentatus*), California - North Coast Regional Management Unit. U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata Fisheries Technical Report Number TR 2015-21, Arcata, California.

Gruver, J. C. and Keinath, D. A. (2006). *Townsend's Big-eared Bat (Corynorhinus townsendii): A Technical Conservation Assessment*. USDA Forest Service, Rocky Mountain Region, Species Conservation Project. Retrieved from http://www.fs.fed.us/r2/projects/scp/assessments/townsendsbigearedbat.pdf.

Hamlin, R., Roberts, L., Schmidt, G., Brubaker, K., and Bosch, R. (2010). Species assessment for the Humboldt marten (Martes americana humboldtensis). U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, California. 34 + iv pp.

Holland, D.C. (1994). The western pond turtle: habitat and history. U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon. Retrieved from http://www.fwspubs.org/doi/suppl/10.3996/012016-JFWM-005/suppl_file/fwma-08-01-05_reference+s2.pdf. Accessed October 17, 2021.

Harris, J. (1990). *Fringed Myotis (Myotis thysanodes).* "California's Wildlife". Vol. I-III. California Department of Fish and Game, Sacramento, California.

Holland, D.C. (1994). The western pond turtle: habitat and history. U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon. Accessed October 17, 2018 from http://www.fwspubs.org/doi/suppl/10.3996/012016-JFWM-005/suppl_file/fwma-08-01-05_reference+s2.pdf.

Hutchinson, M. (2002). *Myotis volans*. Animal Diversity Web. Accessed October 08, 2020 at https://animaldiversity.org/accounts/Myotis_volans/.

International Taxonomic Information System (ITIS). (2021). Retrieved October, 2021 from http://www.itis.gov

Kaufman, K. (2020). *Cooper*'s Hawk (*Accipiter cooper*ii). Retrieved from https://www.audubon.org/field-guide/bird/coopers-hawk.

Miller, E.A., Singer, G.P., Peterson, M.L., Chapman, E.D., Johnson, M.E., Thomas, M.J., Battleson, R.D, Gingras, M., and Klimley, A.P. (2020). Spatio-temporal distribution of Green Sturgeon (*Acipenser medirostris*) and White Sturgeon (*A. transmontanus*) in the San Francisco Estuary and Sacramento River, California. Environ Biol Fish *103*: 577–603.

Moyle, P.B., R. Lusardi, P. Samuel, and J. Katz. 2017. State of the Salmonids: Status of California's Emblem atic Fishes 2017. Center for Watershed Sciences, University of California, Davis and California Trout, San Francisco, CA. 579pp.

Moyle, P.B. (2002). Inland Fishes of California. University of California Press, Oakland.

Nakamoto, R.J. and Kisanuki, T.T. (1995). Age and Growth of Klamath River Green Sturgeon (*Acipenser medirostris*). Unpublished Project # 93-FP-13. U.S. Fish and Wildlife Service, Coastal California Fish and Wildlife Office, Arcata, California. 27pp.

Reid, F. A. (2006). Peterson Field Guides: Mammals of North America. 4th Ed. Houghton Mifflin Company, Boston, New York.

Rhines, C. (2003). *Martes pennanti.* Animal Diversity Web. Accessed September 08, 2020. https://animaldiversity.org/accounts/Martes_pennanti/.

Sims, K. (2000). *Myotis yumanensis*, Animal Diversity Web. Accessed October 18, 2021. https://animaldiversity.org/accounts/Myotis_yumanensis/.

Solari, S. (2019). *Myotis volans*. The IUCN Red List of Threatened Species 2019:

Stebbins, Robert C. (2003). *A Field Guide to Western Reptiles and Amphibians*. 3rd Edition. Houghton Mifflin Company. 429 pp.

Sullivan, J. (2009). *Corynorhinus townsendii.* Retrieved from https://animaldiversity.org/accounts/Corynorhinus_townsendii/.

U.S. Fish and Wildlife Service. (2018). *Humboldt Marten Species Profile*. Official Web page of the U S Fish and Wildlife Service. Retrieved October 26, 2021, from https://www.fws.gov/arcata/es/mammals/HumboldtMarten/humbMarten.html.

U.S. Fish and Wildlife Service. (2020). *Data limitations, exclusions, and precautions*. Limitations, Exclusions and Precautions. National Wetlands Inventory, National Standards and Support Team. Retrieved October 1, 2021, from https://www.fws.gov/wetlands/data/Limitations.html.

U.S. Fish and Wildlife Service. (2019). IPac Official Species list. United States Department of the Interior and Arcata Fish and Wildlife. Retrieved October 2021 from https://ecos.fws.gov/ipac/

US Environmental Protection Agency (EPA). (1998). South Fork Trinity River and Hayfork Creek sediment total maximum daily loads. Region IX Water Division. San Francisco, CA. December 1998.

Vingiello, S. (2002). *Myotis thysanodes.* Animal Diversity Web. Accessed October 18, 2021, https://animaldiversity.org/accounts/Myotis_thysanodes/.

Washington Department of Fish and Wildlife. (2015). State-Wide Action Plan Update, Appendix A-5: Species of Greatest Conservation Need. 123 pp.

Weber, C. (2004). (*Myotis evotis) western long-eared myotis*. Animal Diversity Web. Accessed October 18, 2021, https://animaldiversity.org/accounts/Myotis_evotis/.

Zielinski, W.J., Slauson K.M., Carroll C.R., Kent, C.J., and Kudrna, D.G. (2001). Journal of Mammalogy, vol. 82, no. 2 (May 2001). 478-490. Published by: American Society of Mammalogists Stable URL: http://www.jstor.org/stable/1383728

Appendix A

BIOLOGICAL RESOURCE ASSESSMENT

for
5200 Lower Southfork Rd.
Trinity County
APN: 008-080-32-000

Biological Resources: Figures and Tables
October 2021

Contents :

Figures

Tables

Documents

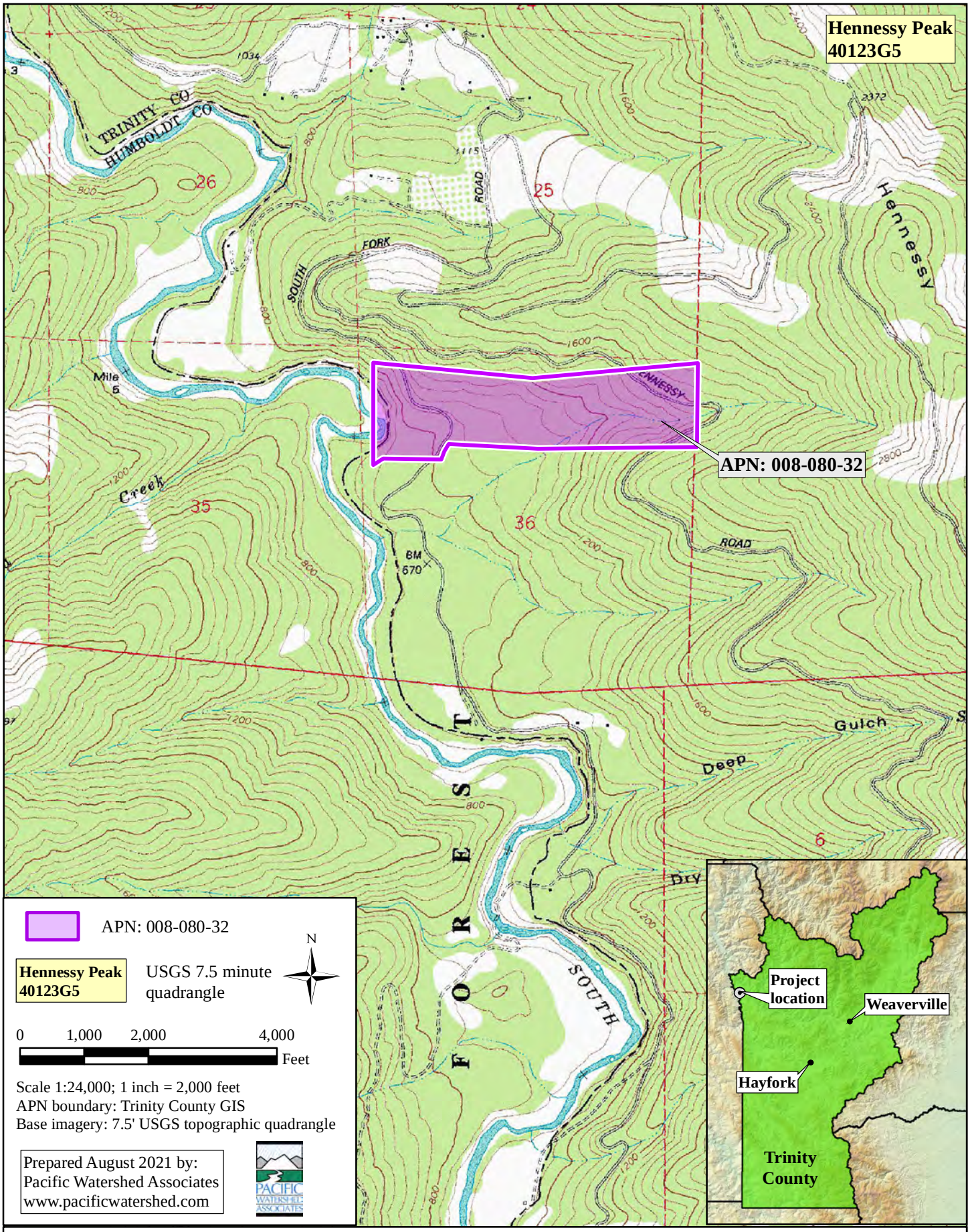


Figure 1. Biological Resources Location Map for Trinity County APN 008-080-32, 5200 Lower Southfork Rd, Salyer, CA.

P:\GIS\5082

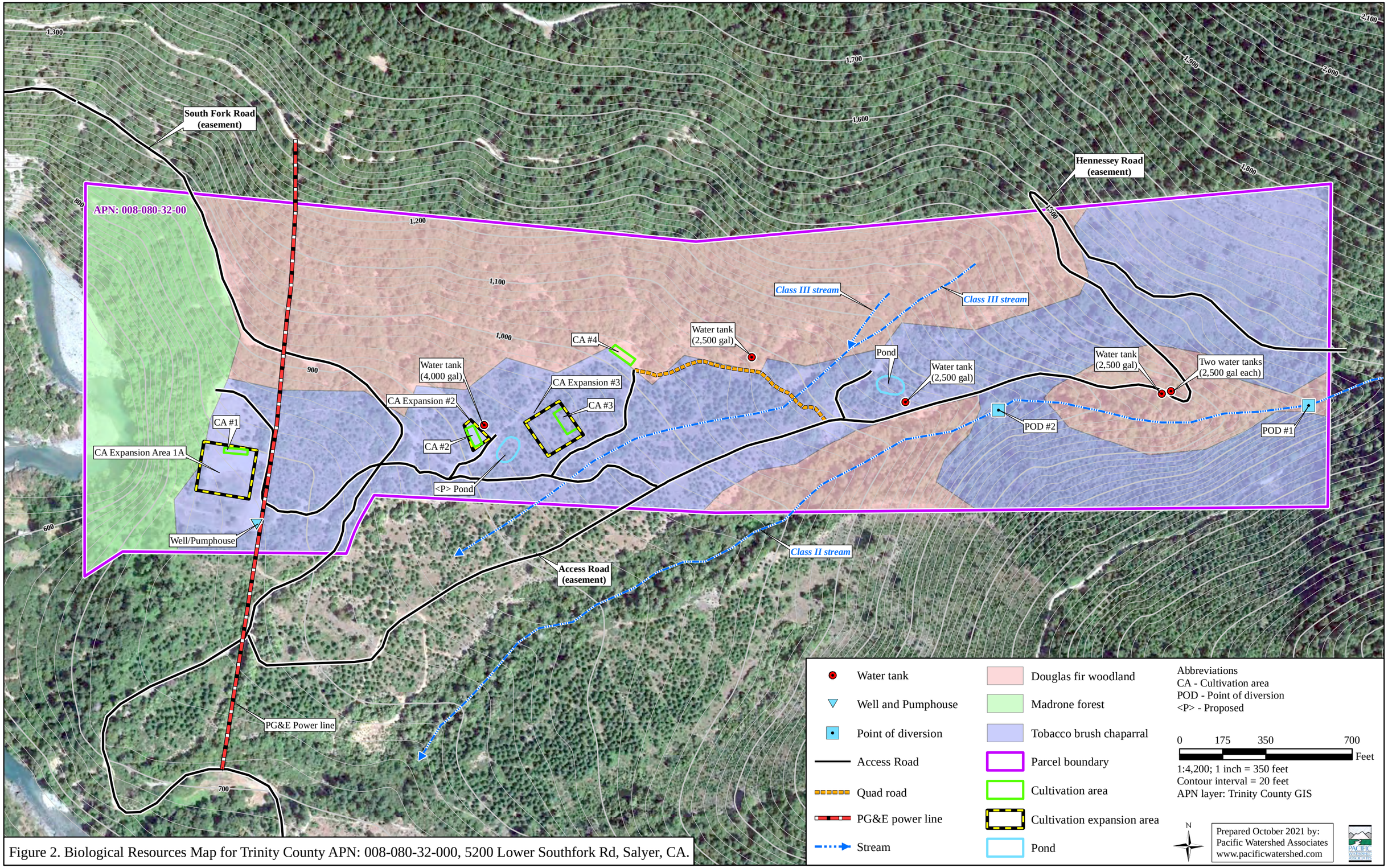


Figure 2. Biological Resources Map for Trinity County APN: 008-080-32-000, 5200 Lower Southfork Rd, Salyer, CA.

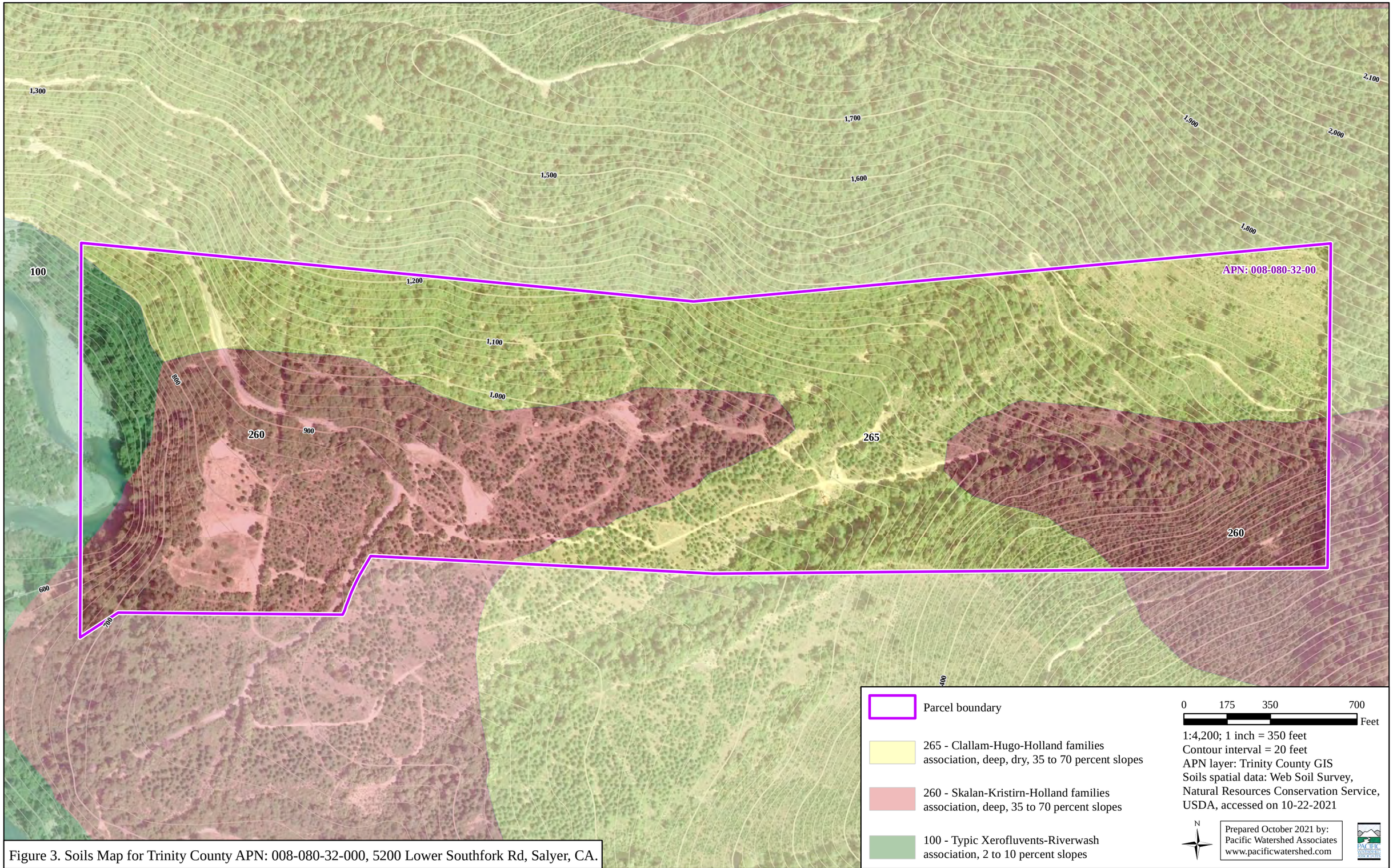


Figure 3. Soils Map for Trinity County APN: 008-080-32-000, 5200 Lower Southfork Rd, Salyer, CA.

P:\GIS\5082 Kahan 2015\5082 Kahan Soil Map.mxd

U.S. Fish and Wildlife Service

National Wetlands Inventory

Figure 4. National Wetlands Inventory, Trinity County APN: 008-080-32-000

October 19, 2021

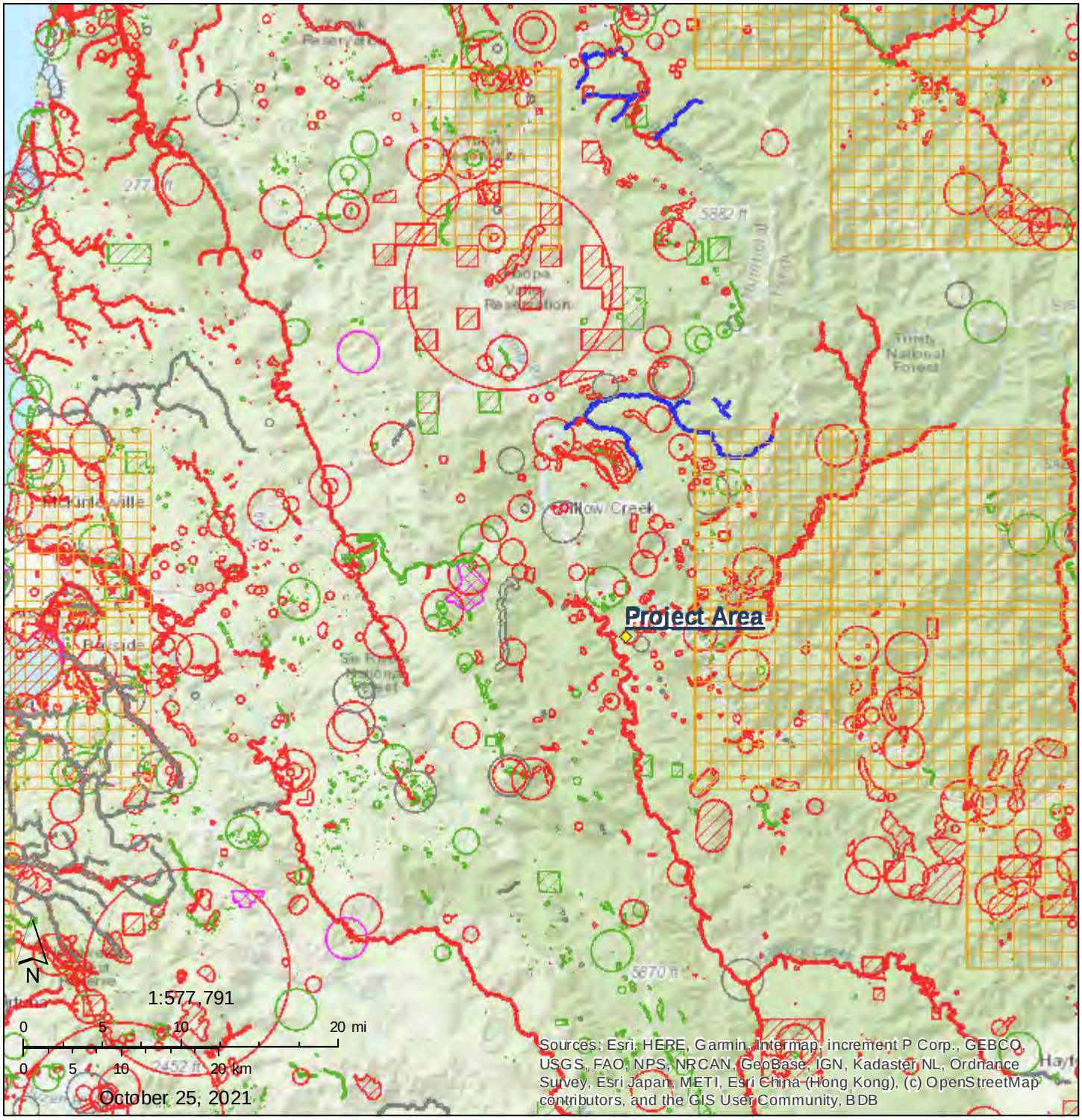
Wetlands

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

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

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Figure 5. CNDDB Elemental Occurrences

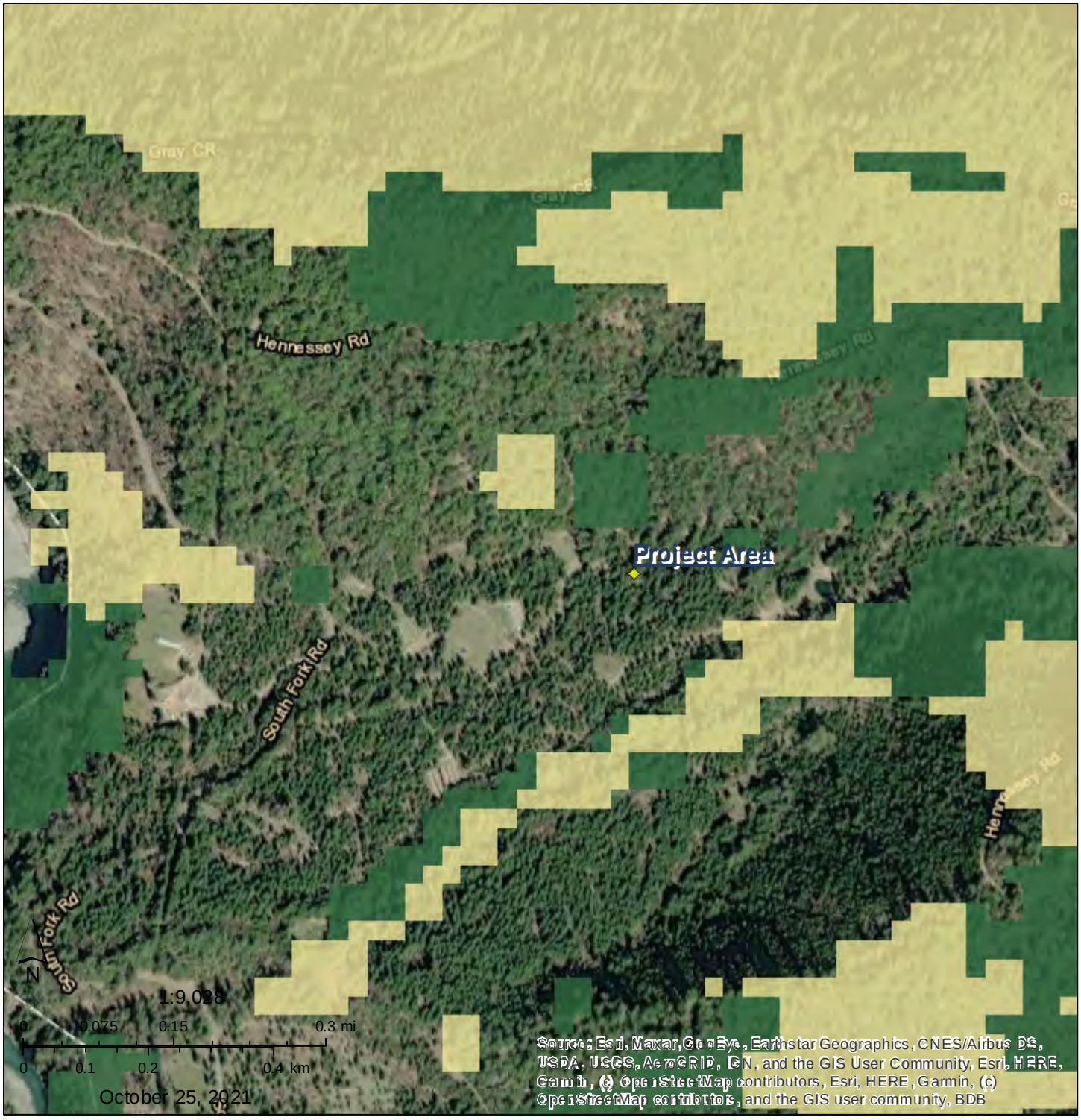


California Natural Diversity Database (CNDDB) Commercial [ds85]

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

Author: Pacific Watershed Associates
Printed from http://bios.dfg.ca.gov

Figure 6. Del Norte Salamander Potential



a010 Predicted Habitat Suitability - CWHR [ds1977]

- Low
- Medium
- High

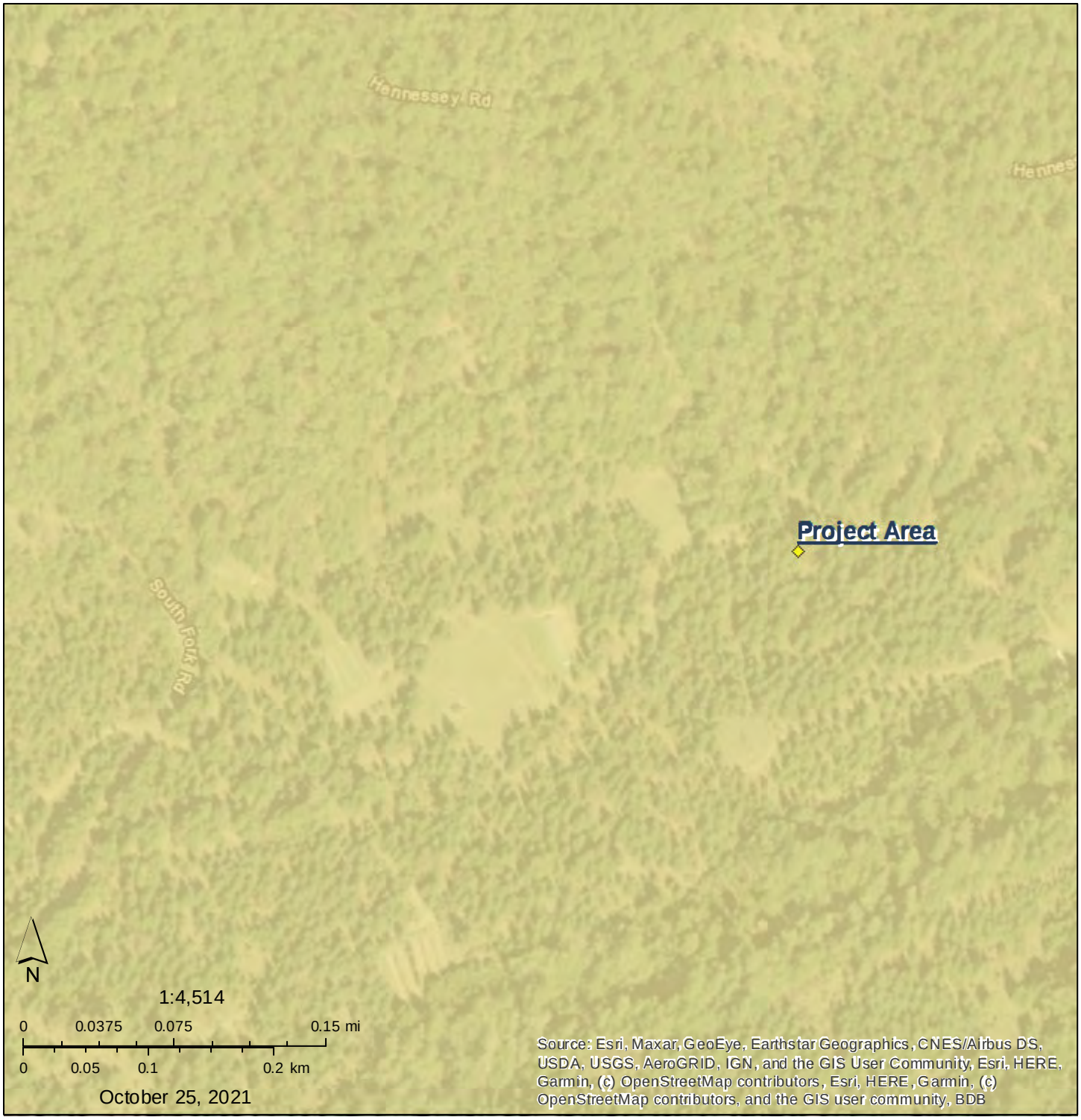
Figure 7. Northern Red Legged Frog Potential

Northern Red-legged Frog Predicted Habitat - CWHR A040 [ds2006]

- Low
- Medium
- High

Author: Pacific Watershed Associates

Figure 8. Yellow-Legged Frog Potential



Foothill Yellow-legged Frog Predicted Habitat - CWHR A043 [ds2009]

- Low
- Medium
- High

Author: Pacific Watershed Associates
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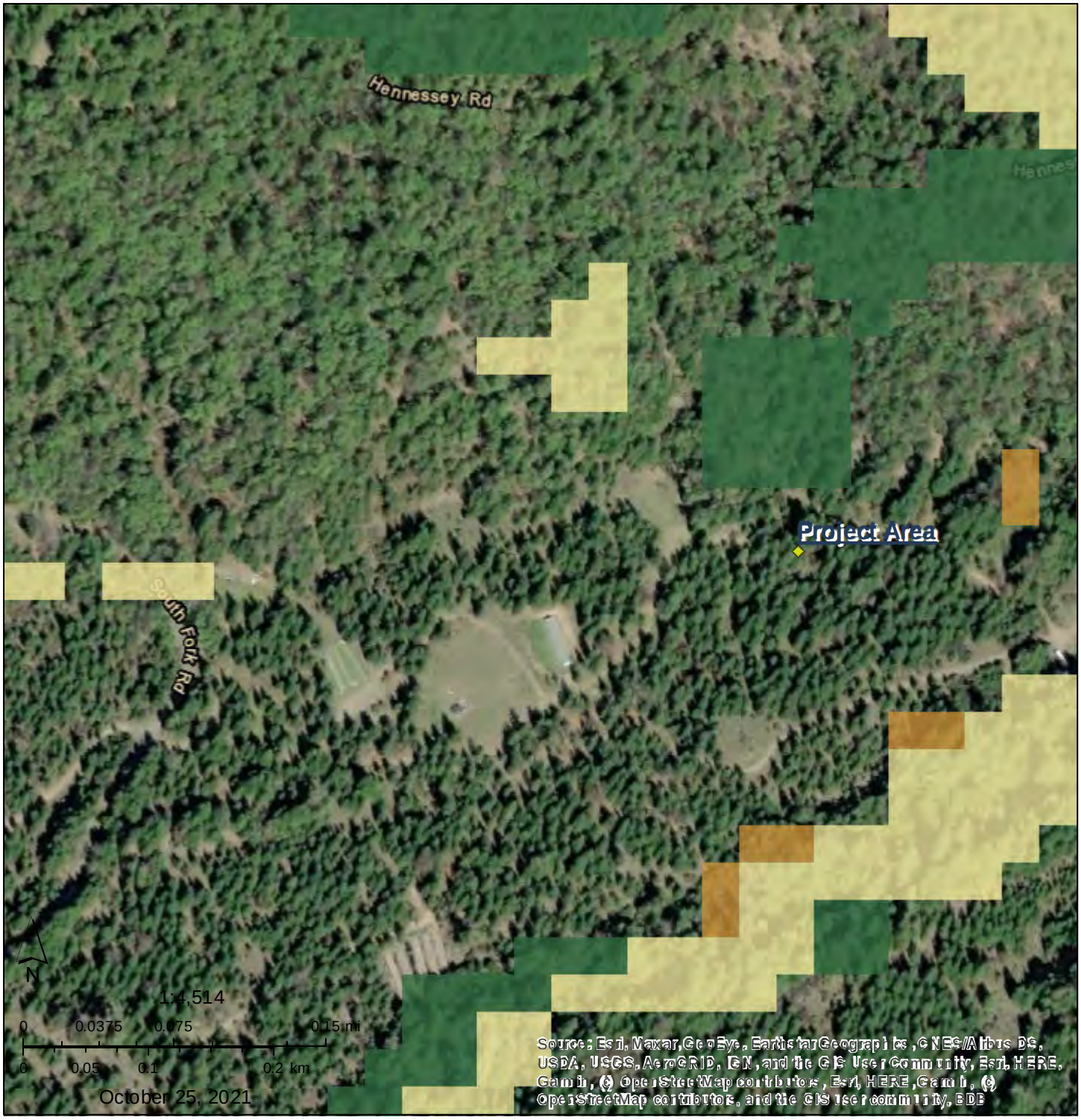
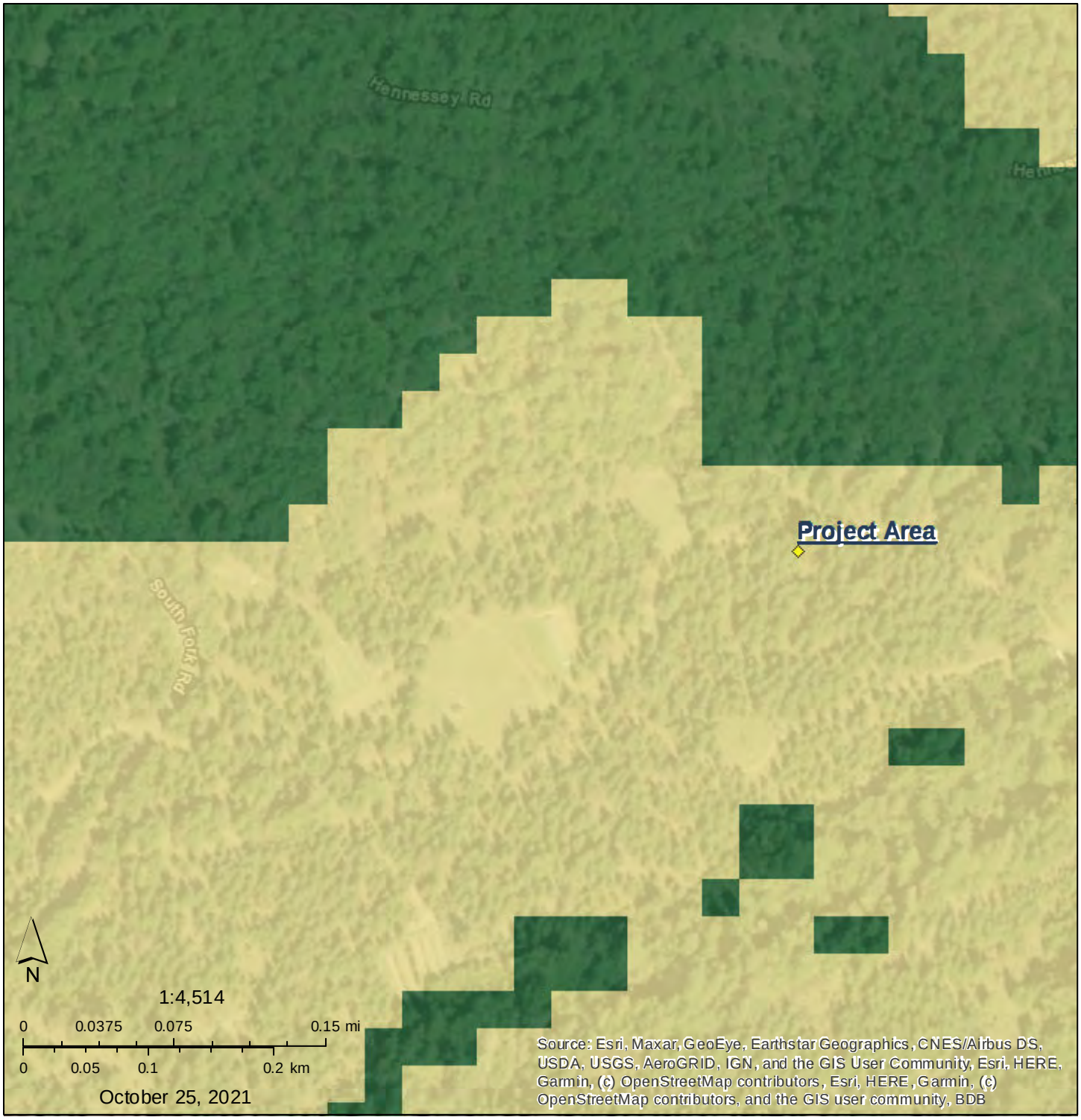
Figure 9. Southern Torrent Salamander Potential



a005 Predicted Habitat Suitability - CWHR [ds1972]

- Low
- Medium
- High

Figure 10. Cooper's Hawk Potential



Cooper's Hawk Predicted Habitat - CWHR B116 [ds2089]

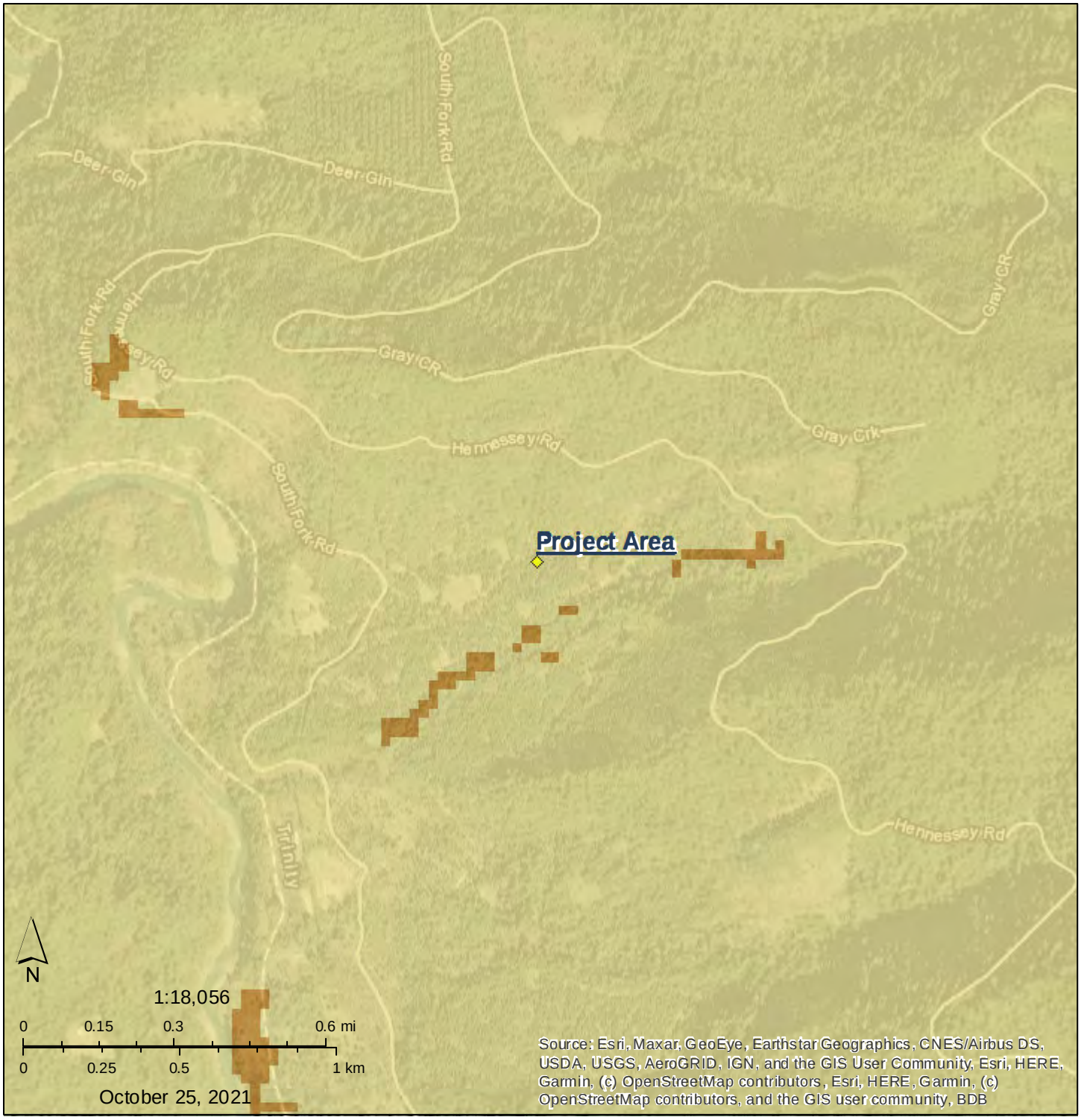
- Low
- Medium
- High

Figure 11. Northern Goshawk Potential

Northern Goshawk Predicted Habitat - CWHR B117 [ds2090]

- Low
- Medium
- High

Figure 12. Bald Eagle Potential



Bald Eagle Predicted Habitat - CWHR B113 [ds2086]

- Low
- Medium
- High

Author: Pacific Watershed Associates
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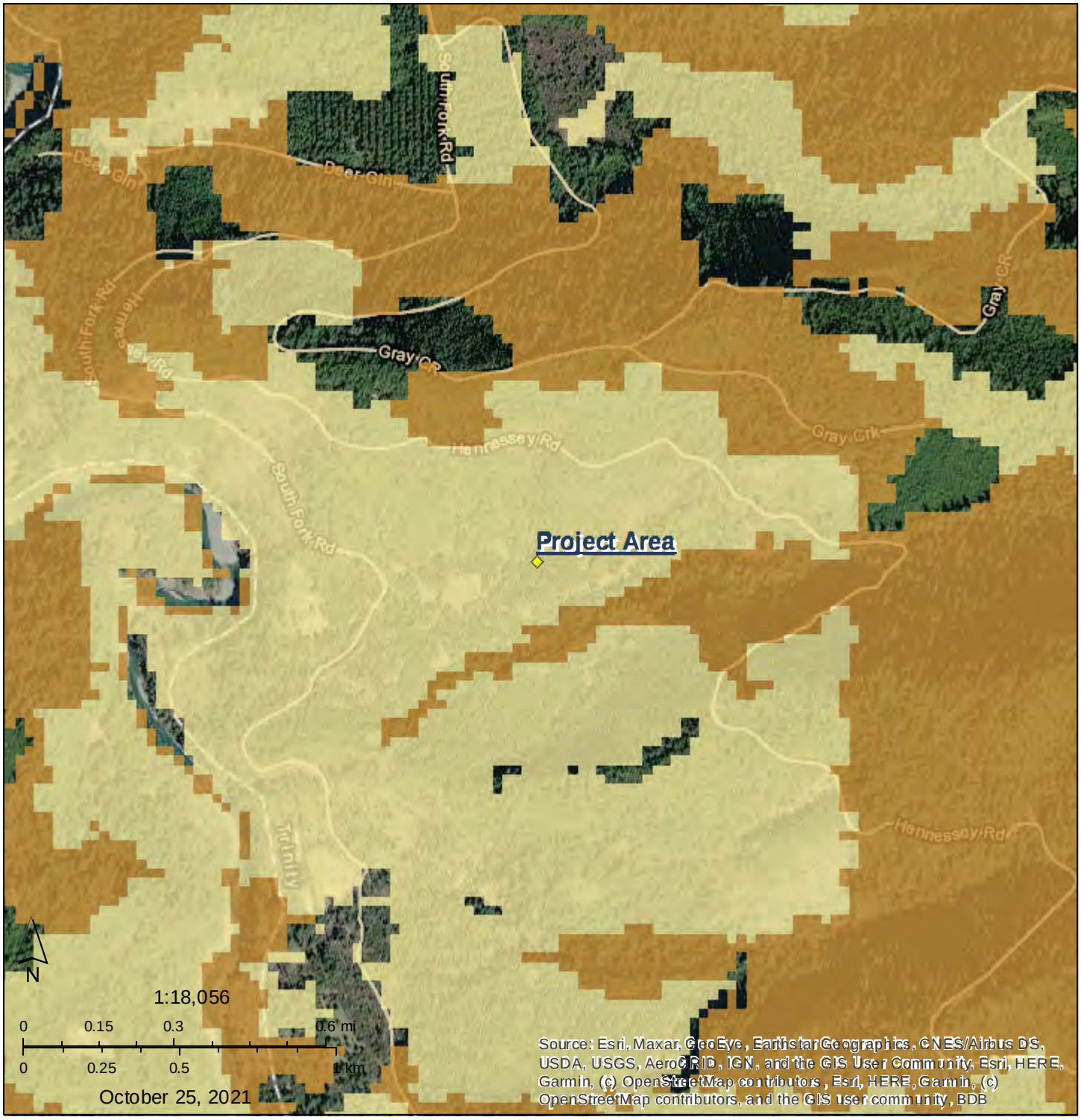
Figure 13. Great Blue Heron Potential



Great Blue Heron Predicted Habitat - CWHR B051 [ds2041]

- Low
- Medium
- High

Figure 14. Mountain Plover Potential

Mountain Plover Predicted Habitat - CWHR B159 [ds2118]

- Low
- Medium
- High

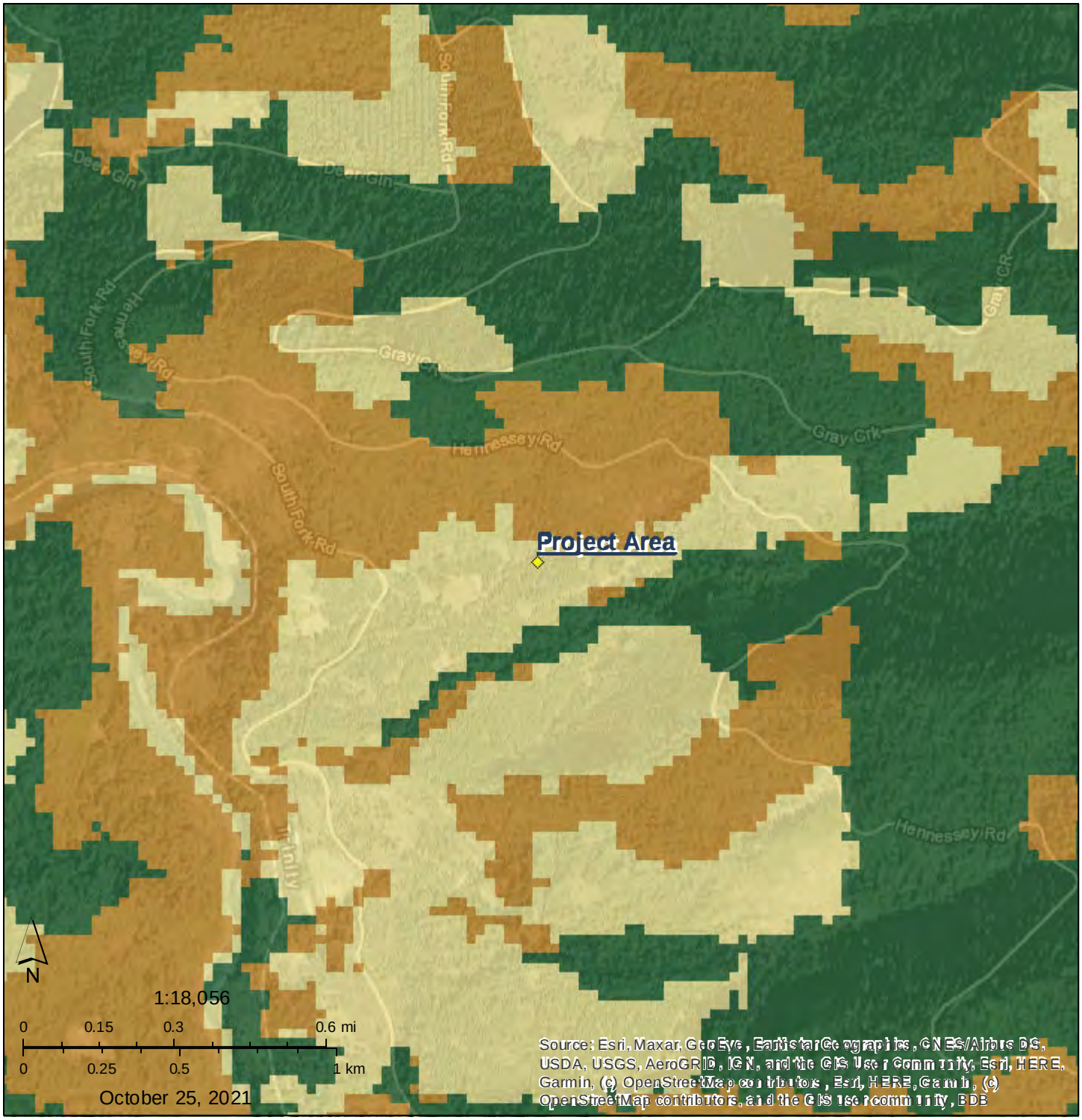
Figure 15. Yellow-Breasted Chat Potential

Yellow-Breasted Chat Predicted Habitat - CWHR B467 [ds2309]

- Low
- Medium
- High

Author: georgiah@pacificwatershed.com

Figure 16. Osprey Potential



Osprey Predicted Habitat
- CWHR B110 [ds2084]

- Low
- Medium
- High

Author: Pacific Watershed Associates
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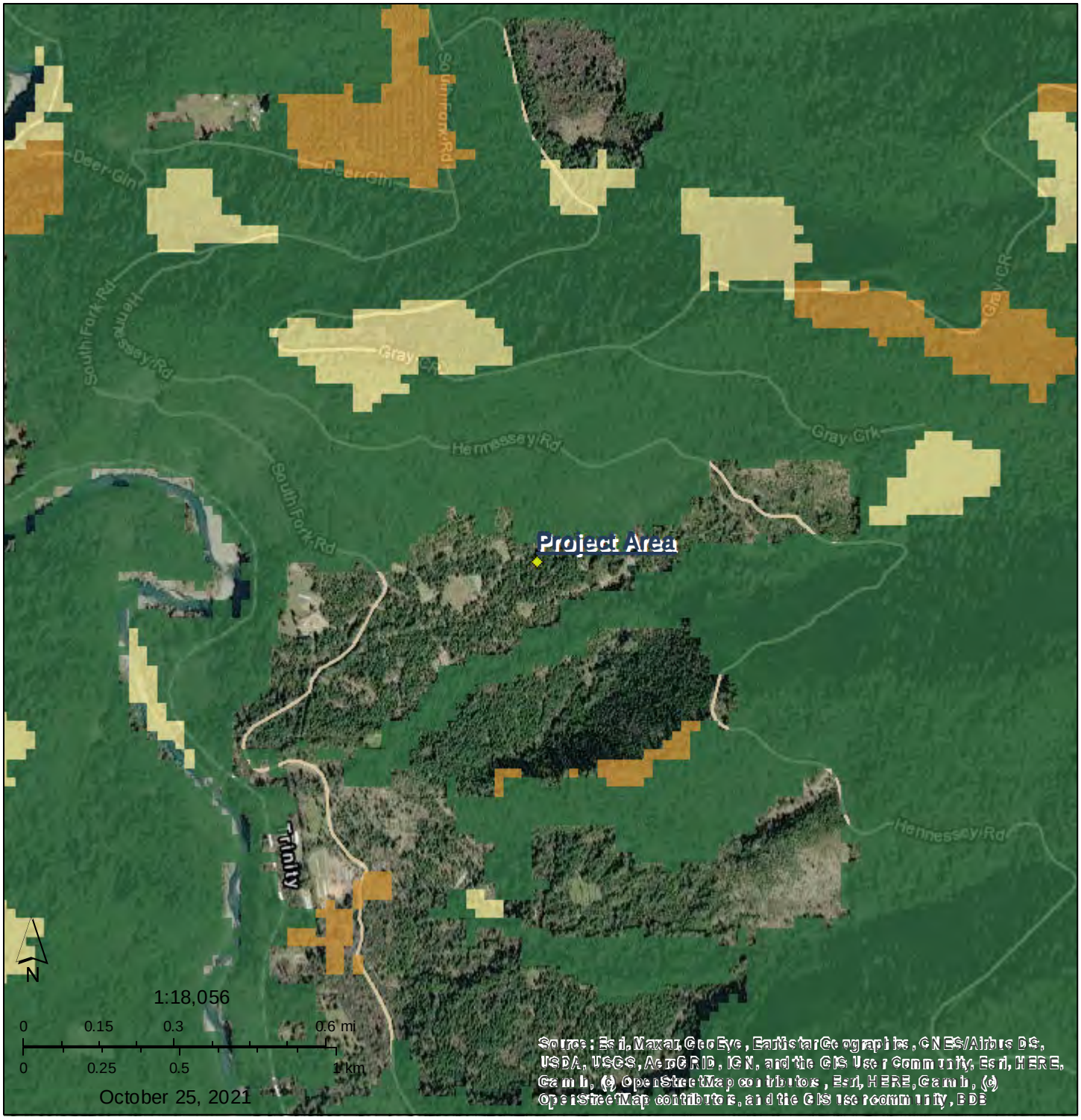
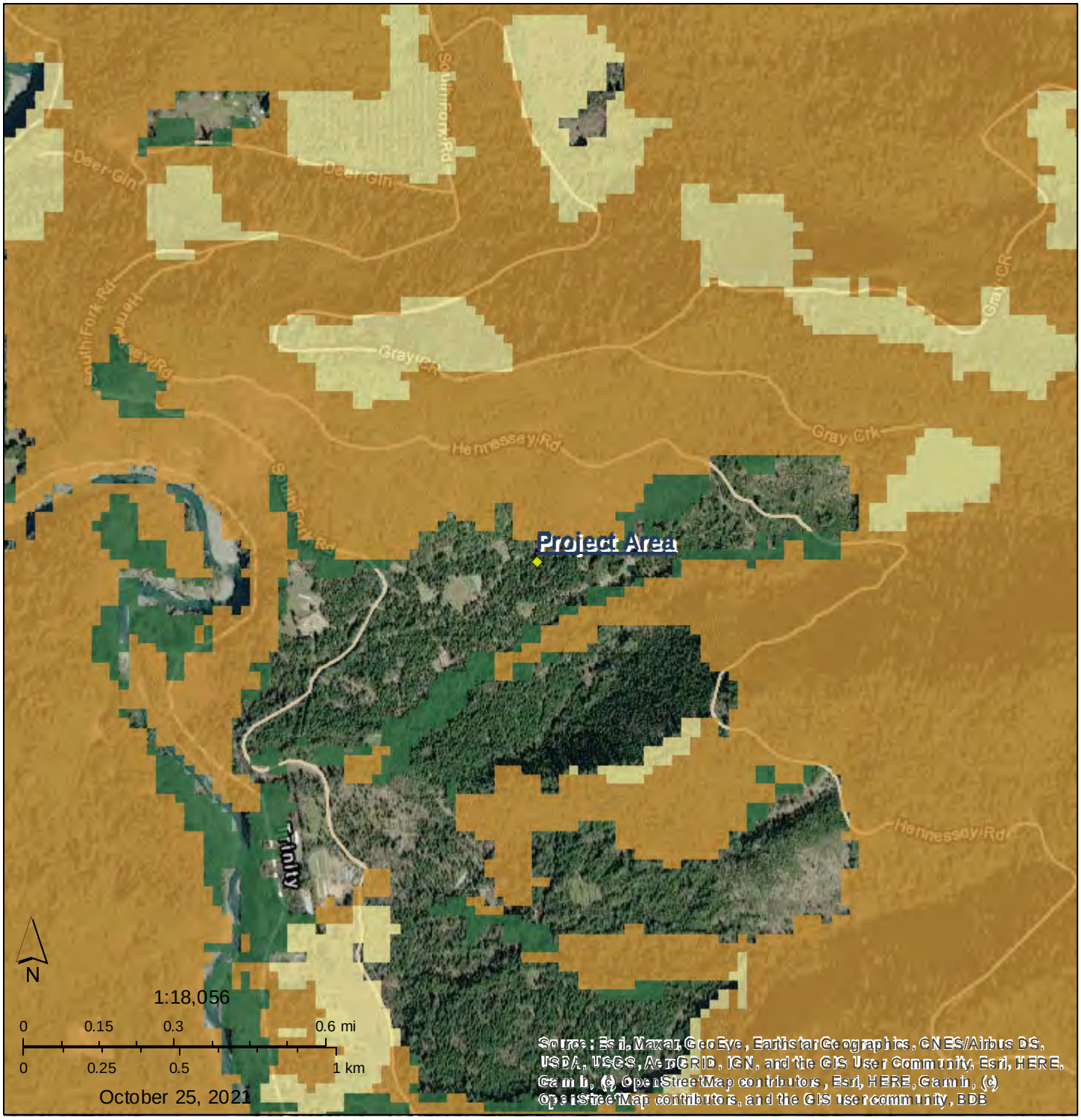
Figure 17. Ruffed Grouse Potential



Ruffed Grouse Predicted Habitat - CWHR B136 [ds2102]

- Low
- Medium
- High

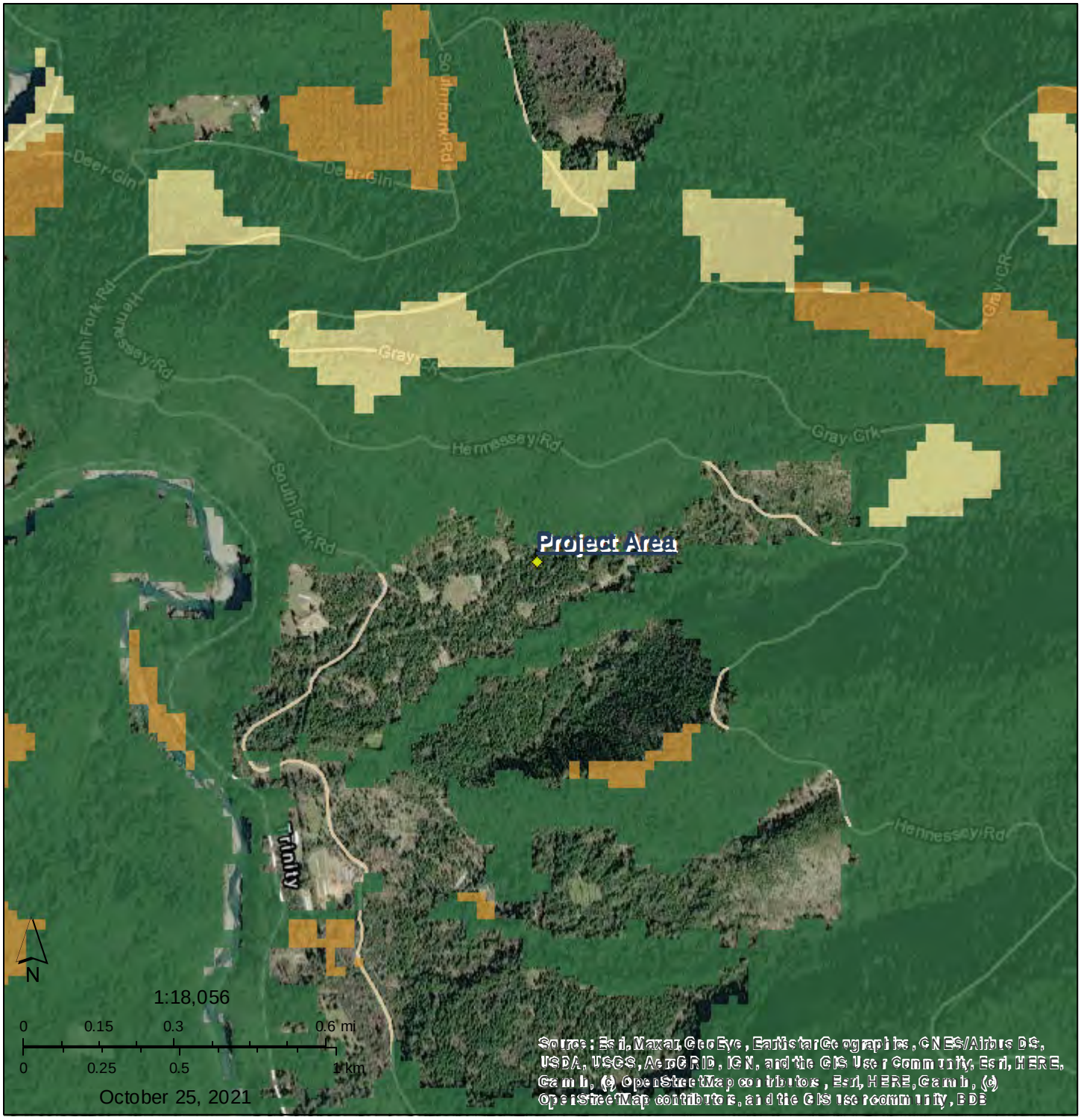
Figure 18. Red-Breasted Sapsucker Potential



Red-Breasted Sapsucker Predicted Habitat - CWHR B299 [ds2209]

- Low
- Medium
- High

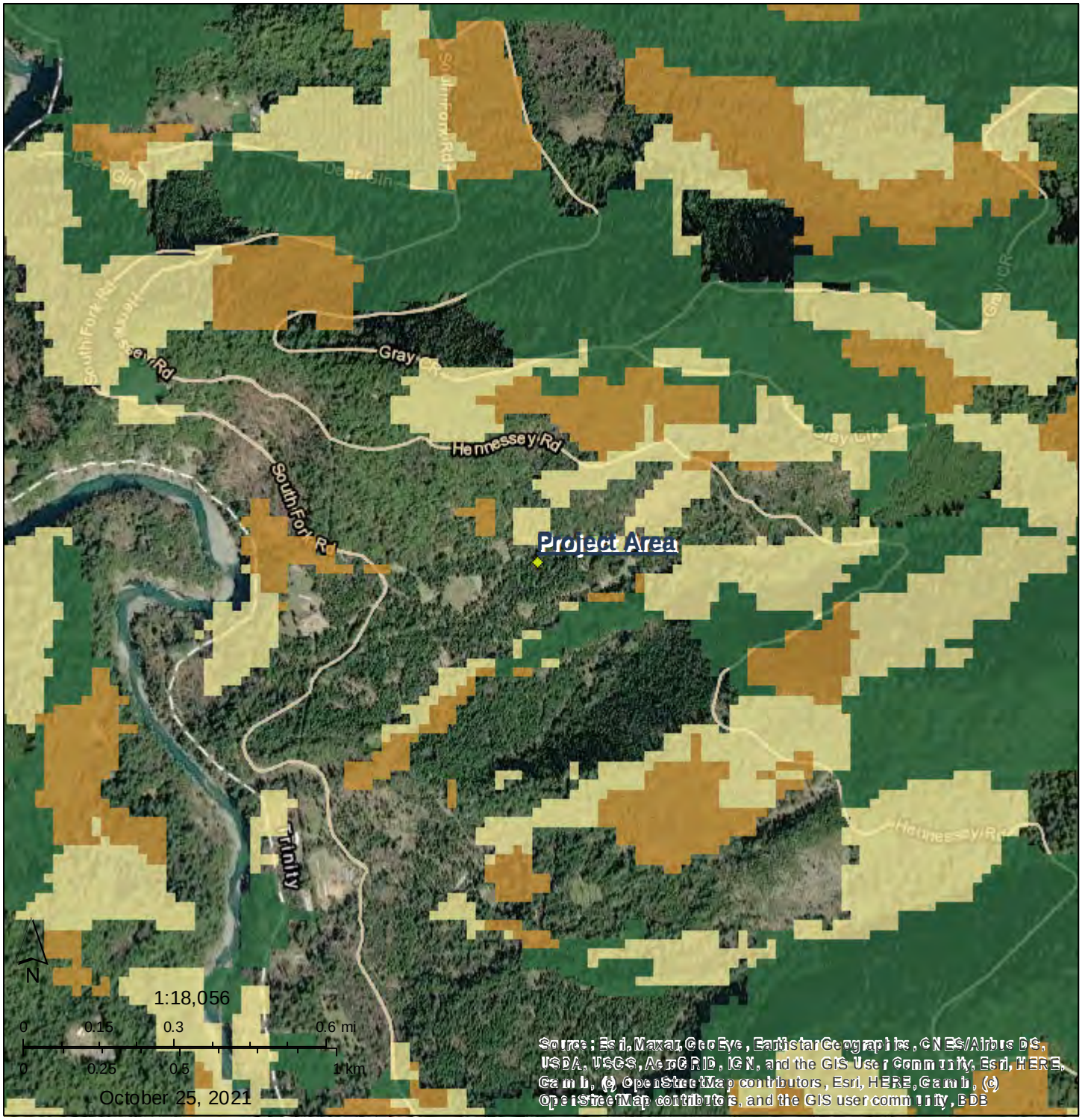
Figure 19. Flammulated Owl Potential



Flammulated Owl Predicted Habitat - CWHR B263 [ds2179]

- Low
- Medium
- High

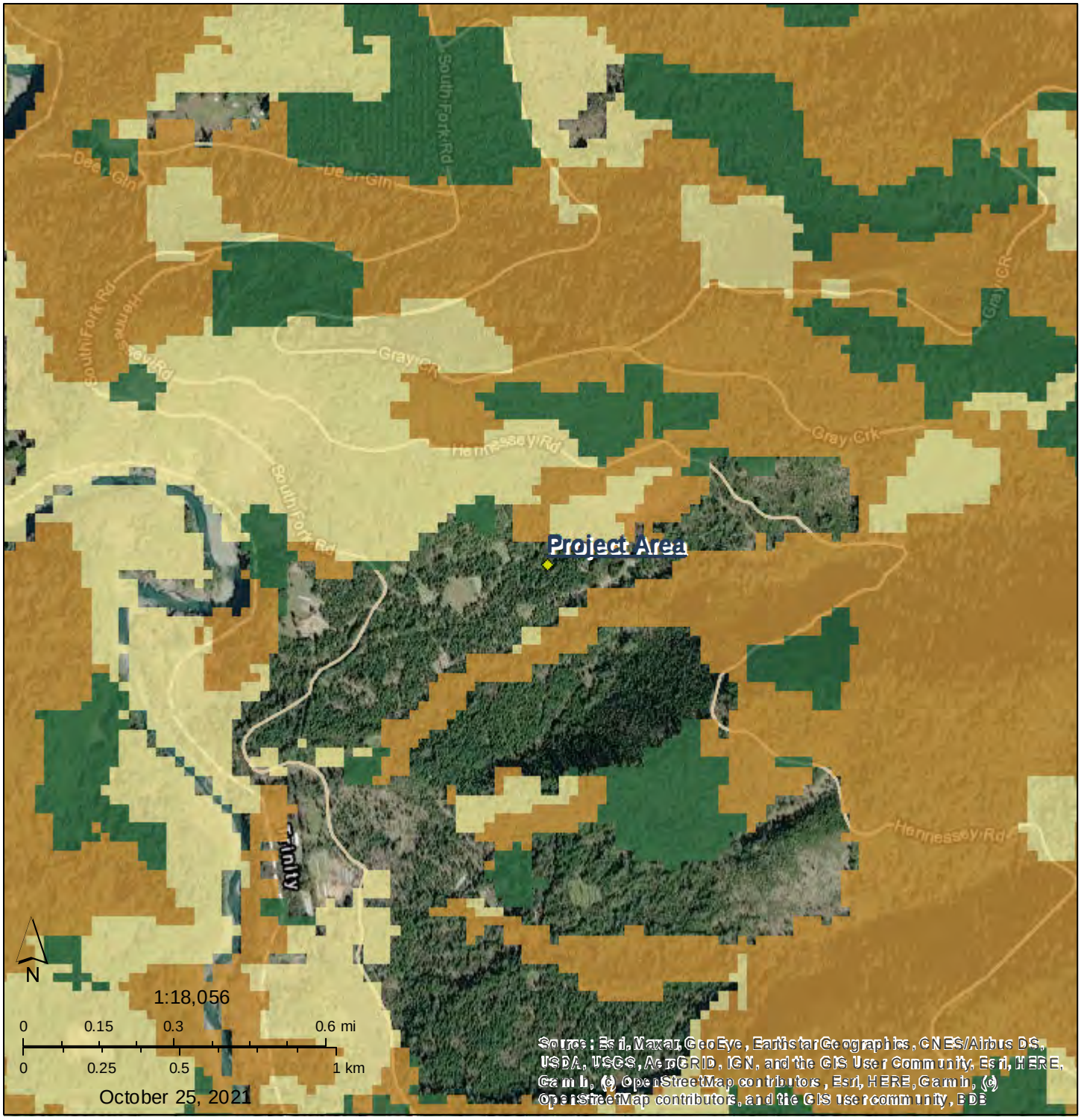
Figure 20. Sonoma Tree Vole Potential



Sonoma Tree Vole Predicted Habitat - CWHR M132 [ds2586]

- Low
- Medium
- High

Figure 21. North American Porcupine Potential



Common Porcupine Predicted Habitat - CWHR M145 [ds2596]

- Low
- Medium
- High

Author: Pacific Watershed Associates
Printed from http://bios.dfg.ca.gov

Figure 22. California Wolverine Potential

Wolverine Predicted Habitat - CWHR M159 [ds2610]

- Low
- Medium
- High

Author: Pacific Watershed Associates
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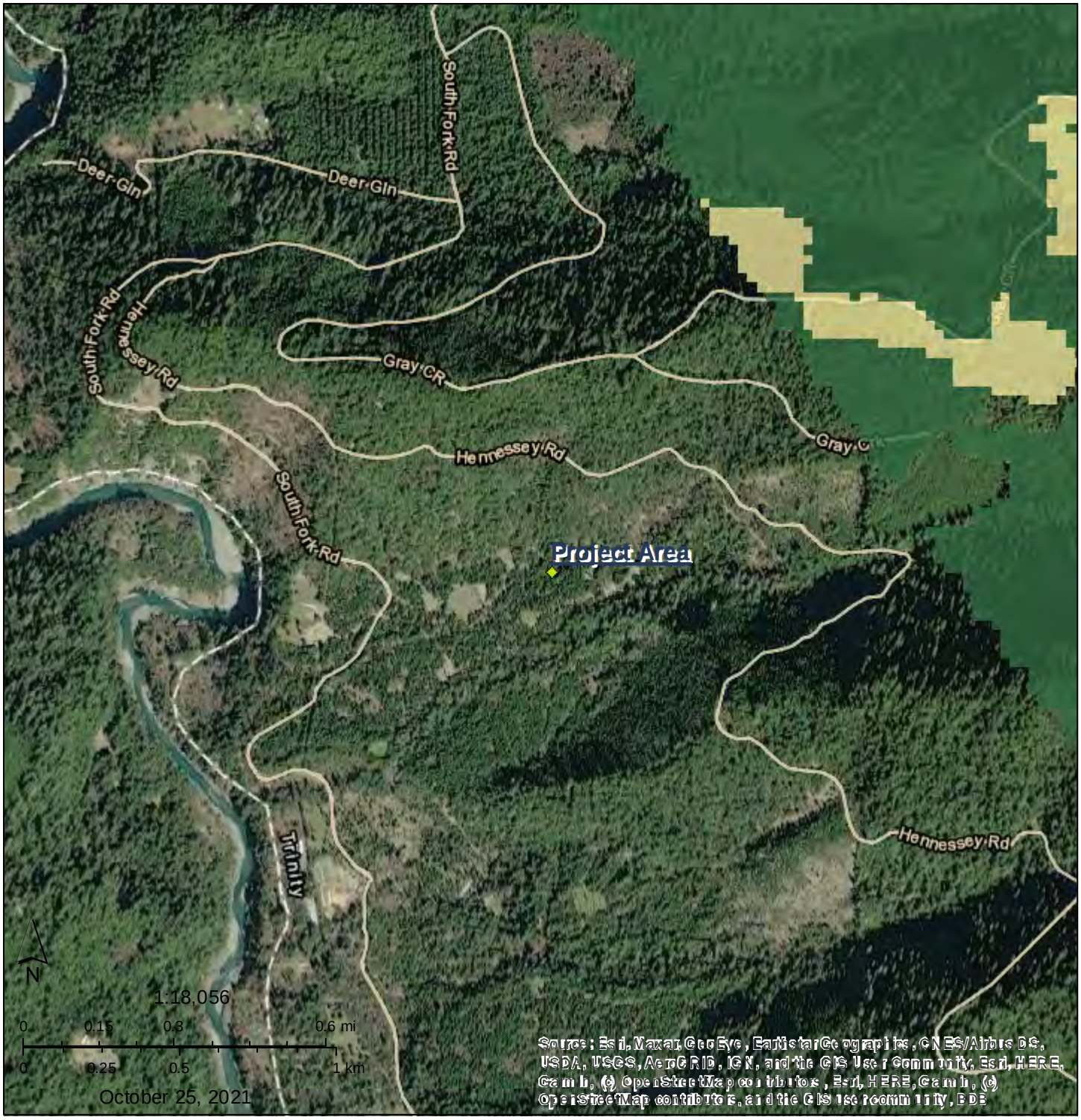
Figure 23. Humboldt Marten Potential

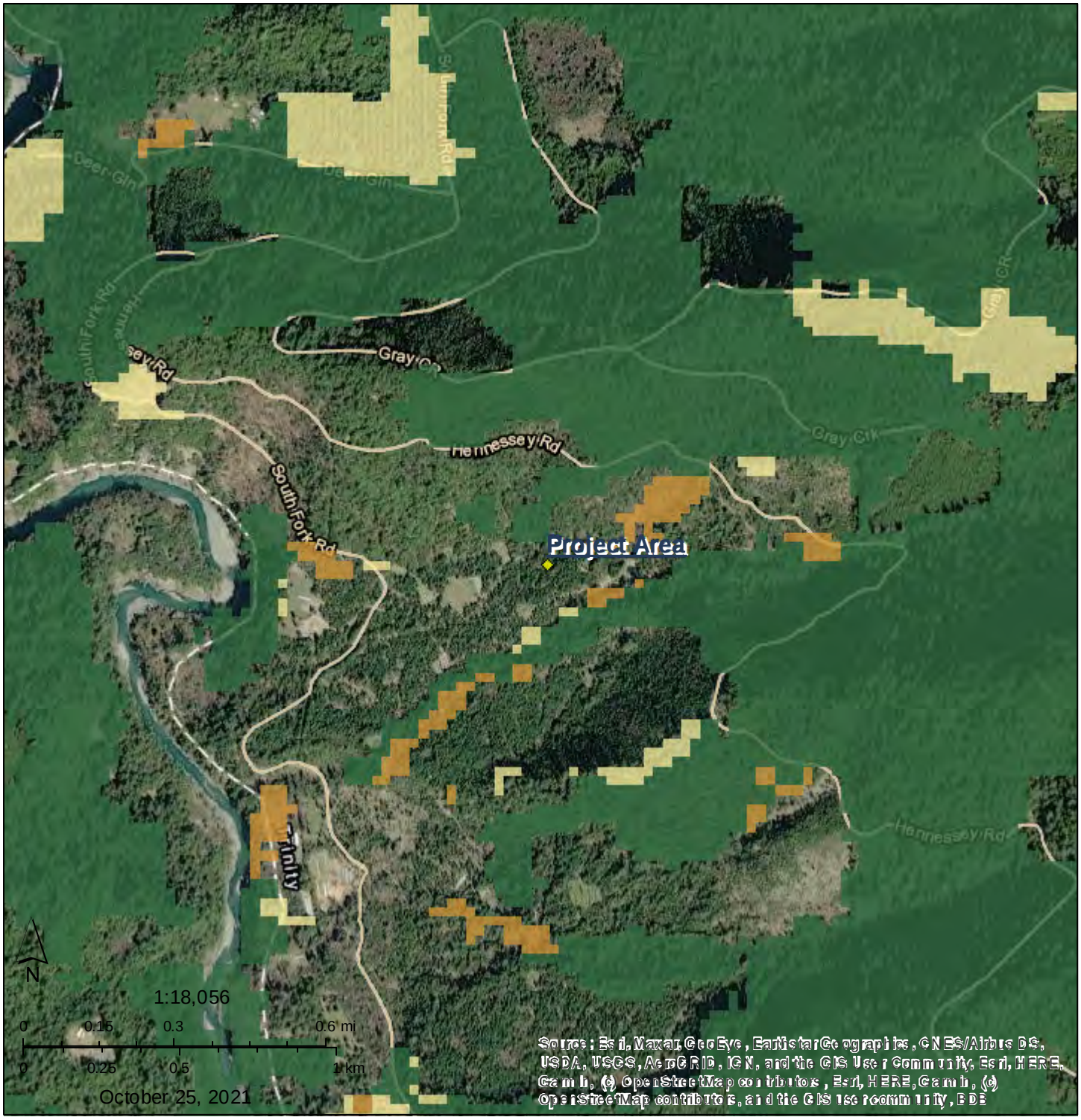


Marten Predicted Habitat
- CWHR M154 [ds2605]

- Low
- Medium
- High

Author: Pacific Watershed Associates

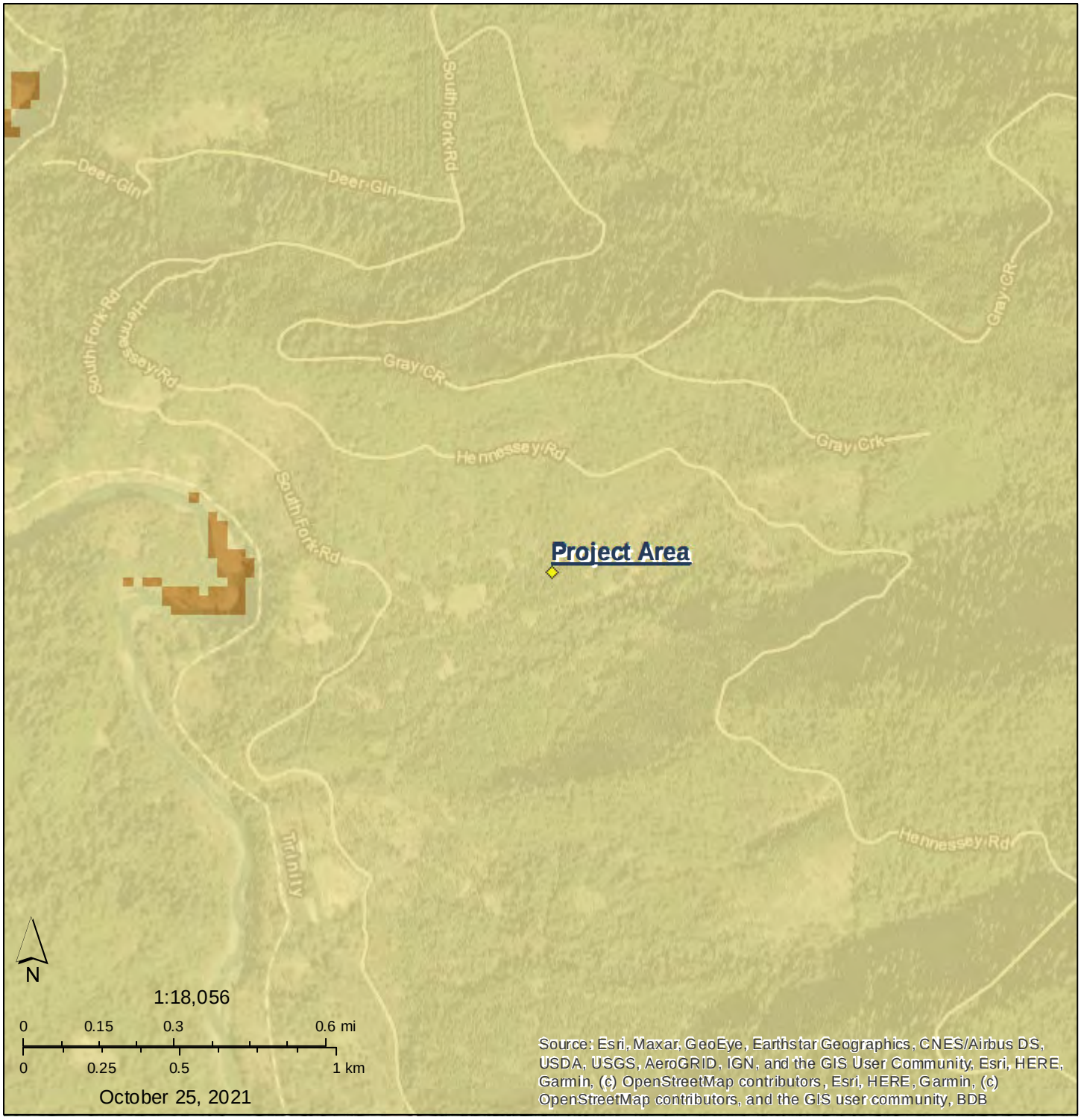
Figure 24. Fisher Potential



Fisher Predicted Habitat
- CWHR M155 [ds2606]

- Low
- Medium
- High

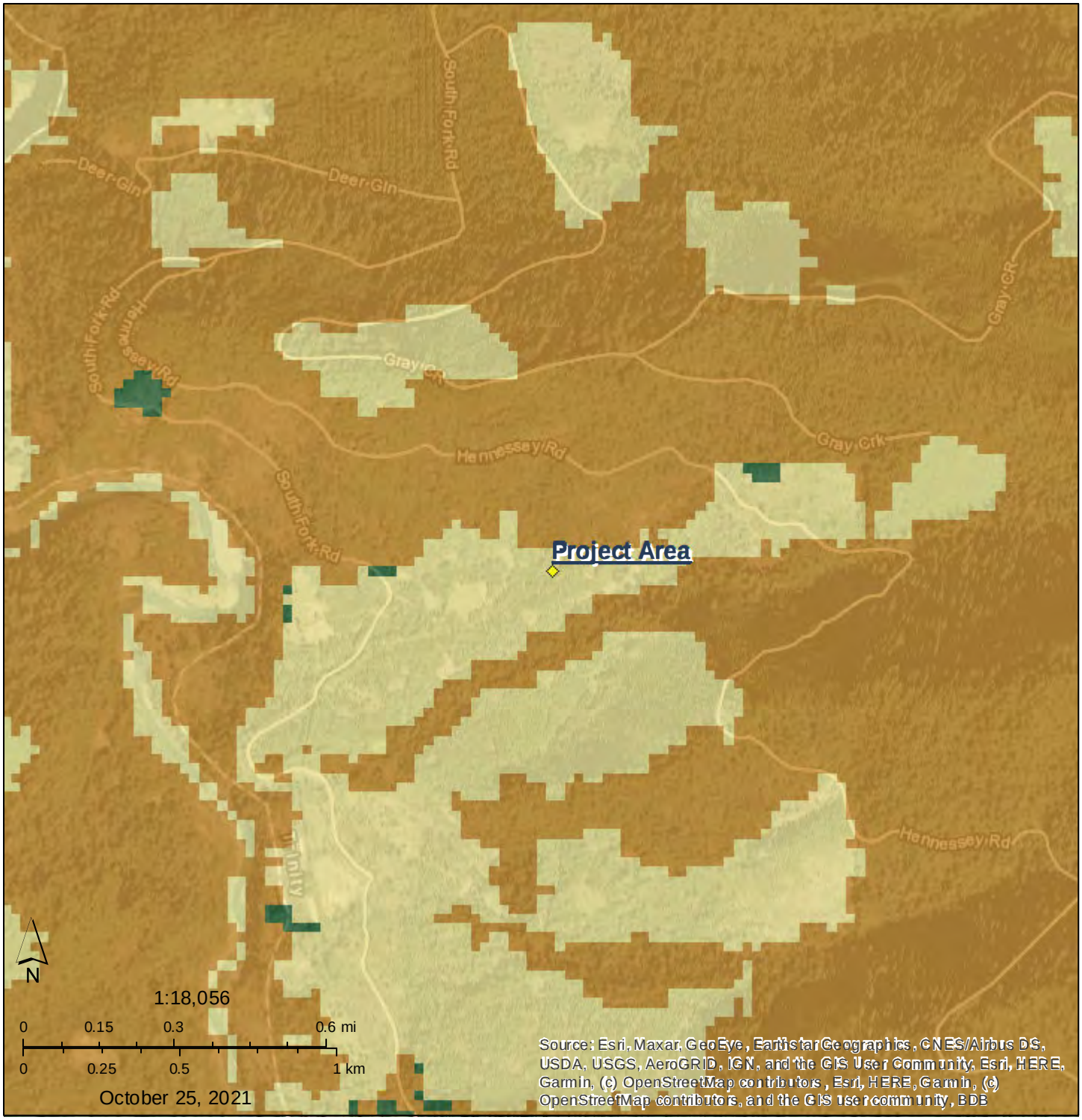
Figure 25. Townsend's Big-eared Bat Potential



Townsend's Big-eared Bat Predicted Habitat - CWHR M037 [ds2496]

- Low
- Medium
- High

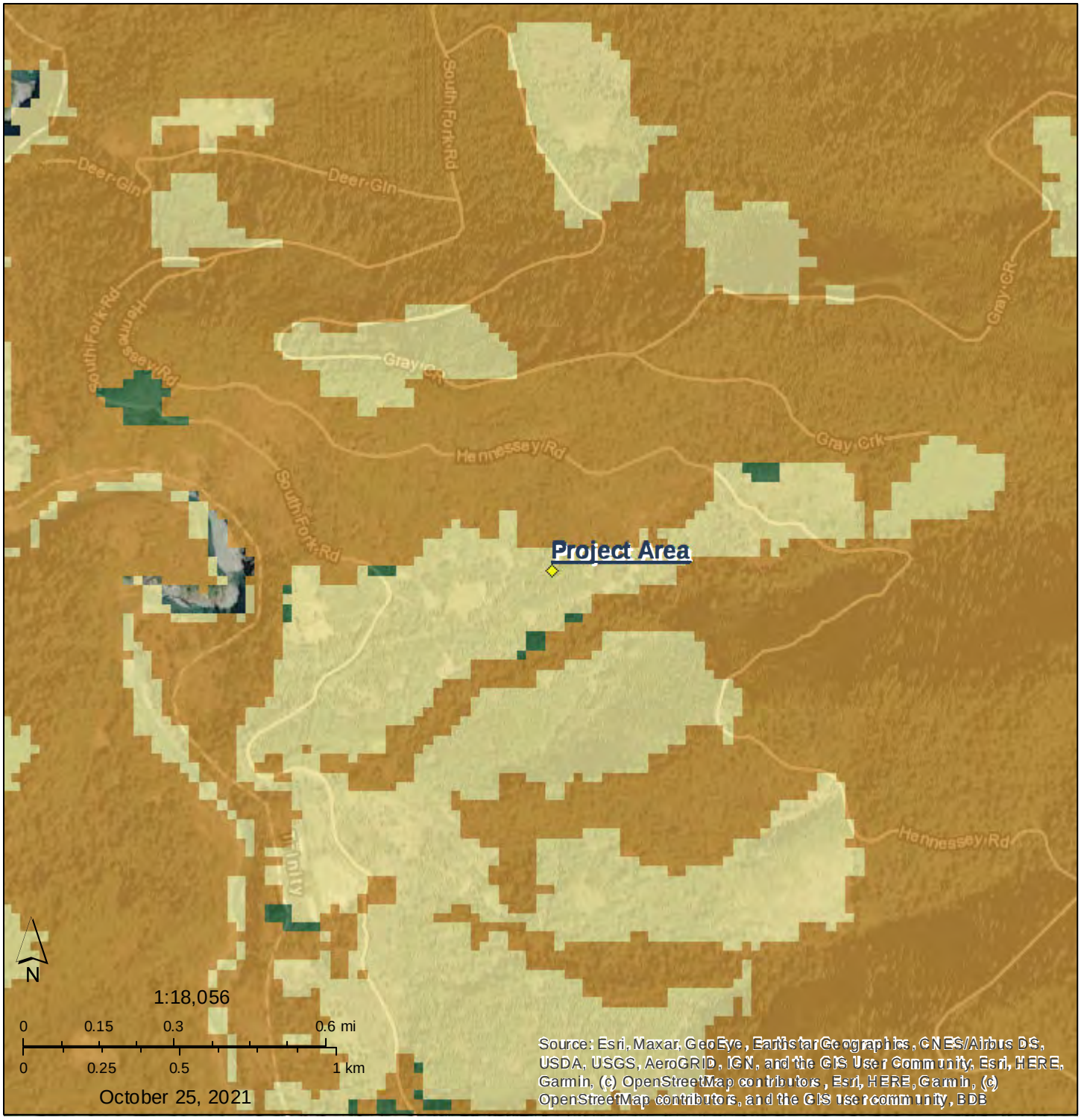
Figure 26. Silver-Haired Bat Potential



Silver-Haired Bat Predicted Habitat - CWHR M030 [ds2489]

- Low
- Medium
- High

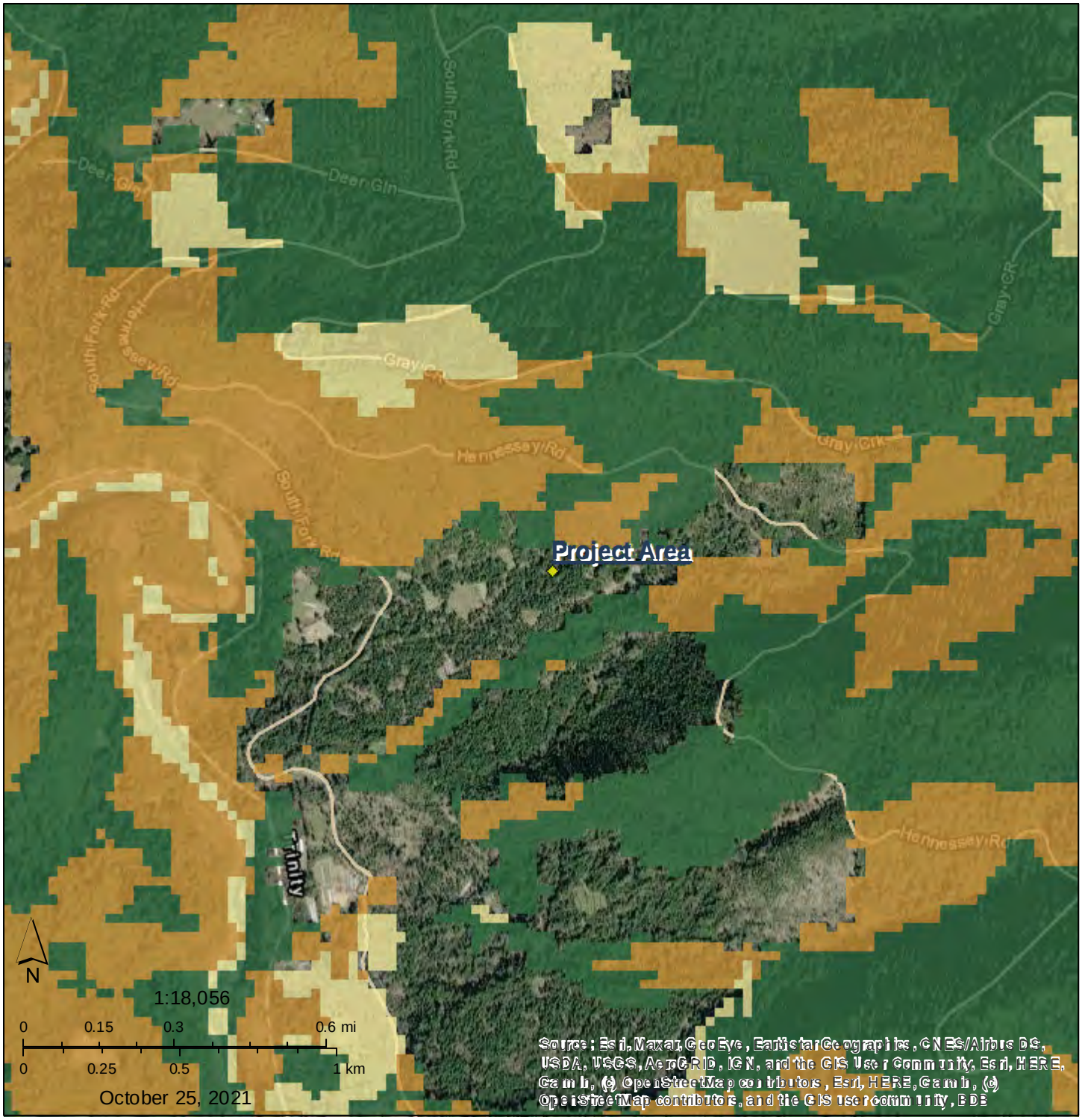
Figure 27. Hoary Bat Potential



Hoary Bat Predicted Habitat - CWHR M034 [ds2493]

- Low
- Medium
- High

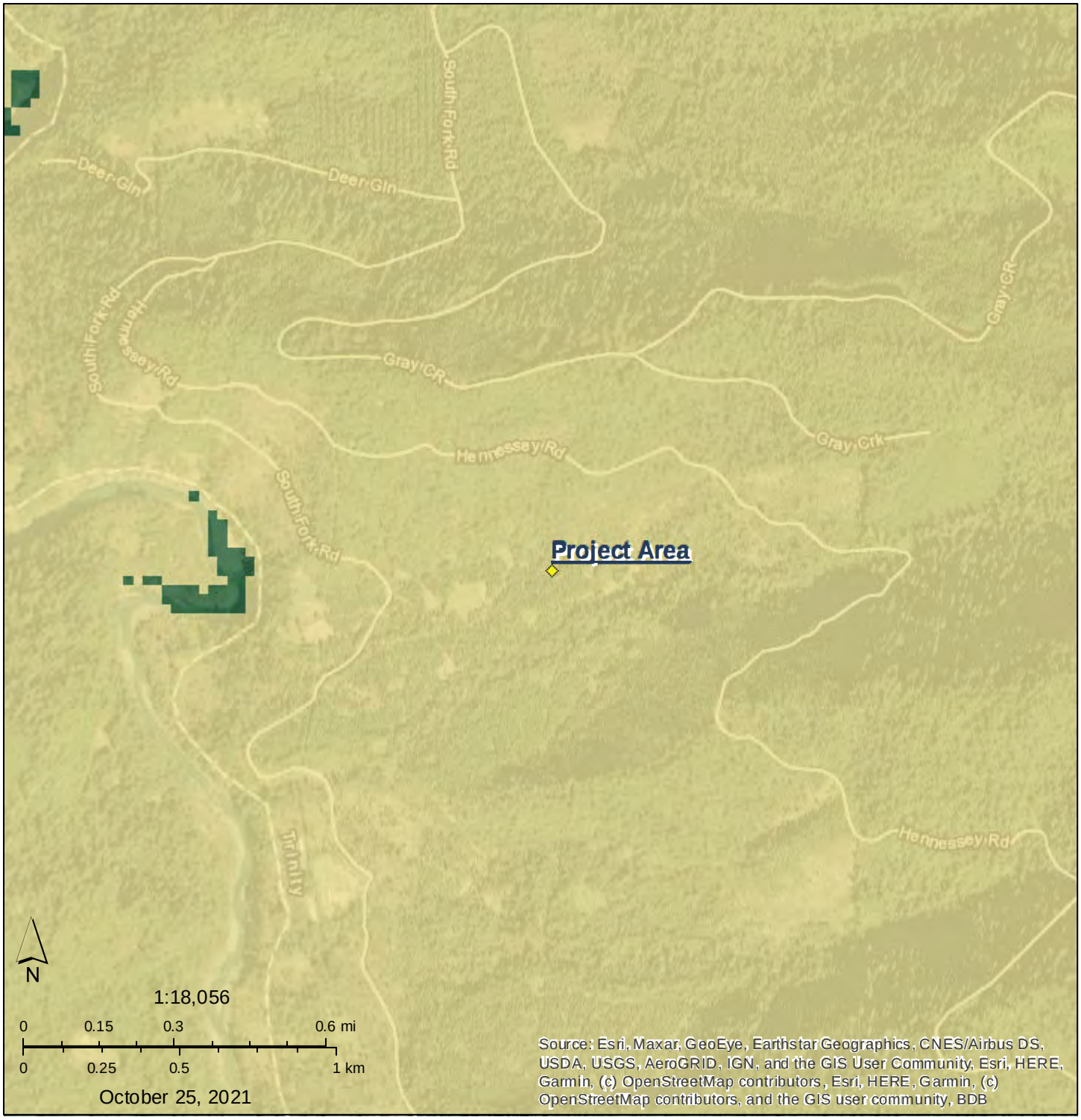
Figure 28. Long-Eared Myotis Potential



Long-Eared Myotis Predicted Habitat - CWHR M025 [ds2484]

- Low
- Medium
- High

Figure 29. Little Brown Bat Potential

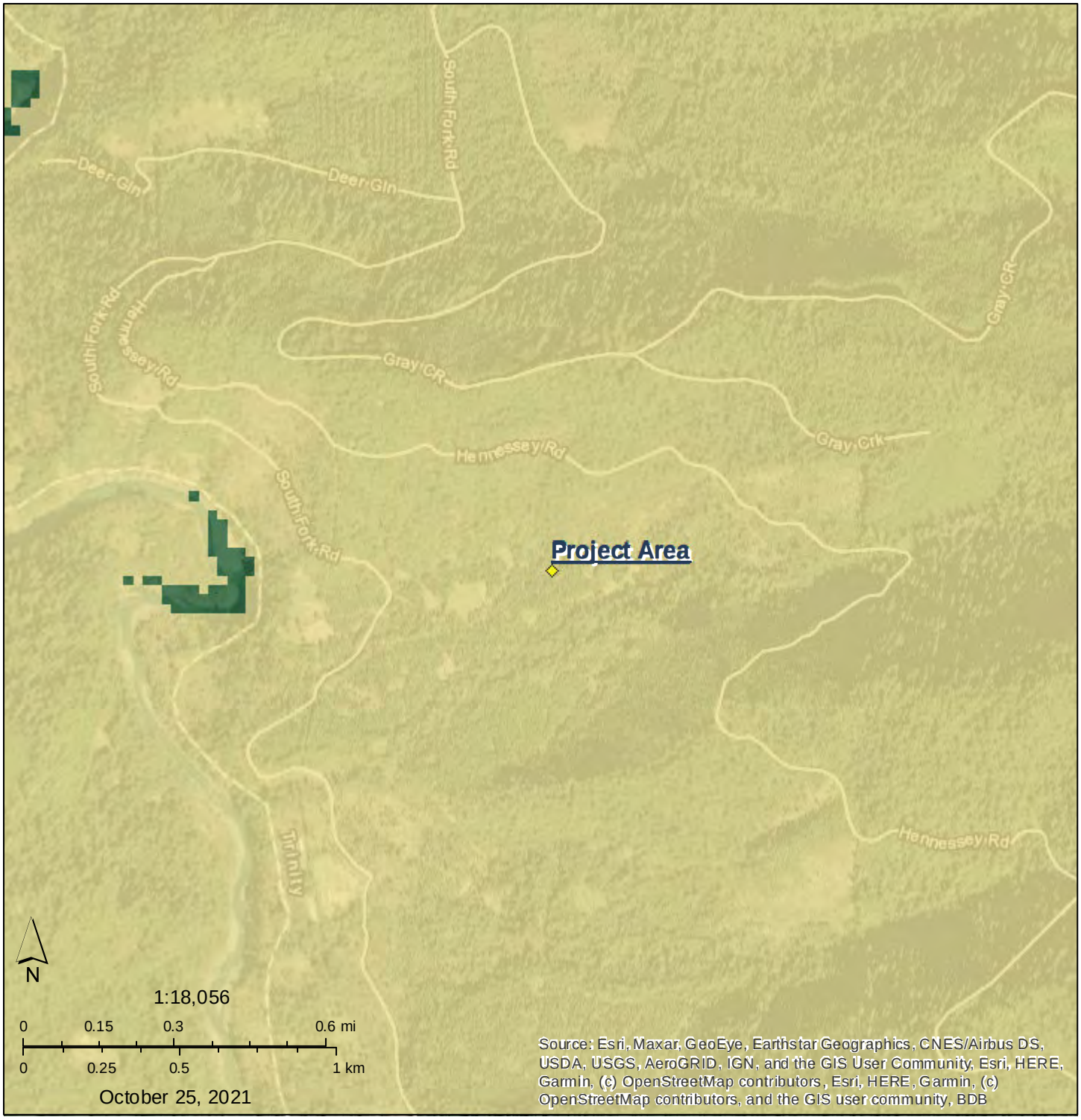


Little Brown Bat
Predicted Habitat -
CWHR M021 [ds2480]

- Low
- Medium
- High

Author: Pacific Watershed Associates
Printed from http://bios.dfg.ca.gov

Figure 30. Fringed Myotis Potential

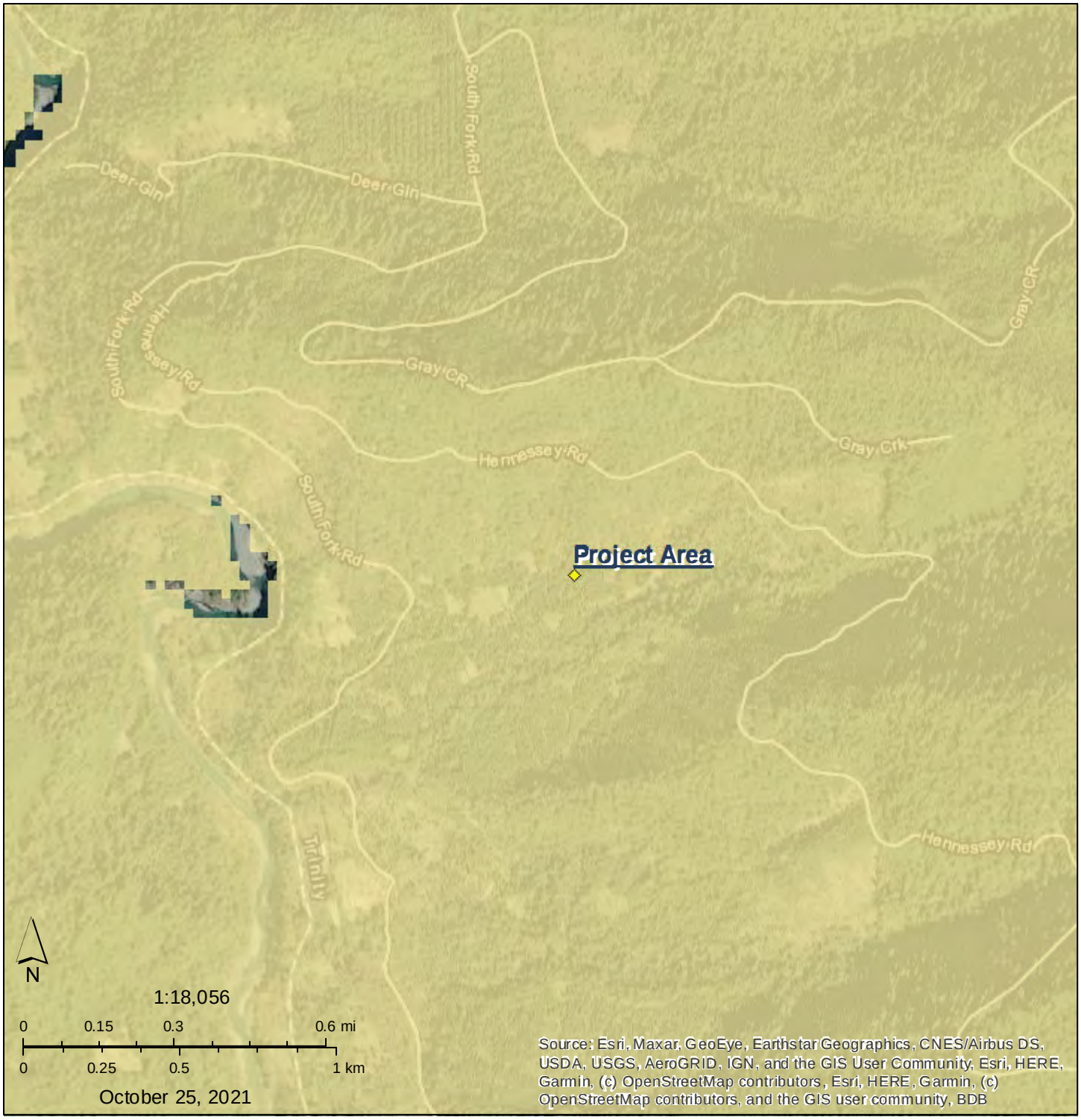


Fringed Myotis Predicted Habitat - CWHR M026 [ds2485]

- Low
- Medium
- High

Author: Pacific Watershed Associates

Figure 31. Yuma Myotis Potential



Yuma Myotis Predicted Habitat - CWHR M023 [ds2482]

- Low
- Medium
- High

Author: Pacific Watershed Associates
Printed from http://bios.dfg.ca.gov

Table 1. Special Status Plant Species Occurrence Data

Presence data is based upon field visits conducted by PWA Staff Ecologist on May 20-21st, 2020
All species were surveyed for and no special status plant species were identified during field investigations within any project area. Occurrence potentials are representative for the whole of the property.

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
Allium siskiyouense	Siskiyou onion	Alliaceae	Elevation: 900 - 2500m Ecology: Rocky slopes including serpentine, red fir forest, yellow pine forest Flowering Time: Apr - Jun	None- serpentine not identified on property
Anomobryum julaceum	slender silver moss	Bryaceae	Range: Temprate regions Ecology: cliff crevices, seeps and late snow melt areas	Moderate
Antennaria suffrutescens	evergreen everlasting	Asteraceae	Elevation: 500 - 1600m Ecology: Dry, open conifer woodland, serpentine barrens, yellow pine forest Flowering Time: Jun - Jul	None - serpentine not identified on property
Arabis modesta	modest rockcress	Brassicaceae	Elevation: 150 - 500m Ecology: Deep soil on steep slopes, cliffs, shaded canyon ledges Flowering Time: Mar - May	Moderate – potential on hillside leading to the Trinity River, outside of project area
Arnica cernua	serpentine arnica	Asteraceae	Elevation: 500 - 1500m Ecology: Serpentine soils, conifer forest, yellow pine forest Flowering Time: Apr - Jun	None - serpentine not identified on property
Astragalus umbraticus	Bald Mountain milk-vetch	Fabaceae	Elevation: 200 - 1250m Ecology: Dry, open woodland, foothill woodland Flowering Time: May - Jul	None – no suitable habitat.
Bensoniella oregona	bensoniella	Saxifragaceae	Elevation: > 750m Ecology: Wet meadows, bogs	

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
			Flowering Time: May - Jun	Low – suitable habitat outside influence of project area
Botrypus virginianus	rattlesnake fern	Ophioglossaceae	Elevation: 700 - 1200m Ecology: Moist shaded valleys along small streams	None – project area outside of species elevation range
Buxbaumia viridis	green shield-moss	Buxbaumiaceae	Range: circumboreal Ecology: rotten logs or peaty soil in moist conifer forests	Moderate – no potential within project area
Carex arcta	northern clustered sedge	Cyperaceae	Elevation: < 1400m Ecology: Wet places, especially sphagnum bogs Fruiting Time: Jun -Aug	Low – outside influence of project area
Carex geyeri	Geyer's sedge	Cyperaceae	Elevation: 900 -1200m Ecology: Open forest, slopes, sagebrush scrub, yellow pine forest Fruiting Time: May - Aug	None – project area outside of species elevation range
Carex praticola	northern meadow sedge	Cyperaceae	Elevation: (20)500 - 3200m Ecology: Moist to wet meadows, riparian edges, open forest, coastal prairie, north coast coniferous forest Fruiting Time: May - Jul	None – project area outside of species elevation range
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifrgaceae	Elevation: < 200m Ecology: Shady wet areas Flowering Time: Feb - May	Moderate – suitable habitat around project areas
Claytonia palustris	marsh claytonia	Montiaceae	Elevation: 1000 - 2500m Ecology: Marshy meadows, springs, streambanks Flowering Time: May - Aug	None – project area outside of species elevation range
Claytonia serpenticola	serpentine spring beauty	Montiaceae	Ecology: Serpentine outcrops Flowering Time: May - Aug	None - serpentine not identified on property

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
Collomia diversifolia	serpentine collomia	Polemoniaceae	Elevation: 60 - 900m Ecology: Rocky to gravelly serpentine areas Flowering Time: Apr - Jul	None - serpentine not identified on property
Collomia tracyi	Tracy's collomia	Polemoniaceae	Elevation: 30 - 2100m Ecology: Rocky, gravelly, or sandy areas, yellow pine forest Flowering Time: Jun - Sep	Moderate – suitable habitat within project area
Coptis laciniata	Oregon goldthread	Ranunculaceae	Elevation: 500 - 2000m Ecology: Wet sites, seeps, streambanks, conifer forest, redwood forest, Douglas-fir forest, wetland-riparian Flowering Time: Mar - Apr	Moderate – suitable habitat within project area
Cypripedium californicum	California lady's-slipper	Orchidaceae	Elevation: 50 - 2200m Ecology: Streambanks, moist slopes, fens, partial shade to full sun, mixed-evergreen or conifer forest, yellow pine forest, freshwater wetland, wetland-riparian Flowering Time: Apr - Jul	Moderate – suitable habitat within project area
Cypripedium fasciculatum	clustered lady's-slipper	Orchidaceae	Elevation: 100 - 2000m Ecology: Mesic to moist, shady conifer forest Flowering Time: Mar - Jul	Moderate – suitable habitat within project area
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	Elevation: 200 - 2200m Ecology: Moist areas, dry slopes, mixed-evergreen or conifer forest, yellow pine forest, mixed evergreen forest, wetland-riparian Flowering Time: Mar - Jun	Moderate – suitable habitat within project area
Epilobium oreganum	Oregon fireweed	Onagraceae	Elevation: 550 - 1800m Ecology: Bogs, small streams Flowering Time: Jul - Aug	Low – outside influence of project area
Epilobium rigidum	Siskiyou Mountains willowherb	Onagraceae	Elevation: 100 - 1200m	None – site does not contain suitable habitat

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
			Ecology: Dry, open places, dry streambed, sometimes on serpentine-like soil Flowering Time: Jul - Sep	
Epilobium septentrionale	Humboldt County fuchsia	Onagraceae	Elevation: 20 - 1900m Ecology: Dry, sandy or rocky ledges (serpentine slopes) Flowering Time: Jul - Sep	None - serpentine not identified on property
Eriastrum tracyi	Tracy's eriastrum	Polemoniaceae	Elevation: 400 - 1000m Ecology: Open areas on shale or alluvium, open woodland, chaparral Flowering Time: May - Aug	Moderate – suitable habitat around project area
Erigeron maniopotamicus	Mad River fleabane daisy	Asteraceae	Elevation: 1300 - 1500m Ecology: Dry, barren meadows and openings in mixed-conifer woodland Flowering Time: Jun - Aug	None – project area outside of species elevation range
Erigeron robustior	robust daisy	Asteraceae	Elevation: 200 - 500m Ecology: Grassy openings, meadows, sometimes on serpentine Flowering Time: Jun - July	Low – serpentine not identified on property
Eriogonum congdonii	Congdon's buckwheat	Polygonaceae	Elevation: (1000)1500 - 2300m Ecology: Serpentine Flowering Time: Jul - Sep	None – project area outside of species elevation range
Erythranthe trinitiensis	pink-margined monkeyflower	Phrymaceae	Elevation: 1300 - 2000m Ecology: Moist, generally clay soils in +/- full sun Flowering Time: Jun - Aug	None – project area outside of species elevation range
Erythronium citrinum var. citrinum	lemon-colored fawn lily	Liliaceae	Elevation: 100 - 1100m Ecology: Dry woodland, shrubby slopes (+ - on serpentine) Flowering Time: Mar - May	Low - serpentine not identified on property
Erythronium oregonum	giant fawn lily	Liliaceae	Elevation: 100 -750m Ecology: Openings in woodlands, mixed evergreen forest Flowering Time: Mar - May	Moderate – suitable habitat around project area

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
Erythronium revolutum	coast fawn lily	Liliaceae	Elevation: < 1350m Ecology: Streambanks, wet places in woodlands, redwood forest, mixed evergreen forest, wetland-riparian Flowering Time: Mar - Jul	Low – some suitable habitat around project area
Eucephalus glabratus	Siskiyou aster	Asteraceae	Elevation: 700 - 2400m Ecology: Dry oak or conifer forest, rocky places Flowering Time: Jul - Oct	None – project area outside of species elevation range
Fritillaria glauca	Siskiyou fritillaria	Liliaceae	Elevation: 600 - 2100m Ecology: Talus slopes, serpentine Flowering Time: Jun - Jul	None - serpentine not identified on property
Fritillaria purdyi	Purdy's fritillary	Liliaceae	Elevation: 400 - 2100m Ecology: Dry ridges, generally on serpentine, chaparral, foothill woodland, yellow pine forest Flowering Time: Mar - Jun	Moderate – suitable habitat outside influence of project area
Gilia capitata ssp. pacifica	Pacific gilia	Polemoniaceae	Elevation: < 400m Ecology: Steep slopes, ravines, open fltas, or coastal bluffs, grassland, dunes Flowering Time: May - Aug	Moderate – suitable habitat within project area
Hemizonia congesta ssp. tracyi	Tracy's tarplant	Asteraceae	Elevation: < 1200m Ecology: Grassy sites, riverbanks, openings in scrub, woodland, forest Flowering Time: May - Nov	Moderate – suitable habitat within project area
Hosackia yollabolliensis	Yolla Bolly Mtns. bird's-foot trefoil	Fabaceae	Elevation: 1700 - 2100m Ecology: Open, dry slopes, fir forest Flowering Time: Jun - Aug	None – project area outside of species elevation range
Iliamna latibracteata	California globe mallow	Malvaceae	Elevation: 500 -2000m Ecology: Conifer forest, streamsides, redwood forest Flowering Time: Jun - Jul	Low – suitable habitat outside influence of project area
Iris tenax ssp. klamathensis	Orleans iris	Iridaceae	Elevation: 80 - 800m Ecology: Shaded mixed-evergreen forests	

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
			Flowering Time: May	Low – generally outside of species range
Juncus regelii	Regel's rush	Cyperaceae	Elevation: 800 - 1900m Ecology: Montane meadows Fruiting Time: Aug - Sep	None – project area outside of species elevation range
Kopsiopsis hookeri	small groundcone	Orobanchaceae	Elevation: < 700m Ecology: Open woodland, mixed conifer forest, generally on *Gaultheria Shallon* Flowering Time: Apr	High – lots of salal on property
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	Elevation: < 700m Ecology: Grassy areas, woodland, chaparral Flowering Time: Apr - Mar	Moderate – suitable habitat outside of project area
Lewisia cotyledon var. howellii	Howell's lewisia	Montiaceae	Elevation: 100 - 400m Ecology: Rock outcrops, crevices on canyon walls, open woodland, chaparral, conifer forest Flowering Time: Apr - Jun	Low – suitable habitat outside of project area
Lilium kelloggii	Kellogg's lily	Lilaceae	Elevation: 200 - 1300m Ecology: Gaps, roadsides in conifer forest or chaparral Flowering Time: Jun - Aug	High – suitable habitat within and around project area
Lilium pardalinum ssp. vollmeri	Vollmer's lily	Liliaceae	Elevation: 100 - 1200m Ecology: Peatland, streams, springs Flowering Time: Jul - Aug	Moderate – suitable habitat outside of project area
Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	Liliaceae	Elevation: 300 - 2000m Ecology: Douglas-fir forest, chaparral, lodgepole forest, red fir forest, yellow pine forest Flowering Time: Jun - Aug	Moderate – suitable habitat outside of project area
Listera cordata	heart-leaved twayblade	Orchidaceae	Elevation: 100 - 1300m Ecology: Moist, shady conifer forests, yellow pine forest, north coastal coniferous forest, freshwater wetlands	Low – some suitable habitat outside of project area

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
			Flowering Time: Mar - Jun	
Lupinus elmeri	South Fork Mountain lupine	Fabaceae	Elevation: 1500 - 2000m Ecology: Open areas in conifer forest Flowering Time: Jun - Jul	None – project area outside of species elevation range
Lycopodium clavatum	running-pine	Lycopodiaceae	Elevation: < 200m Ecology: Moist ground, swamps (on trees)	None – project area outside of species elevation range
Micranthes marshallii	Marshall's saxifrage	Saxifragaceae	Elevation: < 2000m Ecology: Mossy rocks, cliffs Flowering Time: Apr - May	Low – some suitable habitat outside of project area
Mielichhoferia elongata	elongate copper moss	Melichoferiaceae	Elevation: low to high Ecology: rock, soil, substrates naturally enriched with heavy metals	None – no heavy metals in the property soil
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifragaceae	Elevation: < 2000m Ecology: Mossy rocks, cliffs, mixed evergreen forest, yellow pine forest, subalpine forest, wetland-riparian Flowering Time: Apr - May	High – suitable habitat outside of project area.
Montia howellii	Howell's montia	Montiaceae	Elevation: < 400m Ecology: Vernally wet sites, often compacted soil, redwood forest, freshwater wetlands, wetland-riparian Flowering Time: Mar - May	Low – property does not contain a lot of wet areas
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	Elevation: < 100m Ecology: Coastal sand, including dunes, roadsides, generally moist areas Flowering Time: May - Oct	None – project area outside of species elevation range
Piperia candida	white-flowered rein orchid	Orchidaceae	Elevation: < 1500m Ecology: Open to shady sites, conifer and mixed-evergreen forest	Moderate – suitable habitat within and around project areas

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
			Flowering Time: May - Sep	
Pityopus californicus	California pinefoot	Ericaceae	Elevation: < 1800m Ecology: red fir forest, yellow pine forest, north coast coniferous forest, mixed evergreen forest Flowering Time: May - Jul	High – suitable habitat within and around project areas
Platanthera stricta	slender bog-orchid	Orchidaceae	Elevation: 1000 - 2300m Ecology: Full sun to part shade, wet meadows, seeps, conifer forest Flowering Time: May - Sep	None – project area outside of species elevation range
Pleuropogon refractus	nodding semaphore grass	Poaceae	Elevation: < 1600m Ecology: Wet meadows, shady banks Flowering Time: Apr - Jul	Low – suitable habitat outside of project area
Ptilidium californicum	Pacific fuzzwort	Ptilidiaceae	Range: circumboreal and bipolar Ecology: decaying wood, among boulders in talus slopes, ledges of cliffs	Moderate – suitable habitat around project area
Ramalina thrausta	angel's hair lichen	Ramalinaceae	Range: boreal North America Ecology: lower elevation conifer forests with a hardwood component, occurring on branches and boles of conifers	Low – not identified within close vicinity of property
Rosa gymnocarpa var. serpentina	Gasquet rose	Rosaceae	Elevation: 400 - 1500m Ecology: Full sun in chaparral, dwarf forest on ultramafic substrates, Flowering Time: Apr - Jun	None – no suitable habitat within property
Sanicula tracyi	Tracy's sanicle	Apiaceae	Elevation: 40 - 1500 m Ecology: Openings in conifer forests, woodlands, foothill woodlands, red fir forest, yellow pine forest Flowering Time: Mar - May	Moderate – suitable habitat within and around project area
Sedum flavidum	pale yellow stonecrop	Crassulaceae	Elevation: 800 - 2000m Ecology: Serpentine or basalt outcrops, chaparral, foothill woodland, yellow pine forest, mixed evergreen forest Flowering Time: May - Jul	None – project area outside of species elevation range

Table 1. Special Status Plant Species Occurrence Data				
Scientific Name	**Common Name**	**Family**	**Habitat Requirements**	**Potential to Occurr**
Sedum laxum ssp. heckneri	Heckner's stonecrop	Crassulaceae	Elevation: 100 - 1800m Ecology: Generally steep serpentine or gabbro outcrops, lodgepole forest, red fir forest, yellow pine forest Flowering Time: May - Sep	Low – potential on cliff down to the Trinity
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	Malvaceae	Elevation: < 700m Ecology: Open coastal forests, bluffs Flowering Time: May - Aug	None – property outside of species known range
Sidalcea oregana ssp. eximia	coast checkerbloom	Malvaceae	Elevation: < 1200m Ecology: Meadows Flowering Time: Jun - Aug	High – lots of occurrences around property and suitable habitat
Streptanthus oblanceolatus	Trinity River jewelflower	Brassicaceae	Elevation: (+ -) 400 Ecology: Cliffs, canyon walls, in conifer forests Flowering Time: Jun - Jul	Low – potential on cliff down to the Trinity
Tiarella trifoliata var. trifoliata	trifoliate laceflower	Saxifragaceae	Elevation: < 1500m Ecology: Moist shady streambanks Flowering Time: Jun - Aug	Moderate – suitable habitat outside of project area
Trifolium howellii	Howell's clover	Fabaceae	Elevation: 800 - 1800m Ecology: Wet or shady places, meadows with sedges, alder swamps Flowering Time: Jul - Aug	None – project area outside of species elevation range
Vaccinium scoparium	little-leaved huckleberry	Ericaceae	Elevation: 1800 - 2200m Ecology: Rocky subalpine woodland Flowering Time: Jun - Jul	None – project area outside of species elevation range
Wyethia longicaulis	Humboldt County wyethia	Asteraceae	Elevation: 750 - 1500m Ecology: Grassland, open forest, coastal prairie, yellow pine forest, mixed evergreen forest Flowering Time: May - Jul	None – project area outside of species elevation range

Table 2. Botanical Survey Taxa List

The botanical survey was conducted by Georgia Hamer on July 14th 2020 and April 20th 2021.

Nomenclature and taxonomy follow the Integrated Taxonomic Information System, 2021.

Cal-IPC – California Invasive Plant Council

Total Taxa: 88

Table 2. Botanical Survey Taxa List				
Genus	**Species**	**Common Name**	**Family**	**Origin**
Toxicodendron	*diversilobum*	Poison oak	Anacardiaceae	Native
Osmorhiza	*berteroi*	sweet cicely	Apiaceae	Native
Torillis	*arvensis*	field hedge parsley	Apiaceae	Cal-IPC Moderate
Apocynum	*androsaemifolium*	spreading dogbane	Apocynaceae	Native
Aralia	*californica*	California spikenard	Araliaceae	Native
Anaphalis	*margaritacea*	pearly everlasting	Asteraceae	Native
Baccharis	*pilularis*	coyote brush	Asteraceae	Native
Centaurea	*solstitialis*	yellow starthistle	Asteraceae	Cal-IPC High
Cirsium	*vulgare*	bull thistle	Asteraceae	Cal-IPC Moderate
Crepis	*pleurocarpa*	nakedstemmed hawksbeard	Asteraceae	Native
Erophyllum	*lanatum*	wooly sunflower	Asteraceae	Native
Hypochaeris	*radicata*	hairy cats ear	Asteraceae	Cal-IPC Moderate
Logfia	*gallica*	narrowleaf cottonrose	Asteraceae	Non-native
Madia	*exigua*	small tarweed	Asteraceae	Native
Alnus	*viridis ssp. sinuata*	Sitka alder	Betulaceae	Native
Corylus	*cornuta ssp. californica*	beaked hazelnut	Betulaceae	Native
Woodwardia	*fimbriata*	western chain fern	Blechnaceae	Native
Cynoglossum	*grande*	houndstongue	Boraginaceae	Native
Phacelia	*sp.*	phacelia	Boraginaceae	Native
Plagibothrys	*sp.*	popcorn flower	Boraginaceae	Native
Asyneuma	*prenanthoides*	California harbell	Campanulaceae	Native
Lonicera	*hispidula*	pink honeysuckle	Caprifoliaceae	Native
Symphoricarpos	*albus*	common snowberry	Caprifoliaceae	Native
Cerastium	*glomeratum*	large mouse ears	Caryophyllaceae	Non-native
Silene	*laciniata ssp. californica*	California indian pink	Caryophyllaceae	Native
Cuscata	*californica*	California dodder	Convolvulaceae	Native
Cornus	*nuttallii*	mountain dogwood	Cornaceae	Native
Pteridium	*aquilinum*	western bracken fern	Dennstaedtiaceae	Native
Polystichum	*munitum*	western sword fern	Dryopteridaceae	Native

Table 2. Botanical Survey Taxa List				
Genus	**Species**	**Common Name**	**Family**	**Origin**
Arbutus	*menziesii*	Madrono	Ericaceae	Native
Arctostaphylos	*patula*	green leaf manzanita	Ericaceae	Native
Gaultheria	*shallon*	salal	Ericaceae	Native
Croton	*setiger*	turkey-mullein	Euphorbiaceae	Native
Acmispon	*americanus*	American bird's foot trefoil	Fabaceae	Native
Trifolium	*arvense*	rabbitfoot clover	Fabaceae	Non-native
Vicia	*americana ssp. americana*	American vetch	Fabaceae	Native
Notholithocarpus	*densiflorus*	tanoak	Fagaceae	Native
Quercus	*chrysolepis*	canyon live oak	Fagaceae	Native
Quercus	*kelloggii*	California black oak	Fagaceae	Native
Ribes	*roezlii var. cruentum*	spiny fruited gooseberry	Grossulariaceae	Native
Whipplea	*modesta*	modesty	Hydrangeaceae	Native
Fragaria	*perforatum*	kalamathweed	Hypericaceae	Cal-IPC Moderate
Sisyrinchium	*sp.*	blue eyed grass	Iridaceae	Native
Monardella	*odoratissima*	mountain monardella	Lamiaceae	Native
Stachys	*mexicana*	Mexican hedgenettle	Lamiaceae	Native
Umbellularia	*californica*	California bay	Lauraceae	Native
Trillium	*ovatum*	Western wakerobin	Melanthiaceae	Native
Claytonia	*perforliata*	Miner's lettuce	Montiaceae	Native
Lysimachia	*latifolia*	Pacific starflower	Myrsinaceae	Native
Epilobium	*minutum*	little willowherb	Onagraceae	Native
Castilleja	*attenuata*	Narrow leaved owl's clover	Orobanchaceae	Native
Abies	*concolor*	white fir	Pinaceae	Native
Pinus	*sabiniana*	gray pine	Pinaceae	Native
Pseudotsuga	*menziesii*	Douglas fir	Pinaceae	Native
Linaria	*dalmatica*	dalmatian toadflax	Plantaginaceae	Non-native
Plantago	*lanceolata*	ribwort	Plantaginaceae	Cal-IPC Limited
Aria	*caryophyllea*	silvery hairgrass	Poaceae	Non-native
Bromus	*hordeaceus*	soft chess	Poaceae	Native
Bromus	*rubens*	red brome	Poaceae	Cal-IPC High
Cynosurus	*echinaturs*	dogtail grass	Poaceae	Cal-IPC Moderate
Melica	*californica*	California melic	Poaceae	Native
Phleum	*pratense*	common timothy	Poaceae	Non-native
Poa	*secunda*	pine bluegrass	Poaceae	Native

Table 2. Botanical Survey Taxa List				
Genus	**Species**	**Common Name**	**Family**	**Origin**
Collomia	*heterophylla*	varied leaved collomia	Polemoniaceae	Native
Leptosiphon	*bicolor*	true babystars	Polemoniaceae	Native
Pentagramma	*triangularis*	gold back fern	Pteridaceae	Native
Ceanothus	*integerrimus*	deerbrush	Rhamnaceae	Native
Ceanothus	*velutinus*	tobacco brush	Rhamnaceae	Native
Ceanothus	*cuneatus*	buck brush	Rhamnaceae	Native
Ceanothus			Rhamnaceae	Native
Drymocallis	*rhomboidea*	Common cinquefoil	Rosaceae	Native
Fragaria	*vesca*	wild strawberry	Rosaceae	Native
Holodiscus	*discolor*	oceanspray	Rosaceae	Native
Prunus	*emarginata*	bitter cherry	Rosaceae	Native
Rosa	*gymnocarpa*	wood rose	Rosaceae	Native
Rubus	*armeniacus*	Himalayan blackberry	Rosaceae	Cal-IPC High
Rubus	*glaucifolium*	wax leaf raspberry	Rosaceae	Native
Rubus	*parviflorus*	thimbleberry	Rosaceae	Native
Rubus	*ursinus*	California blackberry	Rosaceae	Native
Spiraea	*douglasii*	Douglas spiraea	Rosaceae	Native
Galium	*aparine*	cleavers	Rubiaceae	Native
Maianthemum	*racemosum*	feathery false lily of the valley	Rusaceae	Native
Salix	*lasiolepis*	Arroyo willow	Salicaceae	Native
Acer	*macrophyllum*	bigleaf maple	Sapindaceae	Native
Heuchera	*micrantha*	alum root	Saxifragaceae	Native
Verbascum	*thapsus*	wolly mullein	Scrophulariaceae	Cal-IPC Limited
Viola	*ocellata*	two-eyed violet	Violaceae	Native
Vitis	*californica*	California wild grape	Vitaceae	Native

O'Brien Biological Consultants

2407 Frank St.
Eureka, CA 95501

Brit O'Brien 707-845-6627
obrien_biological@yahoo.com

A Northern Spotted Owl (NSO) Habitat and Impact Assessment for Cannabis Operations for the Vital Green Future LLC
5200 South Fork Road
APN # 008-080-32-00

By
Brit O'Brien
O'Brien Biological Consultants (OBC)
2407 Frank St.
Eureka, CA 95501

Introduction

Purpose and Need

This Northern Spotted Owl (NSO) Habitat Assessment has been prepared for the Vital Green Future (VGF) LLC property, 5200 South Fork Road, Salyer, CA, as a supplemental document for a commercial cannabis cultivation permit.

This assessment attempts to summarize potential impacts to NSO foraging and roosting/nesting habitats from cannabis cultivation at the VGF LLC property, as well as to provide a baseline of NSO data relevant to the site and for any potential expansion of a designated area.

Through obligations of environmental review under the California Environmental Quality Act (CEQA), permits are legally required by both the State of California and Trinity County for all cannabis cultivation activities. Trinity County regulates commercial cannabis cultivation on this property through the draft Cannabis Program (Ordinance No. 315-823) which requires permit applicants to assess all potentially significant impacts to biological resources from proposed cannabis cultivation operations.
The County has recently certified (Dec. 2020) the final Environmental Impact Report for their Cannabis Program. The following adopted performance standards in the EIR will provide the required mitigations for NSO:

- If the area of proposed new development activities (e.g., any application for commercial cannabis operations or renewal of an existing licensed cultivation site that is planning to expand its Designated Area) is within suitable habitat for northern spotted owl (e.g., coniferous forest), and is within 1.3 miles (average species home range) of a known occurrence of northern spotted owl, as determined by a qualified biologist familiar with the species and protocol, and approved by the County, the following measures shall be followed:

- Prior to removal of any trees, or ground-disturbing activities adjacent or within suitable nesting, roosting, or foraging habitat (e.g., forest clearings) for spotted owl, a qualified biologist approved by the County and familiar with the life history of the northern spotted owl shall conduct preconstruction surveys for nests within a 1.3-mile buffer around the site as described in Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls (USFWS 2012). Surveys shall take place between March 1 and August 31. Three complete surveys spaced at least 7 days apart must be completed by June 30. Six complete surveys over the course of 2 years must be completed to determine presence or absence of northern spotted owl.

- If northern spotted owls are determined to be absent 1.3 miles from the site, then further mitigation is not required.

- If northern spotted owls are determined to be present within 1.3 miles of the site, then it is presumed that habitat removal could cause harm to northern spotted owl populations in the area and could result in direct take of northern spotted owls. If northern spotted owls are determined to be present within 1.3 miles of the site, proposed cultivation activities, including expansion of an

existing Designated Area, will not be permitted.

The Vital Green Future (VGF) LLC has received annual state and county licenses for mixed-light cannabis cultivation since the beginning of Trinity County's Cannabis Program.

Project Sites and NSO Assessment Area

The NSO assessment area is defined as the entire property of approximately 143 acres under ownership of Patrick Kahan/VGF LLC (APN 008-080-32-00) and including a 1.3-mile disturbance impact buffer around his parcel (Figure F). The project sites are defined, for the purposes of this NSO report only, as the two cannabis operation sites at the western (Site #1) and central (Site #2) portions of the parcel (Figure A).

Site 1 has had power provided by PG&E for cannabis operations since March 2020. The cultivation operation at site 2 does not require power for cultivation purposes; any future needs for power at site 2 would be supplied by solar DC.

South Fork road crosses the western portion of the property, between sites 1 and 2. The property is zoned as Timberland Production. A map showing the existing operation premises outline and cultivation areas is included (Figure B)

Site Visit

On October 23rd and December 14th, 2020, Brit O'Brien of O'Brien Biological Consultants (OBC) surveyed forest habitat and photographed the Kahan/VGF property and surrounding properties to assess potential impacts to NSO habitat from existing cannabis operations. The forested habitat on the property is classified as Pacific Douglas Fir forest, consisting mostly of Douglas Fir (*Pseudatsuga menziesii*), Madrone (*Arbutus menziesii*), Tanoak (*Notholithocarpus densiflorus*), Canyon Live Oak (*Quercus chrysolepis*), and Big-leaf Maple (*Acer macrophyllus*) (Mayer and Laudenslayer 1988). The open cultivation sites consist of annual and perennial grasslands.

The property was logged ~ 30 years ago, the majority of the fir habitat there is young and not structurally complex enough to support nesting/roosting NSO. There are some large mature fir trees along the unnamed Class III creek on the southeastern edge of the property, but that linear habitat is highly likely too small and exposed to support nesting NSO (Figure A, Photos 12-14). However, forest clearings on the Kahan/VGF parcel and adjacent properties likely provide potentially good foraging areas for NSO.

Northern Spotted Owl

Natural History and Distribution

The Northern spotted owl (*Strix occidentalis caurina*) is one of three subspecies of Spotted owl residing in the forests of Western North America. This species currently ranges from Southwest British Columbia through the Cascade mountains and coastal ranges of Washington and Oregon and into the interior and coastal ranges of Northern California, down to Marin county.

Northern Spotted Owls (NSO) use a variety of forest types, including Douglas fir, Shasta Red fir, Western Hemlock, Ponderosa Pine, Coast Redwood, and other mixed conifer and conifer/hardwood (Gutierrez,

1996). Northern Spotted owls are typically associated with mature or unlogged forest, or younger forest with structural deformities or residual older trees, for nesting and roosting. These habitats often have a multi-layered canopy, large diameter overstory trees, and a high canopy closure, > 60% (Thomas *et al* 1990, Gutierrez 1996). Large snags and canopy deformities are important forest components for breeding, providing platforms and cavities for nesting (Thomas *et al*, 1990).

Northern spotted owl pairs often re-use nesting sites from year to year, provided the habitat remains intact and relatively undisturbed (Guttierrez, 1996). The female provides incubation and brooding for the young, while the male generally hunts for the family. Young generally disperse by August or September.

Primary prey for the spotted owl in California includes the Dusky-footed woodrat, Humboldt's (Northern) flying squirrel, Red tree vole, terrestrial voles, and deer mice (Ward 1998). These prey species comprise approximately 90% of spotted owl diets (Ward 1998).

NSO home ranges generally increase in size the farther north they are located, although habitat loss and fragmentation, prey distribution, and forest type clearly have an effect on home range size. In Northern California, estimated spotted owl pair home ranges varied from 1,692 acres (Willow Creek) to 3,314 acres (Ukonom), with a median annual home range of ~ 3,000 acres (USFWS 2011).

Mature or unlogged forests are important aspects of NSO home ranges. The minimum amount of mature or old-growth forest found in owl home ranges on Forest Service lands was 367 acres; the median amount was 800 acres (Thomas *et al*, 1990).

In managed (harvested) redwood forests of northwest California, forest stands in home ranges of NSO had a mean of 97 hectares (~240 acres) of forest aged 46-60 years (Folliard *et al,* 2000).

A similar mean of 94 ha (232 acres) of mature or old growth forest was found in 200 ha plots centered on NSO nest sites in northwest California (Hunter *et al*, 1995). The researchers also found less forest fragmentation at nest site plots versus random plots in the same study.

Carey *et al*, found that northern spotted owl home ranges in Southwest Oregon contained between 27% to 75% old-growth forest.

Primary threats to NSO survival and reproduction are the continuing loss and fragmentation of habitat due to logging, severe-wildfire threats from climate change, and displacement/mortality from the expanding west coast Barred Owl population (Wiens *et al*, 2014; Long and Wolfe, 2019).

This data and other research have shown that NSO exhibit high nesting/roosting site fidelity, as long as the habitat remains relatively intact and undisturbed. The data also reveals that NSO strongly prefer home ranges with significant quantities of mature or unlogged forest for nesting/roosting habitat, especially within interior forests. Some studies have indicated that younger (45-60 yrs.), managed coastal redwood forests may also support NSO breeding, primarily from higher woodrat prey availability in these forests.

Willow Creek Study Area

Colorado State University is conducting a long-term NSO demographic study in the Willow Creek Study Area (WCSA), which conducts surveys and monitoring of established NSO Activity Centers and all associated potential habitat (Figures I-J). Peter Carlson is the local research associate for the WCSA project, and he has provided data for the two NSO Activity Centers within the 1.3-mile Kahan/VGF project impact footprint, TRI0056 and HUM0065, which are both ~ 1-mile from the cultivation sites. According to his data, TRI0056 has not been occupied by NSO since 2002, and HUM0065 last recorded a pair of non-nesting NSO in 2017. HUM0065 has not had any detections at all since 2017, but both sites 1 & 2 have now recorded barred owl presence in 2020 (Figures E-G).

This demographic study will continue to monitor the ~ 61 previously established Activity Centers in the WCSA in 2021 and beyond. Twelve of these sites are located in Trinity County, shown on the western portion of the WCSA map (Figure I). Mr. Carlson has asked that any biologists or NSO researchers who may need current year information on these owl sites to please contact him for any data, and to please not conduct any NSO surveys within the WCSA, so as to not confound any data they collect for the demographic study. A recent confirmation email with Mr. Carlson is included, with permission (Figure k).

Noise Disturbance to NSO

As no forest habitat removal is planned for the Kahan/VGF property for current or proposed expanded cannabis operations, the likely only potentially significant source of impacts to NSO from operations at the site are from disturbance from sound or light effects, or from direct line-of-sight visual disturbance.

Noise alone has the potential to disturb spotted owl nesting habitat and has been a source of increasing concern for agencies (CalFire, CDFW, USFWS) responsible for the management of spotted owl habitats (USFWS 2006). When sound disturbance levels cause a disruption to behaviors that may affect the reproduction or survival of threatened or endangered species, harassment, or 'take', of the species may occur (USFWS 2006). A disruption to these behaviors is defined as:

An adult or juvenile is flushed from a nest during the incubation, brooding, or fledging period, that potentially results in egg failure or reduced juvenile survival.

An adult abandons a feeding attempt of a dependent juvenile for an entire daily feeding period, that potentially results in malnutrition or starvation of the young.

An adult delays feeding attempts of dependent birds on multiple occasions during the breeding season, potentially reducing the growth or likelihood of survival of young.

The Arcata Fish and Wildlife Office (AFWO) has provided a 2006 guidance document regarding disturbance from noise-generated activities, "Estimating the effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California."
The document provides probable disturbance distances to nesting owls, based on factors of ambient sound levels at the site, the use of specific equipment, and visual line-of-sight distance to nests.
The ten different 'scenarios' provided in the document are assessed with both low and moderate ambient background sound levels, as well as increasing levels of development/construction impacts, to cover the full range of forest management activities likely to occur.

A review of the document suggests that scenario 7 under appendix B, the "Northern Spotted Owl Sound and Visual Harassment Decision Support Tool", best reflects the likely ambient sound conditions at the two sites and the equipment likely to be used during cultivation.
Under this scenario, "The existing environment is characterized by the medium to very low levels of existing ambient sound associated with human activities, and is typified by small power tools, light vehicular traffic moving at slow speeds, recreational activities, and many urban and rural residential and commercial activities" (USFWS 2006).

The typical action-generated sounds from site preparation and cultivation operations under this scenario could include "very large construction equipment, large gas-powered engines, ATVs and small trucks at high speed or on rough surfaces, and the largest chain saws" as well as “larger construction equipment such as the largest backhoes, large dozers, hoe-rams, large trucks using jake brakes at moderate to high speeds”.

This scenario would be applicable to timber harvest operations involving the felling of small to moderate sized trees (such as thinning operations) in typical forest conditions near small roads and similar sources of human-generated sound. Scenario 7 closely approximates or exceeds both the likely ambient background noise at the site, as well as the potential action-generated noise from any site clearing, development, or cultivation activities (USFWS 2006).

Under scenario 7, the predicted auditory disturbance distance that may impact nesting Spotted Owls is 200 meters, with either low or moderate ambient background sounds at the sites. The visual line-of sight disturbance distance for nests is a maximum of 100 meters, or less if a view of the nest is obscured (USFWS 2006).

Light Disturbance to NSO

The following standards have been adopted by Trinity County to meet lighting and glare requirements for state and county cannabis licensing.

- All lighting associated with the operation shall be downcast, shielded and/or screened to keep light from emanating off-site or into the sky (Section 315-843[6][l]).

- Those cultivations using artificial lighting from mixed-light cultivations shall shield greenhouses so that little to no light escapes. Light shall not escape at a level that is visible from neighboring properties between sunset and sunrise (Section 315-843[6][m])

By implementing these standards, potential light and glare impacts would be reduced to less than significant for both project and cumulative conditions under the cannabis program. Under the existing licenses, the Kahan/VGF cannabis operations already meet the light and glare standards described above.

Discussion

Most of the mature forest on and surrounding the Kahan/VGF property has been recently logged, and the young age of the forest makes it highly likely unsuitable for nesting/roosting NSO.

Under current operations, and likely for any expanded cultivation areas, there would also remain significant open ground for NSO foraging on the parcel (Photos 6, 9-11).

The nearest critical habitat for the NSO is approximately 0.45 miles to the west, and 0.26 miles to the east of sites 1 and 2, respectively (Figures C-D).

There are two NSO activity centers associated with the cultivation sites, HUM065 located 0.92 miles west of the parcel, and TRI056, 1.0 miles northeast of the parcel (Figures E-F). Both sites have recorded

Barred owl presence in 2020. No NSO have been detected at either site, or anywhere within the 1.3-mile buffer since at least 2017.

There are current and future plans by the WCSA to monitor the sites and owl habitat within the 1.3-mile NSO buffer of the Kahan/VGF property.

An analysis of potential noise impacts at the cultivation sites indicates a likely disturbance distance of only 200 meters (1/8 mile) to any nesting NSO. Current operations at the two sites meet the current lighting and glare performance standards of the EIR.

The cannabis cultivation process at the Kahan/VGF property will be restricted to the existing roads and cultivation sites. Forest habitat on and immediately surrounding the property is young, and no forested habitat removal is proposed under the current CUP permit. Any potential impacts to NSO within the assessment area are limited to noise disturbance from typical operations at the sites and from any traffic along South Fork road.

Based on NSO demographic and disturbance impact research, current and historical NSO and Barred owl survey information, and a review of forest conditions at and surrounding the cultivation sites, there is highly likely no probability of significant disturbance impacts to Northern Spotted owls at the Kahan/VGF property from existing cultivation activities. Any proposed expansion of Designated Areas is also unlikely to cause NSO disturbance from typical cultivation activities.

Recommendations

Northern Spotted owl survey data from the WCSA should be submitted annually to Trinity County Planning Dept. for NSO monitoring purposes.
As the WCSA will provide future NSO data, there should be no Northern Spotted owl surveys conducted specifically on behalf of the Kahan/VGF property cannabis project.

Any questions regarding this analysis or the data cited should be addressed to:

Brit O'Brien
Senior Biologist
O'Brien Biological Consultants
2407 Frank St.
Eureka, CA 95501
obrien_biological@yahoo.com

Literature Cited

Carey, A.B., J.A. Reid and S.P. Horton. 1990. Spotted Owl home range and habitat use in southern Oregon coast ranges. *Journal of Wildlife Management*, 54: pp. 11-17.

Clark, D. A., R. G. Anthony, and L. S. Andrews. 2013. Relationship between wildfire, salvage logging, and occupancy of nesting territories by northern spotted owls. *Journal of Wildlife Management* 77: 672– 688.

Folliard, L. B., Reese K. P., Diller L. V. 2000. Landscape Characteristics of Northern Spotted Owl Nest Sites in Managed Forests of Northwestern California. *Journal of Raptor Research*, 34 (2): pp. 75-84.

Forsman, Eric D., et al. Distribution and Biology of the Spotted Owl in Oregon. *Wildlife Monographs*, no. 87, 1984, pp. 3–64.

Gutiérrez, R.J. 1996. Biology and distribution of the northern spotted owl. *Studies in Avian Biology* 17:2–5.

Hunter, J.E., R.J. Gutierrez and A.B. Franklin. 1995. Habitat configuration around Spotted Owl sites in northwestern California. *Condor*. 97:684-693.

Long, L. L., Wolfe, J. D. 2019. Review of the effects of Barred Owls on Spotted Owls. *Journal of Wildlife Management*. 83(6): 1281-1296.

Mayer, K.E, and W.F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. California Dep. Of Forestry and Fire Protection, Pacific Southwest Forest and Range Experiment Station (Berkeley, Calif.).

Miller, G.S., R.J. Small and E.C. Meslow. 1997. Habitat selection by spotted owls during natal dispersal in western Oregon. *Journal of Wildlife Management* 61:140–150.

Thomas, J.W., E.D. Forsman, J.B. Lint, E.C. Meslow, B.R. Noon and J. Verner. 1990. A conservation strategy for the northern spotted owl. Interagency Scientific Committee to Address the Conservation of the Northern Spotted Owl. U.S. Forest Service, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, and U.S. National Park Service, Portland, Oregon.

United States Fish and Wildlife Service (USFWS). 1992. Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.

United States Fish and Wildlife Service (USFWS), Arcata, CA. 2006. Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California. July 26, 2006.

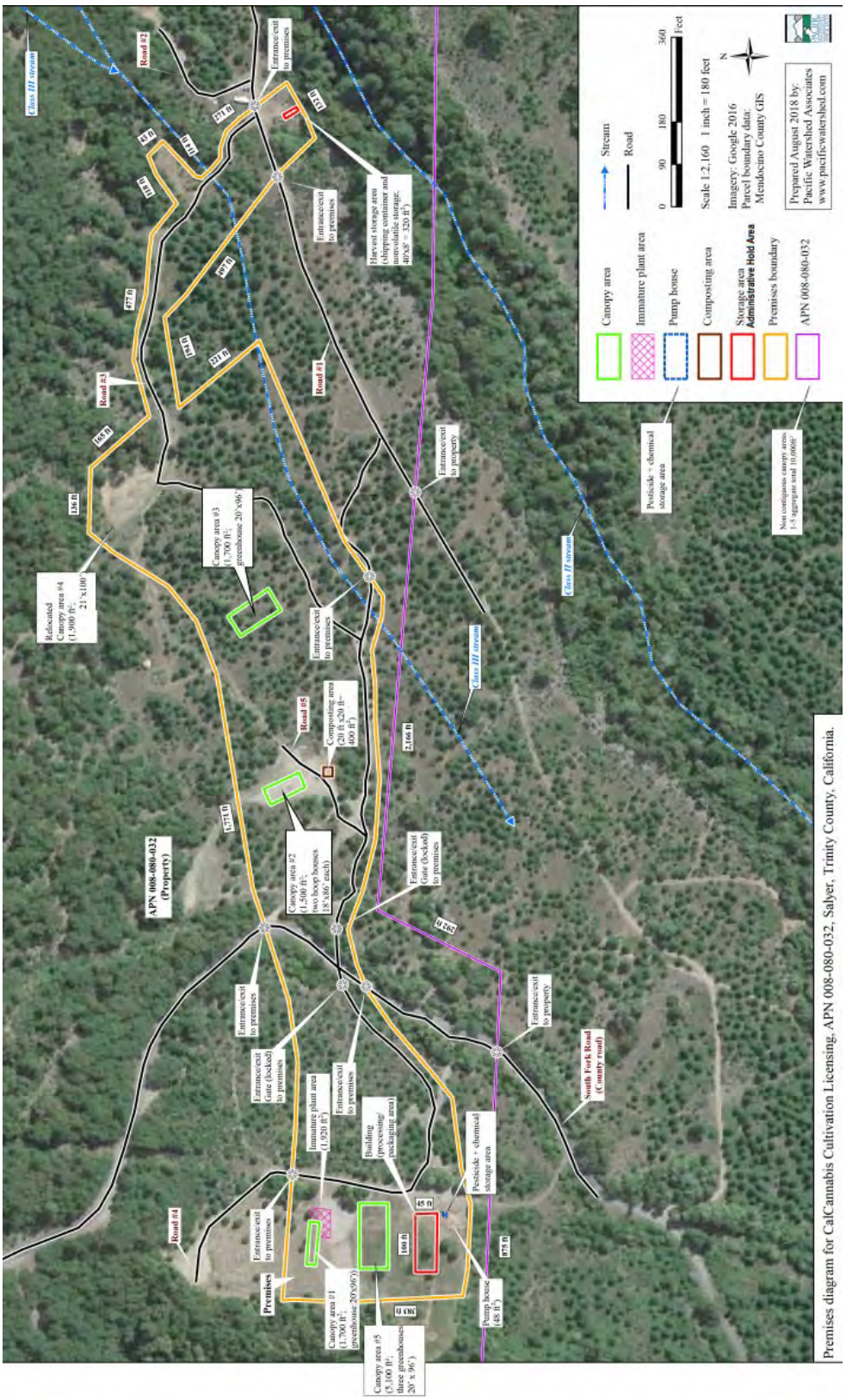
United States Fish and Wildlife Service (USFWS). 2011. Revised Recovery Plan for the Northern Spotted Owl (Strix occidentalis caurina). U.S. Fish and Wildlife Service, Portland, Oregon. Xvi + 258 pp.

Ward, J. P., B. R. Noon, R. J. Gutierrez. 1998. Habitat Selection by Northern Spotted Owls: The Consequences of Prey Selection and Distribution. *The Condor*. 100: pp 79-92.

Wiens, J. D., G. A. Anthony, E. D. Forsman. 2014. Competitive interactions and resource partitioning between northern spotted owls and barred owls in western Oregon. *Wildlife Monographs*. Vol. 185; Is. 1, pp. 1-50.

Figures A-L

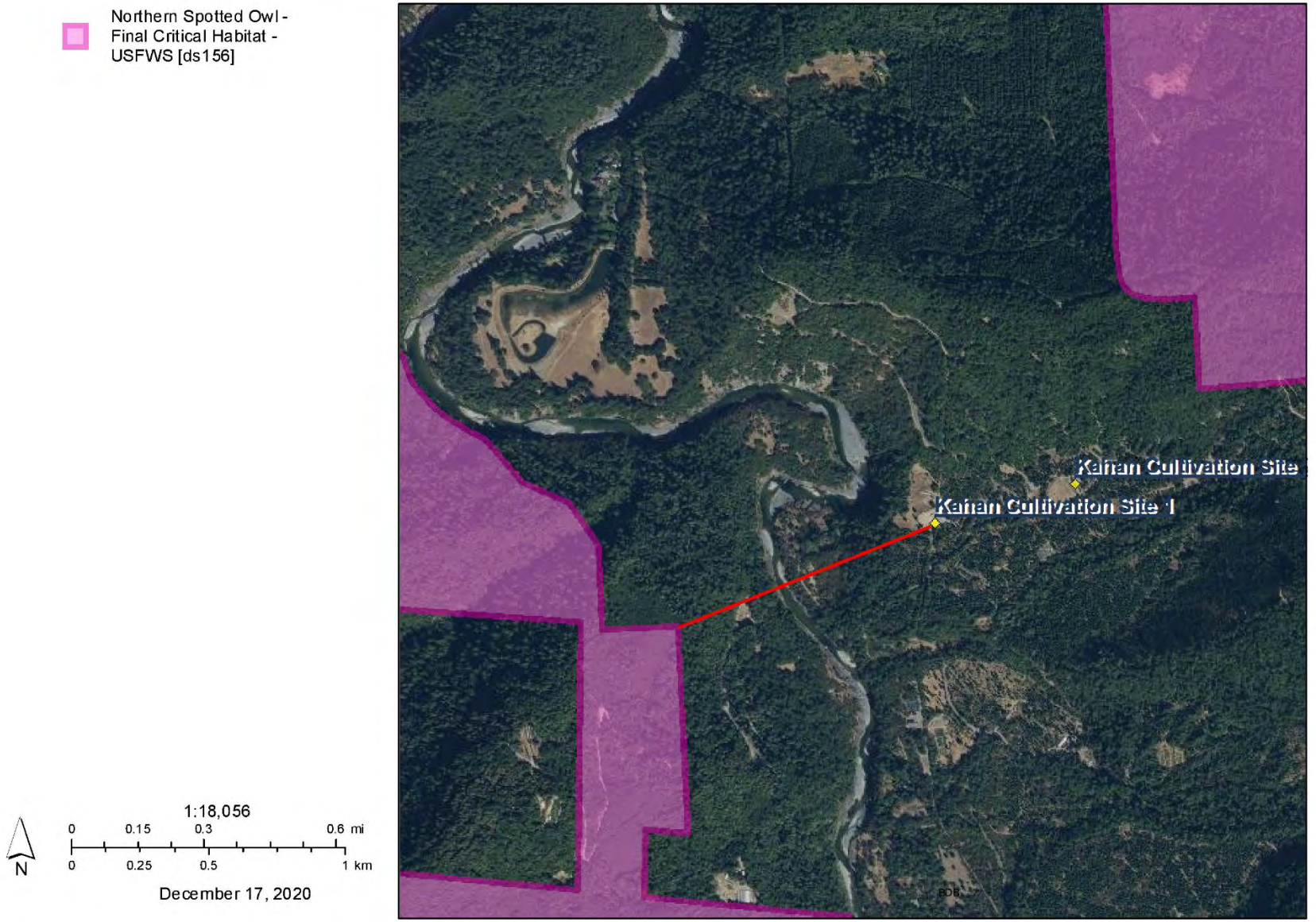
A. Kahan/VGF Property Photo Parcel Map with Cultivation Sites



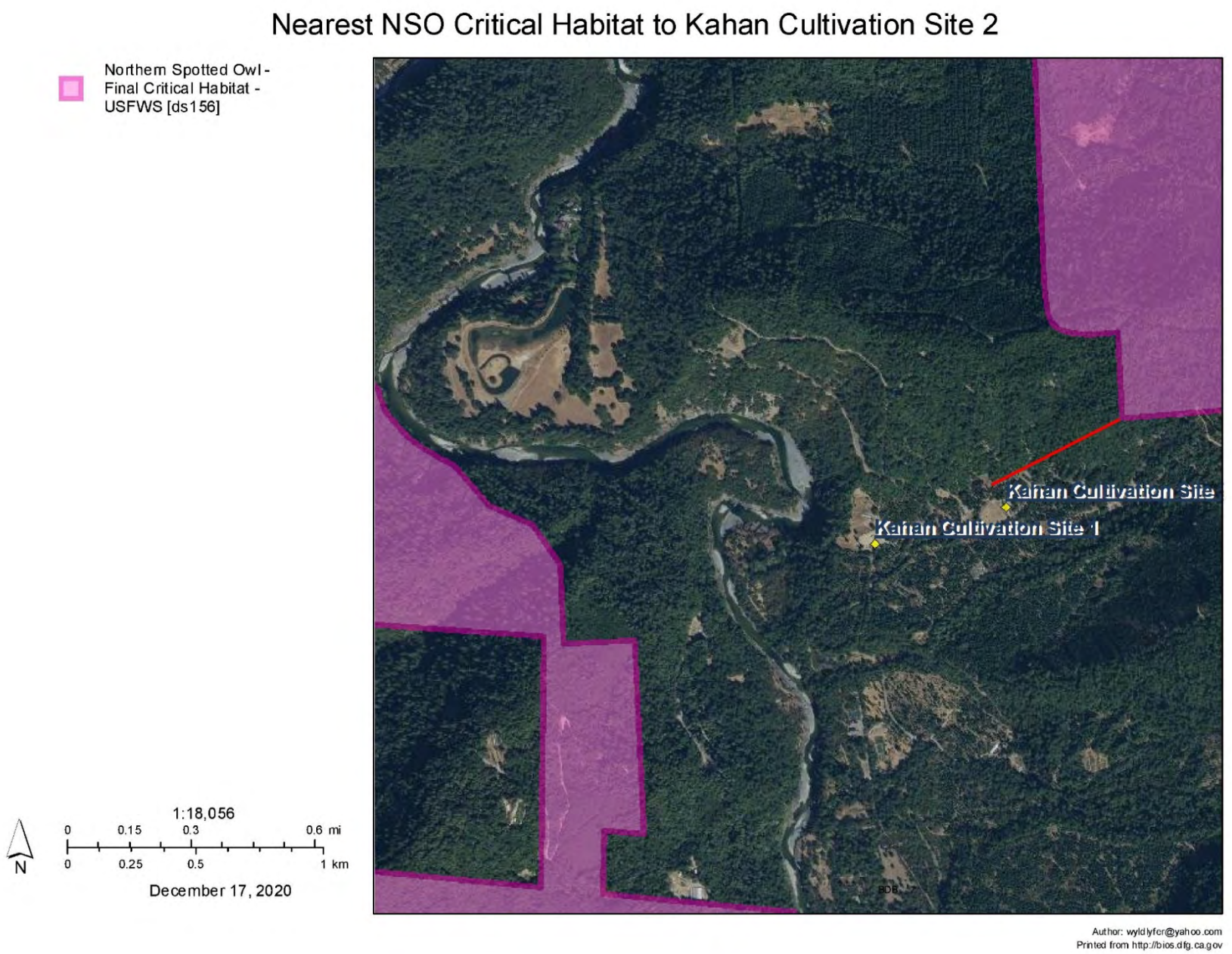
B. Premises Map for Kahan/VGF Property (Courtesy Pacific Watershed Affiliates)

C. Nearest NSO Critical Habitat to Kahan/VGF Cultivation Site 1 (~ 0.45 miles)

Nearest NSO Critical Habitat To Kahan Cultivation Site 1

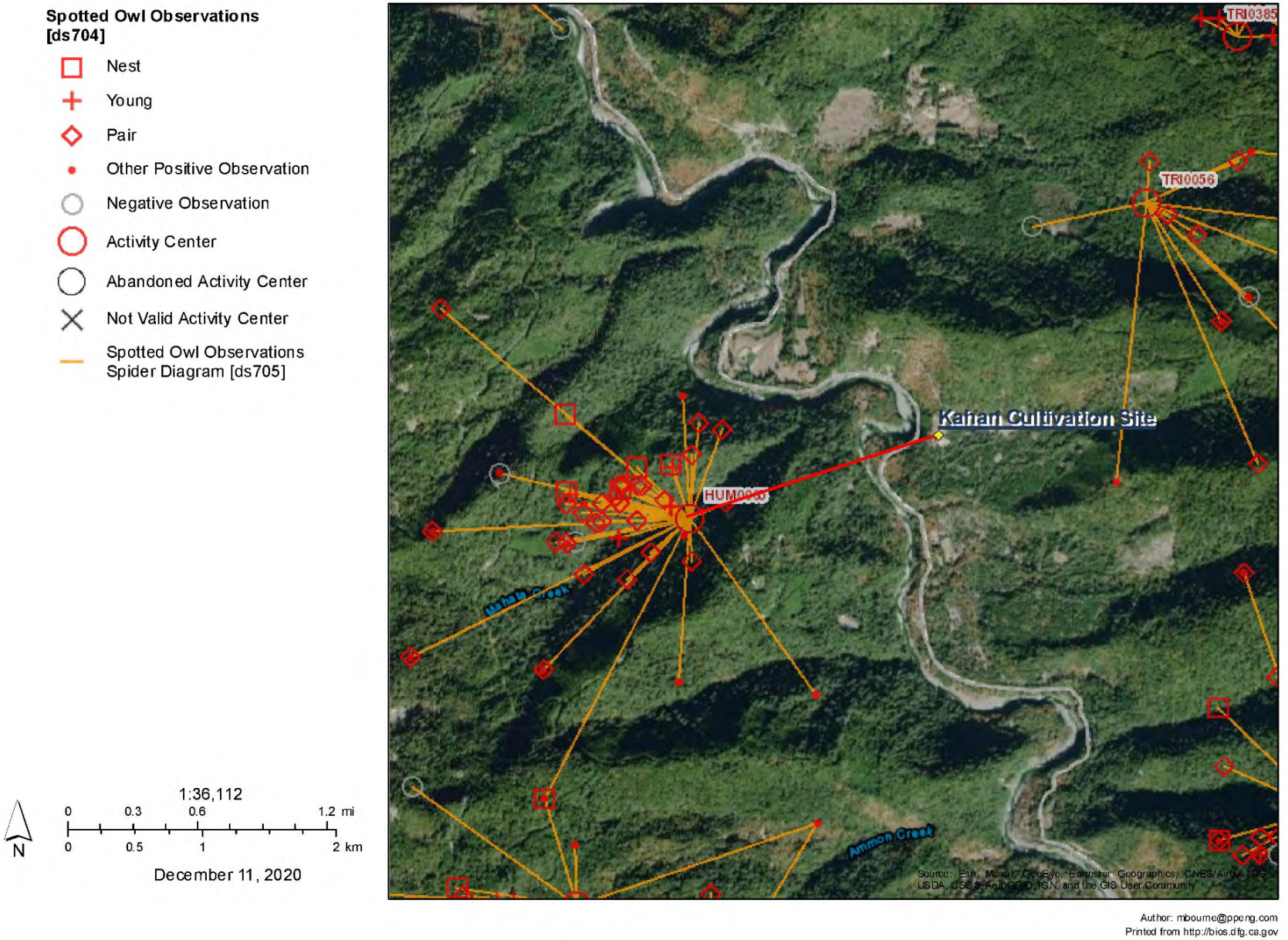


D. Nearest NSO Critical Habitat to Kahan/VGF Cultivation Site 2 (~ 0.26 miles)

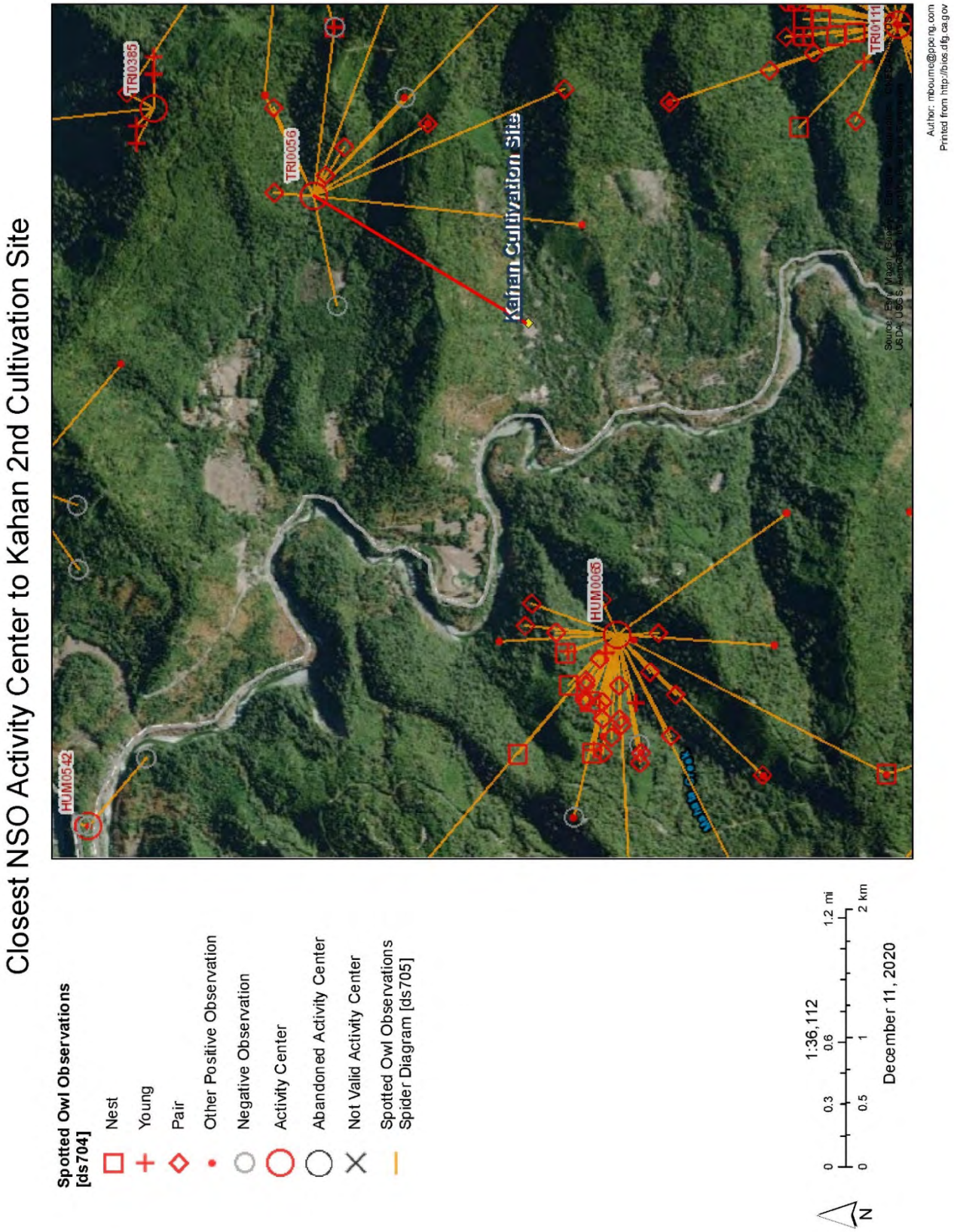


E. Nearest NSO Activity Center to Kahan/VGF Cultivation Site 1 (~ 0.92 miles)

Nearest NSO to Kahan Property (~ .92 miles)

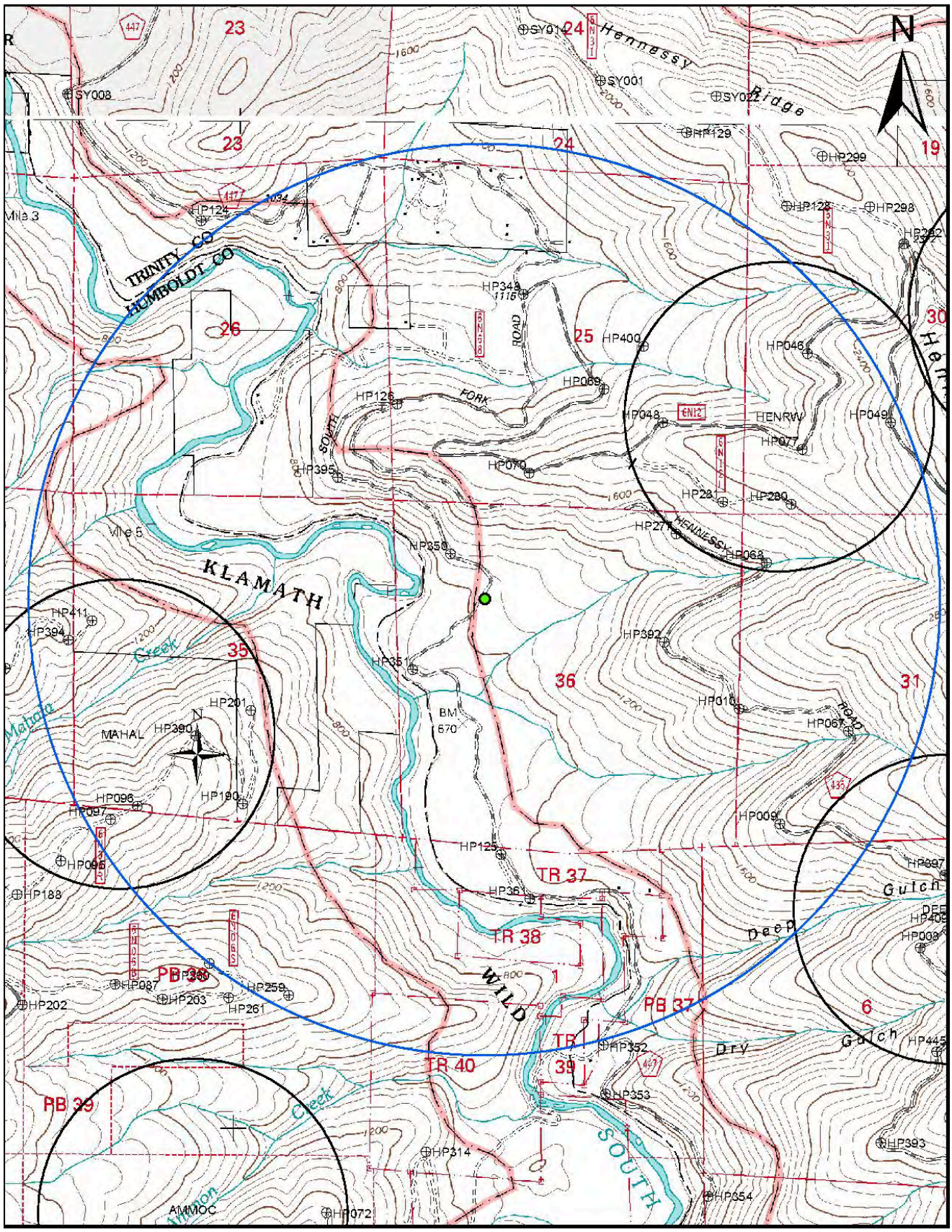


Author: mbourne@ppeng.com
Printed from http://bios.dfg.ca.gov



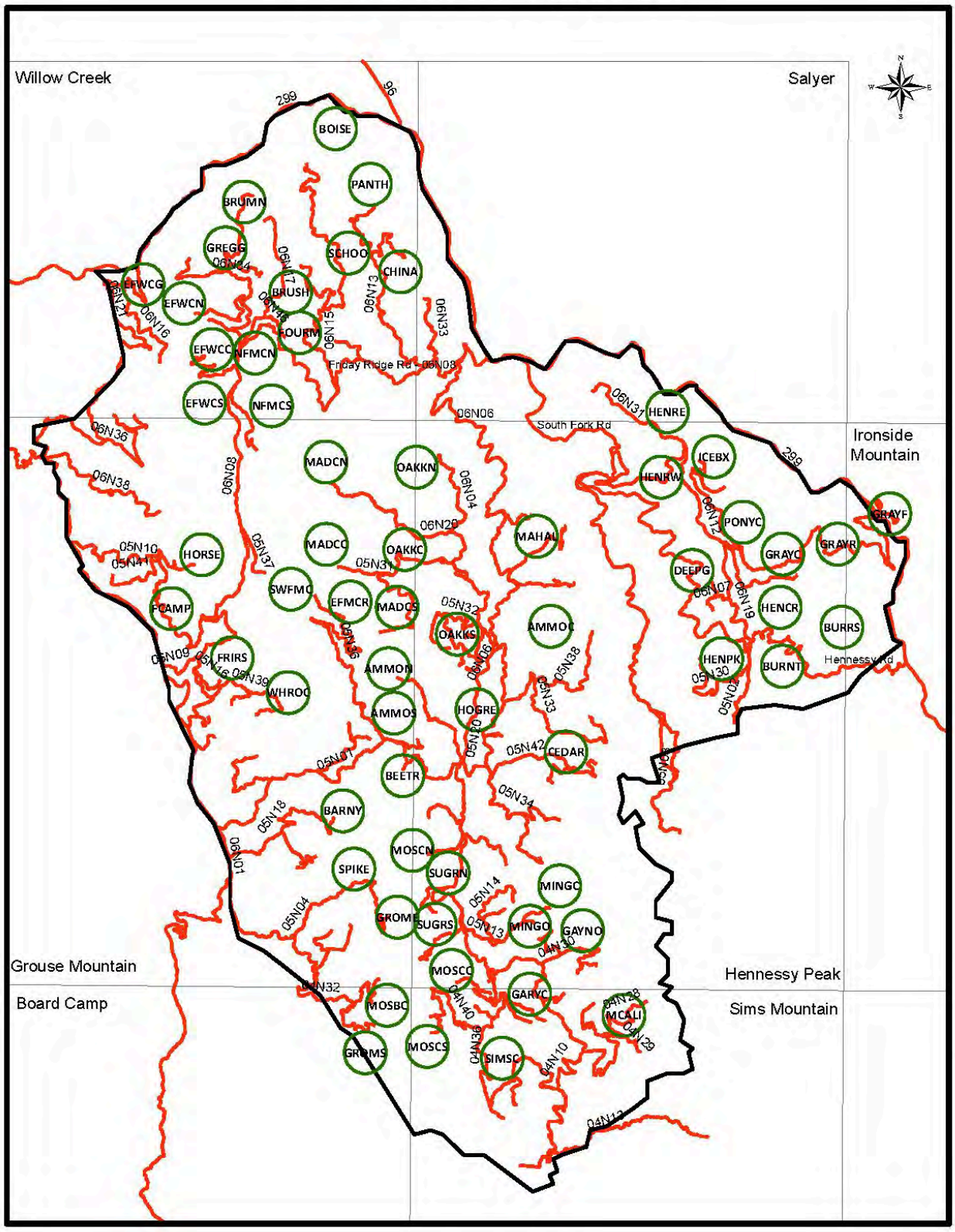
F. Nearest NSO Activity Center to Kahan/VGF Cultivation Site 2 (~ 1.0 miles)

G. 1.3 Mile NSO Impact Buffer Photo Map Surrounding Kahan/VGF Property

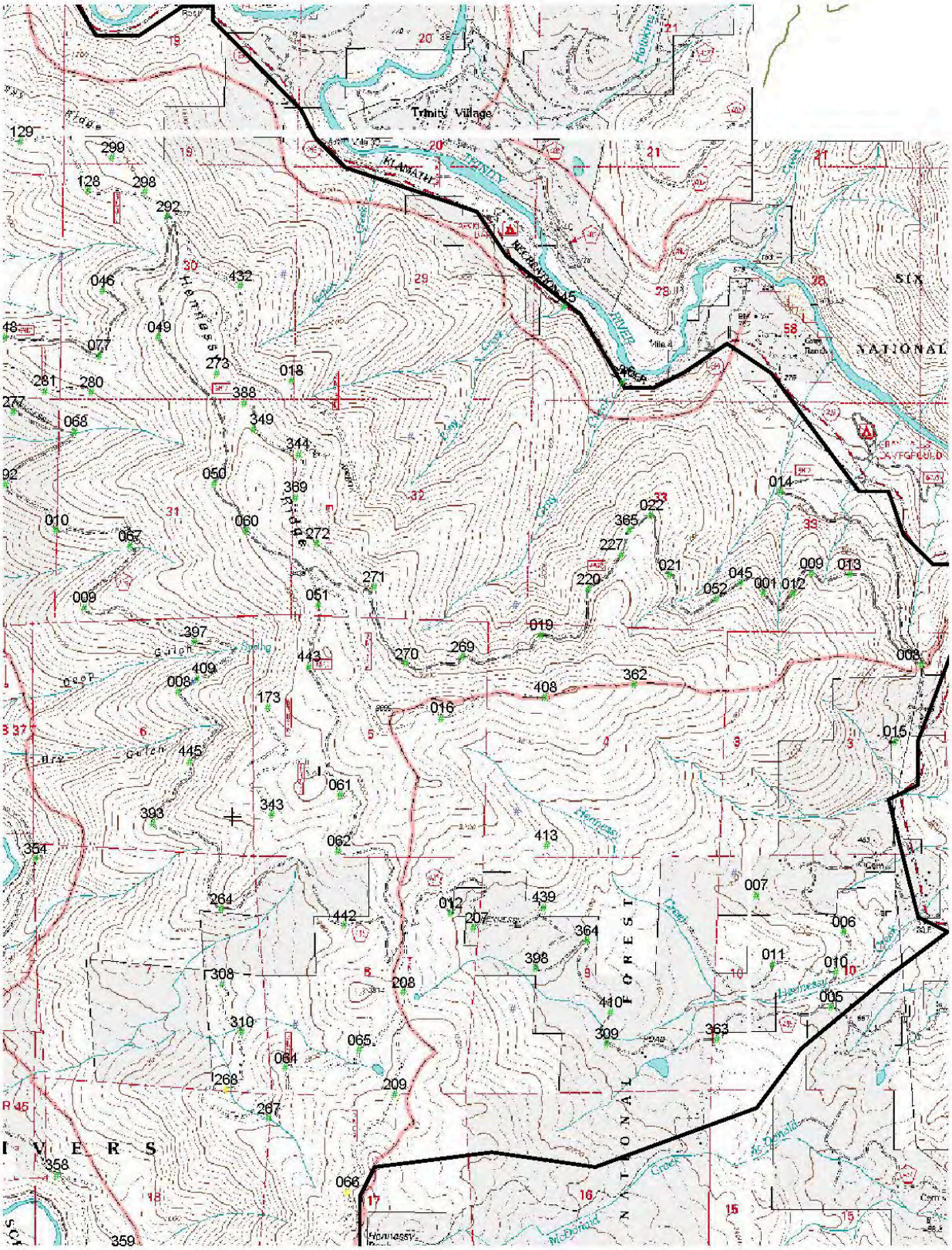


H. 1.3 Mile NSO Impact Buffer Topo Map Surrounding Kahan/VGF Property

Willow Creek Study Area



I. WCSA Overview Map



J. WCSA NSO Call Points Along Hennessey Ridge

Re: NSO data

From: Peter Carlson (pcarlson@colostate.edu)

To: obrien_biological@yahoo.com

Cc: alan.b.franklin@usda.gov; arex@colostate.edu

Date: Thursday, November 5, 2020, 12:48 PM PST

Hi Brit,
We do survey those sites annually, and they have both been vacant of NSO recently. TRI0056 (Hennessey Ridge West) has been vacant for many years (since 2002). HUM0065 (Mahala Creek) last had a pair of NSO in 2017 and has been vacant for 3 years. We have detected barred owls in both areas. I don't think there would be any occupied NSO sites nearby, but if you have a map of the project area to share I can check on that. If you need any details on our results for those 2 sites let me know, but the agencies typically accept the status that they are vacant based on our long term monitoring.

As a reminder, we do ask that no consulting surveys be conducted within our study area to avoid extra calling; we are willing to share any data needed from our survey effort and do plan to survey next year. That includes areas outside of established NSO sites, which we also survey to some extent. I've attached a map of the WCSA boundary, with roads included, for reference.

It has been a challenging year but fortunately we have been able to continue our work. I hope you are doing well too.
Peter

Peter Carlson
Research Associate
Colorado State University
Dept. of Fish, Wildlife and Conservation Biology
field office: 530-629-9208
cell: 707-499-7706

On Wed, Nov 4, 2020 at 9:09 AM william obrien <obrien_biological@yahoo.com> wrote:

> Hi Pete,
>
> My name is Brit O'Brien, I'm a consulting biologist in Eureka. I know we've met previously at the annual NSO meeting in Korbel. I hope all is well with you in this challenging time we're in.
> I'm reaching out to you in the hope that you may have some recent NSO data on some AC's along the south fork Trinity. Specifically, TRI0056 or HUM0065. Any data from these sites, or anything nearby, that you could share would be mighty useful, as we have a nearby client, and we are trying to establish a baseline of data.
> I very much appreciate your time and efforts, and all the best for 2021.
> Thanks,
>
> Brit O'Brien
> O'Brien Biological Consultants
> Eureka, CA
> 707.845.6627
>
> Sent from my iPhone

K. Email from Peter Carlson Regarding Willow Creek Study Area NSO Effort

L. Aerial and Ground Photos of Kahan/VGF Property

1.0 View East of Property

2.0 View Southeast from Property

3.0 View South from Property

4.0 View Southwest from Property

5.0 View West of Property

6.0 View Northwest from Property (South Fork Road)

7.0 View North from Property (Hennessey Road)

8.0 View Northeast from Property

9.0 Kahan/VGF Cultivation Site 1

10.0 Kahan/VGF Cultivation Site 2

11.0 Irrigation Pond at Eastern End of Property

12.0 Mature Forest Along Class III Creek

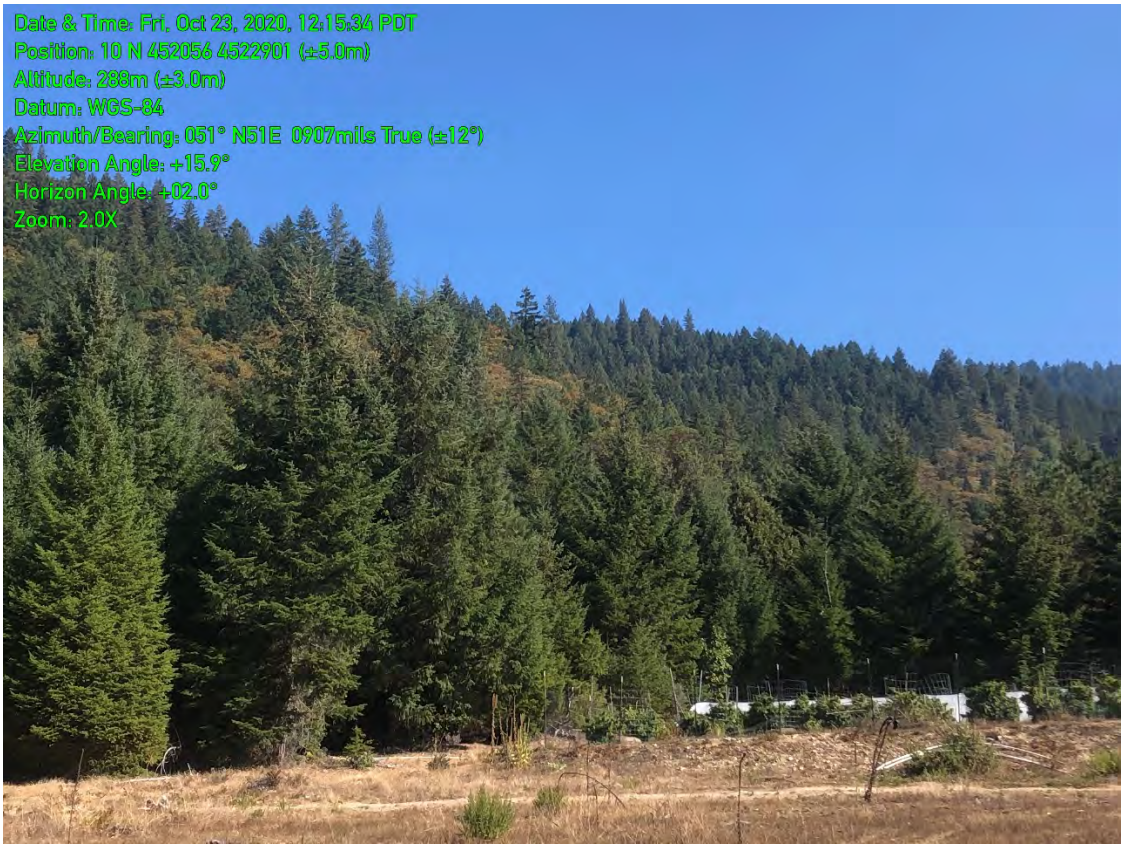
13.0 Riparian Forest Upstream from Pond Site

14.0 Riparian Forest Downstream from Pond Site

15.0 Greenhouses at Site 1

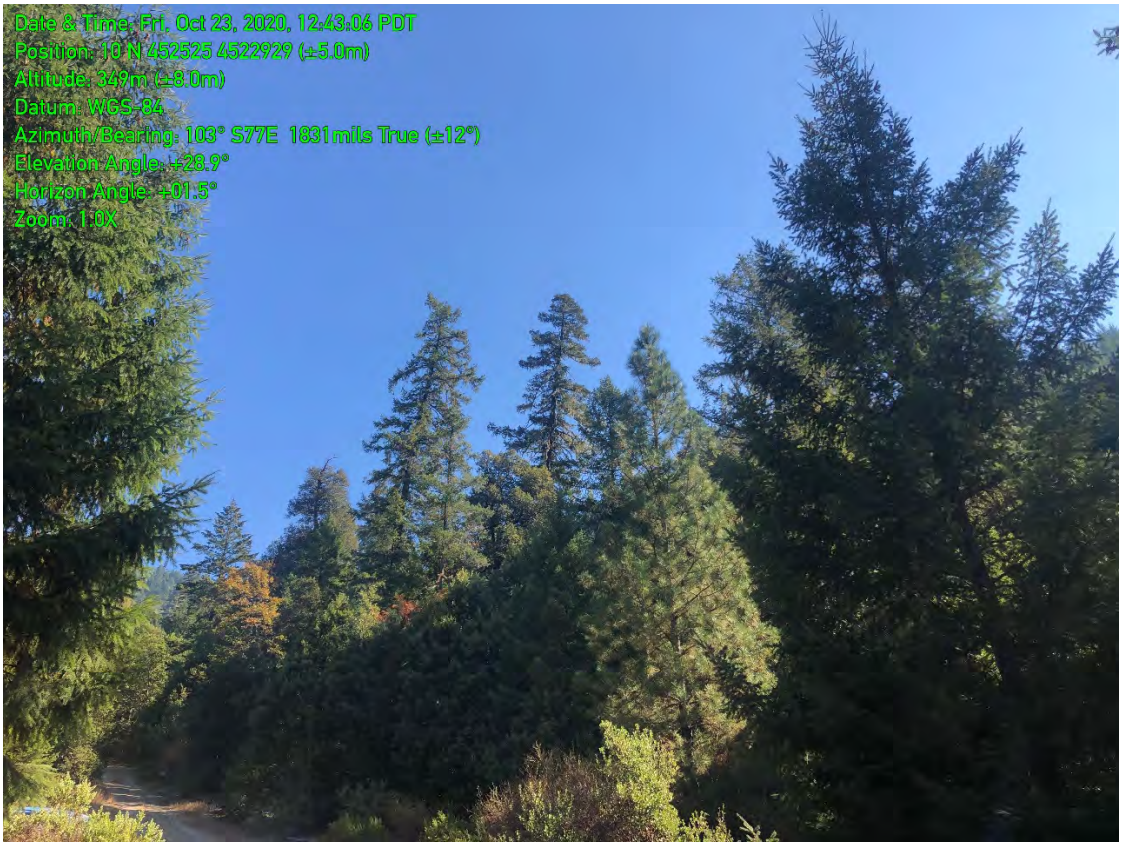

16.0 Habitat Adjacent to Cultivation Site 1

17.0 Greenhouse at Site 2



18.0 Habitat Adjacent to Cultivation Site 2

19.0 Habitat Adjacent to Cultivation Site 2



20.0 Mature Douglas Firs Along Creek Across from Pond Site

Appendix B

BIOLOGICAL RESOURCE ASSESSMENT

for
5200 Lower Southfork Rd.
Trinity County
APN: 008-080-32-000

Special Status Species Definitions
October 2021

Appendix B

Species Listing Status Definitions

All information in this Appendix can be found at…
"RareFind Field Descriptions." *RareFind Field Descriptions*, California Department of Fish and Wildlife, 2019, map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm.

1) **California Rare Plant Rank** - The *California Rare Plant Rank* status applies to plants only. The *California Rare Plant Ranks* are a ranking system originally developed by the California Native Plant Society (CNPS) to better define and categorize rarity in California's flora. These ranks were previously known as the CNPS lists but were renamed to the *California Rare Plant Ranks* to better reflect the joint effort among the CNPS, the CNDDB, and a wide range of botanical experts, who work together to assign a rarity ranking. All plants tracked by the CNDDB are assigned to a *California Rare Plant Rank* category. These categories are:

CA Rare Plant Rank	Description
1A	Plants presumed extinct in California and rare/extinct elsewhere
1B.1	Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
1B.2	Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
1B.3	Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California
2A	Plants presumed extirpated in California, but more common elsewhere
2B.1	Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
2B.2	Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
2B.3	Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
3.1	Plants about which we need more information; seriously threatened in California
3.2	Plants about which we need more information; fairly threatened in California

3.3	Plants about which we need more information; not very threatened in California
4.1	Plants of limited distribution; seriously threatened in California
4.2	Plants of limited distribution; fairly threatened in California
4.3	Plants of limited distribution; not very threatened in California

2) **Federal Listing Status** - The United States legal status under the Federal Endangered Species Act (ESA).

Listing Status	Description
Endangered	The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
Threatened	The classification provided to an animal or plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.
Proposed Endangered	The classification provided to an animal or plant that is proposed for federal listing as Endangered in the Federal Register under Section 4 of the Endangered Species Act.
Proposed Threatened	The classification provided to an animal or plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.
Candidate	The classification provided to an animal or plant that has been studied by the United States Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the Federal Endangered and Threatened species list.
None	The plant or animal has no federal status.
Delisted	The plant or animal was previously listed as Endangered or Threatened, but is no longer listed on the Federal Endangered and Threatened species list.

3) Global Rank - The *Global Rank* is a reflection of the overall condition and imperilment of an element throughout its global range. Both the Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heaviest on the rarity factors. The *Global Ranks* are assigned by NatureServe in coordination with the appropriate state program(s) where the element occurs.

Global Rank	Definition
GX	**Presumed Extinct** (species) — Not located despite intensive searches and virtually no likelihood of rediscovery. **Extinct** (ecological communities and systems) — Eliminated throughout its range, with no restoration potential due to extinction of dominant or characteristic taxa and/or elimination of the sites and ecological processes on which the type depends.
GH	**Possibly Extinct** — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty. Examples of such evidence include 1) that a species has not been documented in approximately 20–40 years despite some searching or some evidence of significant habitat loss or degradation; 2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
G1	**Critically Imperiled** — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2	**Imperiled** — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3	**Vulnerable** — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4	**Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5	**Secure** — Common; widespread and abundant.
GNR	**Unranked** — Global rank not yet assessed.
GU	**Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
G#G#	**Range Rank** — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.
G#T#	**Infraspecific Taxon** — The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' Global Rank. Rules for assigning T-ranks follow the same principles as those for Global Ranks. However, a T-rank cannot

	imply the subspecies or variety is more abundant than the species. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety.
?	**Qualifier: Inexact Numeric Rank** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.
Q	**Qualifier: Questionable Taxonomy** — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.
C	**Qualifier: Captive or Cultivated Only** — The taxon or community at present is presumed or possibly extinct or eliminated in the wild across its entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside its native range, or as a reintroduced population or ecosystem restoration, not yet established.

4) **Other Status** - The *Other Status* field provides additional status listings for an element, including the Department of Fish and Wildlife's Fully Protected and Species of Special Concern designations.

Organization	Status Listing
AFS - American Fisheries Society	
	EN – Endangered
	TH – Threatened
	VU – Vulnerable
BLM - Bureau of Land Management	S – Sensitive
CDF - California Department of Forestry & Fire Protection	S – Sensitive
CDFW - California Department of Fish & Wildlife	
	FP - Fully Protected
	SSC - Species of Special Concern
	WL - Watch List
IUCN - International Union for the Conservation of Nature	
	CD - Conservation Dependent
	CR - Critically Endangered
	DD - Data Deficient

	EN - Endangered
	EW - Extinct in the Wild
	EX – Extinct
	LC - Least Concern
	NE - Not Evaluated
	NT - Near Threatened
	VU - Vulnerable
MMC - Marine Mammal Commission	SSC - Species of Special Concern
NABCI - North American Bird Conservation Initiative	RWL - Red Watch List
	YWL - Yellow Watch List
NMFS - National Marine Fisheries Service	SC - Species of Concern
SB - Seed Banked	BerrySB - Berry Seed Bank
	CRES - San Diego Zoo CRES Native Gene Seed Bank
	KewBG - Kew Royal Botanic Gardens
	RSABG - Rancho Santa Ana Botanic Garden
	SBBG - Santa Barbara Botanic Garden
	UCBBG - UC Berkeley Botanical Garden
	USDA - US Dept of Agriculture
USFS - United States Forest Service	S – Sensitive
USFWS - United States Fish & Wildlife Service	BCC - Birds of Conservation Concern
WBWG - Western Bat Working Group	H - High Priority
	MH - Medium-High Priority
	M - Medium Priority
	LM - Low-Medium Priority
XERCES - Xerces Society	CI - Critically Imperiled

	IM – Imperiled
	VU - Vulnerable
	DD - Data Deficient

5) State Listing Status - The State of California legal status.

Listing Status	Description
Endangered	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
Threatened	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
Rare	The classification provided to a native plant species, subspecies, or variety when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. This designation stems from the Native Plant Protection Act of 1977.
None	The plant or animal has no state status.
Delisted	The plant or animal was previously listed as Endangered, Threatened or Rare but is no longer listed by the State of California.
Candidate Endangered	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered species.
Candidate Threatened	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of threatened species.

Appendix C
Northern Spotted Owl (NSO) Habitat and Impact Assessment (OBC, 2020)

O'Brien Biological Consultants

2407 Frank St.
Eureka, CA 95501

Brit O'Brien 707-845-6627
obrien_biological@yahoo.com

A Northern Spotted Owl (NSO) Habitat and Impact Assessment for Cannabis Operations for the Patrick Kahan Property
5200 South Fork Road
APN # 008-080-32-00

By
Brit O'Brien
O'Brien Biological Consultants (OBC)
2407 Frank St.
Eureka, CA 95501

Introduction

Purpose and Need

This Northern Spotted Owl (NSO) Habitat Assessment has been prepared for the Kahan property, 5200 South Fork Road, Salyer, CA, as a supplemental document for a commercial cannabis cultivation permit.

This assessment attempts to summarize potential impacts to NSO foraging and roosting/nesting habitats from cannabis cultivation at the Kahan property, as well as to provide a baseline of NSO data relevant to the site and for any potential expansion of a designated area.

Through obligations of environmental review under the California Environmental Quality Act (CEQA), permits are legally required by both the State of California and Trinity County for all cannabis cultivation activities. Trinity County regulates commercial cannabis cultivation on this property through the draft Cannabis Program (Ordinance No. 315-823) which requires permit applicants to assess all potentially significant impacts to biological resources from proposed cannabis cultivation operations.
The County has recently certified (Dec. 2020) the final Environmental Impact Report for their Cannabis Program. The following adopted performance standards in the EIR will provide the required mitigations for NSO:

- If the area of proposed new development activities (e.g., any application for commercial cannabis operations or renewal of an existing licensed cultivation site that is planning to expand its Designated Area) is within suitable habitat for northern spotted owl (e.g., coniferous forest), and is within 1.3 miles (average species home range) of a known occurrence of northern spotted owl, as determined by a qualified biologist familiar with the species and protocol, and approved by the County, the following measures shall be followed:

- Prior to removal of any trees, or ground-disturbing activities adjacent or within suitable nesting, roosting, or foraging habitat (e.g., forest clearings) for spotted owl, a qualified biologist approved by the County and familiar with the life history of the northern spotted owl shall conduct preconstruction surveys for nests within a 1.3-mile buffer around the site as described in Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls (USFWS 2012). Surveys shall take place between March 1 and August 31. Three complete surveys spaced at least 7 days apart must be completed by June 30. Six complete surveys over the course of 2 years must be completed to determine presence or absence of northern spotted owl.

- If northern spotted owls are determined to be absent 1.3 miles from the site, then further mitigation is not required.

- If northern spotted owls are determined to be present within 1.3 miles of the site, then it is presumed that habitat removal could cause harm to northern spotted owl populations in the area and could result in direct take of northern spotted owls. If northern spotted owls are determined to be present within 1.3 miles of the site, proposed cultivation activities, including expansion of an existing Designated Area, will not be permitted.

The Kahan operation previously received a 2020 Conditional Use permit for the existing cannabis operation.

Project Sites and NSO Assessment Area

The NSO assessment area is defined as the entire property of approximately 143 acres under ownership of Patrick Kahan (APN 008-080-32-00) and including a 1.3-mile disturbance impact buffer around his parcel (Figure F). The project sites are defined, for the purposes of this NSO report only, as the two cannabis operation sites at the western (Site #1) and central (Site #2) portions of the parcel (Figure A). Site 1 has power provided by PG&E for cannabis operations. Power needs at site 2 are provided by portable generators. South Fork road crosses the western portion of the property, between sites 1 and 2. The property is zoned as Timberland Production. A map showing the operation premises outline and cultivation areas is included (Figure B)

Site Visit

On October 23rd and December 14th, 2020, Brit O'Brien of O'Brien Biological Consultants (OBC) surveyed forest habitat and photographed the Kahan and surrounding properties to assess potential impacts to NSO habitat from existing cannabis operations. The forested habitat on the property is classified as Pacific Douglas Fir forest, consisting mostly of Douglas Fir (*Pseudatsuga menziesii*), Madrone (*Arbutus menziesii*), Tanoak (*Notholithocarpus densiflorus*), Canyon Live Oak (*Quercus chrysolepis*), and Big-leaf Maple (*Acer macrophyllus*) (Mayer and Laudenslayer 1988). The open cultivation sites consist of annual and perennial grasslands.

The property was logged ~ 30 years ago, the majority of the fir habitat there is young and not structurally complex enough to support nesting/roosting NSO. There are some large mature fir trees along the unnamed Class III creek on the southeastern edge of the property, but that linear habitat is highly likely too small and exposed to support nesting NSO (Figure A, Photos 12-14). However, forest clearings on the Kahan and adjacent properties likely provide potentially good foraging areas for NSO.

Northern Spotted Owl

Natural History and Distribution

The Northern spotted owl (*Strix occidentalis caurina*) is one of three subspecies of Spotted owl residing in the forests of Western North America. This species currently ranges from Southwest British Columbia through the Cascade mountains and coastal ranges of Washington and Oregon and into the interior and coastal ranges of Northern California, down to Marin county.

Northern Spotted Owls (NSO) use a variety of forest types, including Douglas fir, Shasta Red fir, Western Hemlock, Ponderosa Pine, Coast Redwood, and other mixed conifer and conifer/hardwood (Gutierrez, 1996). Northern Spotted owls are typically associated with mature or unlogged forest, or younger forest with structural deformities or residual older trees, for nesting and roosting. These habitats often have a multi-layered canopy, large diameter overstory trees, and a high canopy closure, > 60% (Thomas *et al* 1990, Gutierrez 1996). Large snags and canopy deformities are important forest components for breeding, providing platforms and cavities for nesting (Thomas *et al*, 1990).

Northern spotted owl pairs often re-use nesting sites from year to year, provided the habitat remains intact and relatively undisturbed (Guttierrez, 1996). The female provides incubation and brooding for the young, while the male generally hunts for the family. Young generally disperse by August or September.

Primary prey for the spotted owl in California includes the Dusky-footed woodrat, Humboldt's (Northern) flying squirrel, Red tree vole, terrestrial voles, and deer mice (Ward 1998). These prey species comprise approximately 90% of spotted owl diets (Ward 1998).

NSO home ranges generally increase in size the farther north they are located, although habitat loss and fragmentation, prey distribution, and forest type clearly have an effect on home range size. In Northern California, estimated spotted owl pair home ranges varied from 1,692 acres (Willow Creek) to 3,314 acres (Ukonom), with a median annual home range of ~ 3,000 acres (USFWS 2011).

Mature or unlogged forests are important aspects of NSO home ranges. The minimum amount of mature or old-growth forest found in owl home ranges on Forest Service lands was 367 acres; the median amount was 800 acres (Thomas *et al*, 1990).

In managed (harvested) redwood forests of northwest California, forest stands in home ranges of NSO had a mean of 97 hectares (~240 acres) of forest aged 46-60 years (Folliard *et al,* 2000).

A similar mean of 94 ha (232 acres) of mature or old growth forest was found in 200 ha plots centered on NSO nest sites in northwest California (Hunter *et al*, 1995). The researchers also found less forest fragmentation at nest site plots versus random plots in the same study.

Carey *et al*, found that northern spotted owl home ranges in Southwest Oregon contained between 27% to 75% old-growth forest.

Primary threats to NSO survival and reproduction are the continuing loss and fragmentation of habitat due to logging, severe-wildfire threats from climate change, and displacement/mortality from the expanding west coast Barred Owl population (Wiens *et al*, 2014; Long and Wolfe, 2019).

This data and other research have shown that NSO exhibit high nesting/roosting site fidelity, as long as the habitat remains relatively intact and undisturbed. The data also reveals that NSO strongly prefer home ranges with significant quantities of mature or unlogged forest for nesting/roosting habitat, especially within interior forests. Some studies have indicated that younger (45-60 yrs.), managed coastal redwood forests may also support NSO breeding, primarily from higher woodrat prey availability in these forests.

Willow Creek Study Area

Colorado State University is conducting a long-term NSO demographic study in the Willow Creek Study Area (WCSA), which conducts surveys and monitoring of established NSO Activity Centers and all associated potential habitat (Figures I-J). Peter Carlson is the local research associate for the project, and he has provided data for the two NSO Activity Centers within the Kahan 1.3-mile impact footprint, TRI0056 and HUM0065, which are both ~ 1-mile from the Kahan cultivation sites. According to his data, TRI0056 has not been occupied by NSO since 2002, and HUM0065 last recorded a pair of non-nesting NSO in 2017. HUM0065 has not had any detections at all since 2017, but both sites have now recorded barred owl presence in 2020 (Figures E-G).

This demographic study will continue to monitor the ~ 61 previously established Activity Centers in the WCSA in 2021 and beyond. Twelve of these sites are located in Trinity County, shown on the western portion of the WCSA map (Figure I). Mr. Carlson has asked that any biologists or NSO researchers who may need current year information on these owl sites to please contact him for any data, and to please not conduct any NSO surveys within the WCSA, so as to not confound any data they collect for the demographic study. A recent confirmation email with Mr. Carlson is included, by permission (Figure k).

Noise Disturbance to NSO

As no forest habitat removal is planned for the Kahan property for current or proposed expanded cannabis operations, the likely only potentially significant source of impacts to NSO from operations at the site are from disturbance from sound or light effects, or from direct line-of-sight visual disturbance.

Noise alone has the potential to disturb spotted owl nesting habitat and has been a source of increasing concern for agencies (CalFire, CDFW, USFWS) responsible for the management of spotted owl habitats (USFWS 2006). When sound disturbance levels cause a disruption to behaviors that may affect the reproduction or survival of threatened or endangered species, harassment, or 'take', of the species may occur (USFWS 2006). A disruption to these behaviors is defined as:

An adult or juvenile is flushed from a nest during the incubation, brooding, or fledging period, that potentially results in egg failure or reduced juvenile survival.

An adult abandons a feeding attempt of a dependent juvenile for an entire daily feeding period, that potentially results in malnutrition or starvation of the young.

An adult delays feeding attempts of dependent birds on multiple occasions during the breeding season, potentially reducing the growth or likelihood of survival of young.

The Arcata Fish and Wildlife Office (AFWO) has provided a 2006 guidance document regarding disturbance from noise-generated activities, "Estimating the effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California."
The document provides probable disturbance distances to nesting owls, based on factors of ambient sound levels at the site, the use of specific equipment, and visual line-of-sight distance to nests.
The ten different 'scenarios' provided in the document are assessed with both low and moderate ambient background sound levels, as well as increasing levels of development/construction impacts, to cover the full range of forest management activities likely to occur.

A review of the document suggests that scenario 7 under appendix B, the "Northern Spotted Owl Sound and Visual Harassment Decision Support Tool", best reflects the likely ambient sound conditions at the Kahan sites and the equipment likely to be used during cultivation.
Under this scenario, "The existing environment is characterized by the medium to very low levels of existing ambient sound associated with human activities, and is typified by small power tools, light vehicular traffic moving at slow speeds, recreational activities, and many urban and rural residential and commercial activities" (USFWS 2006).
The typical action-generated sounds from site preparation and cultivation operations under this scenario could include "very large construction equipment, large gas-powered engines, ATVs and small trucks at high speed or on rough surfaces, and the largest chain saws" as well as "larger construction equipment such as the largest backhoes, large dozers, hoe-rams, large trucks using jake brakes at moderate to high speeds".
This scenario would be applicable to timber harvest operations involving the felling of small to moderate sized trees (such as thinning operations) in typical forest conditions near small roads and similar sources of human-generated sound. Scenario 7 closely approximates or exceeds both the likely ambient

background noise at the site, as well as the potential action-generated noise from any site clearing, development, or cultivation activities (USFWS 2006).
Under scenario 7, the predicted auditory disturbance distance that may impact nesting Spotted Owls is 200 meters, with either low or moderate ambient background sounds at the site. The visual line-of sight disturbance distance for nests is a maximum of 100 meters, or less if a view of the nest is obscured (USFWS 2006).

Light Disturbance to NSO

The following standards have been adopted by Trinity County to meet lighting and glare requirements for state and county cannabis licensing.

- All lighting associated with the operation shall be downcast, shielded and/or screened to keep light from emanating off-site or into the sky (Section 315-843[6][l]).

- Those cultivations using artificial lighting from mixed-light cultivations shall shield greenhouses so that little to no light escapes. Light shall not escape at a level that is visible from neighboring properties between sunset and sunrise (Section 315-843[6][m])

By implementing these standards, potential light and glare impacts would be reduced to less than significant for both project and cumulative conditions under the cannabis program. Under the existing CUP, the Kahan cannabis operations already meet the light and glare standards described above.

Discussion

Most of the mature forest on and surrounding the Kahan property has been recently logged, and the young age of the forest makes it highly likely unsuitable for nesting/roosting NSO.

Under current operations, and likely for any expanded cultivation areas, there would also remain significant open ground for NSO foraging on the parcel (Photos 6, 9-11).

The nearest critical habitat for the Northern spotted owl is approximately 0.45 miles to the west, and 0.26 miles to the east, (Figures C-D).

There are two NSO activity centers associated with the Kahan cultivation sites, HUM065 located 0.92 miles west of the parcel, and TRI056, 1.0 miles northeast of the parcel (Figures E-F). Both sites have recorded Barred owl presence in 2020. No NSO have been detected at either site, or anywhere within the 1.3-mile buffer since at least 2017.

There are current and future plans by the WCSA to monitor the sites and owl habitat within the 1.3-mile NSO buffer of the Kahan property.

An analysis of potential noise impacts at the Kahan sites indicates a likely disturbance distance of only 200 meters (1/8 mile) to any nesting NSO. Current operations at the site meet the current lighting and glare performance standards of the EIR.

The cannabis cultivation process at the Kahan property will be restricted to the existing roads and

cultivation sites. Forest habitat on and immediately surrounding the Kahan property is young, and no forested habitat removal is proposed under the current CUP permit. Any potential impacts to NSO within the assessment area are limited to noise disturbance from typical operations at the sites and from any traffic along South Fork road.

Based on NSO demographic and disturbance impact research, current and historical NSO and Barred owl survey information, and a review of forest conditions at and surrounding the cultivation sites, there is highly likely no probability of significant disturbance impacts to Northern Spotted owls at the Kahan property from existing cultivation activities. Any proposed expansion of Designated Areas is also unlikely to cause NSO disturbance by typical cultivation activities.

Recommendations

Northern Spotted owl survey data from the WCSA should be submitted annually to Trinity County Planning Dept. for NSO monitoring purposes.

As the WCSA will provide future NSO data, there should be no Northern Spotted owl surveys conducted specifically on behalf of the Kahan property cannabis project.

Any questions regarding this analysis or the data cited should be addressed to the author:

Brit O'Brien
Senior Biologist
O'Brien Biological Consultants
2407 Frank St.
Eureka, CA 95501
obrien_biological@yahoo.com

Literature Cited

Carey, A.B., J.A. Reid and S.P. Horton. 1990. Spotted Owl home range and habitat use in southern Oregon coast ranges. *Journal of Wildlife Management*, 54: pp. 11-17.

Clark, D. A., R. G. Anthony, and L. S. Andrews. 2013. Relationship between wildfire, salvage logging, and occupancy of nesting territories by northern spotted owls. *Journal of Wildlife Management* 77: 672– 688.

Folliard, L. B., Reese K. P., Diller L. V. 2000. Landscape Characteristics of Northern Spotted Owl Nest Sites in Managed Forests of Northwestern California. *Journal of Raptor Research*, 34 (2): pp. 75-84.

Forsman, Eric D., et al. Distribution and Biology of the Spotted Owl in Oregon. *Wildlife Monographs*, no. 87, 1984, pp. 3–64.

Gutiérrez, R.J. 1996. Biology and distribution of the northern spotted owl. *Studies in Avian Biology* 17:2–5.

Hunter, J.E., R.J. Gutierrez and A.B. Franklin. 1995. Habitat configuration around Spotted Owl sites in northwestern California. *Condor*. 97:684-693.

Long, L. L., Wolfe, J. D. 2019. Review of the effects of Barred Owls on Spotted Owls. *Journal of Wildlife Management*. 83(6): 1281-1296.

Mayer, K.E, and W.F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. California Dep. Of Forestry and Fire Protection, Pacific Southwest Forest and Range Experiment Station (Berkeley, Calif.).

Miller, G.S., R.J. Small and E.C. Meslow. 1997. Habitat selection by spotted owls during natal dispersal in western Oregon. *Journal of Wildlife Management* 61:140–150.

Thomas, J.W., E.D. Forsman, J.B. Lint, E.C. Meslow, B.R. Noon and J. Verner. 1990. A conservation strategy for the northern spotted owl. Interagency Scientific Committee to Address the Conservation of the Northern Spotted Owl. U.S. Forest Service, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, and U.S. National Park Service, Portland, Oregon.

United States Fish and Wildlife Service (USFWS). 1992. Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.

United States Fish and Wildlife Service (USFWS), Arcata, CA. 2006. Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California. July 26, 2006.

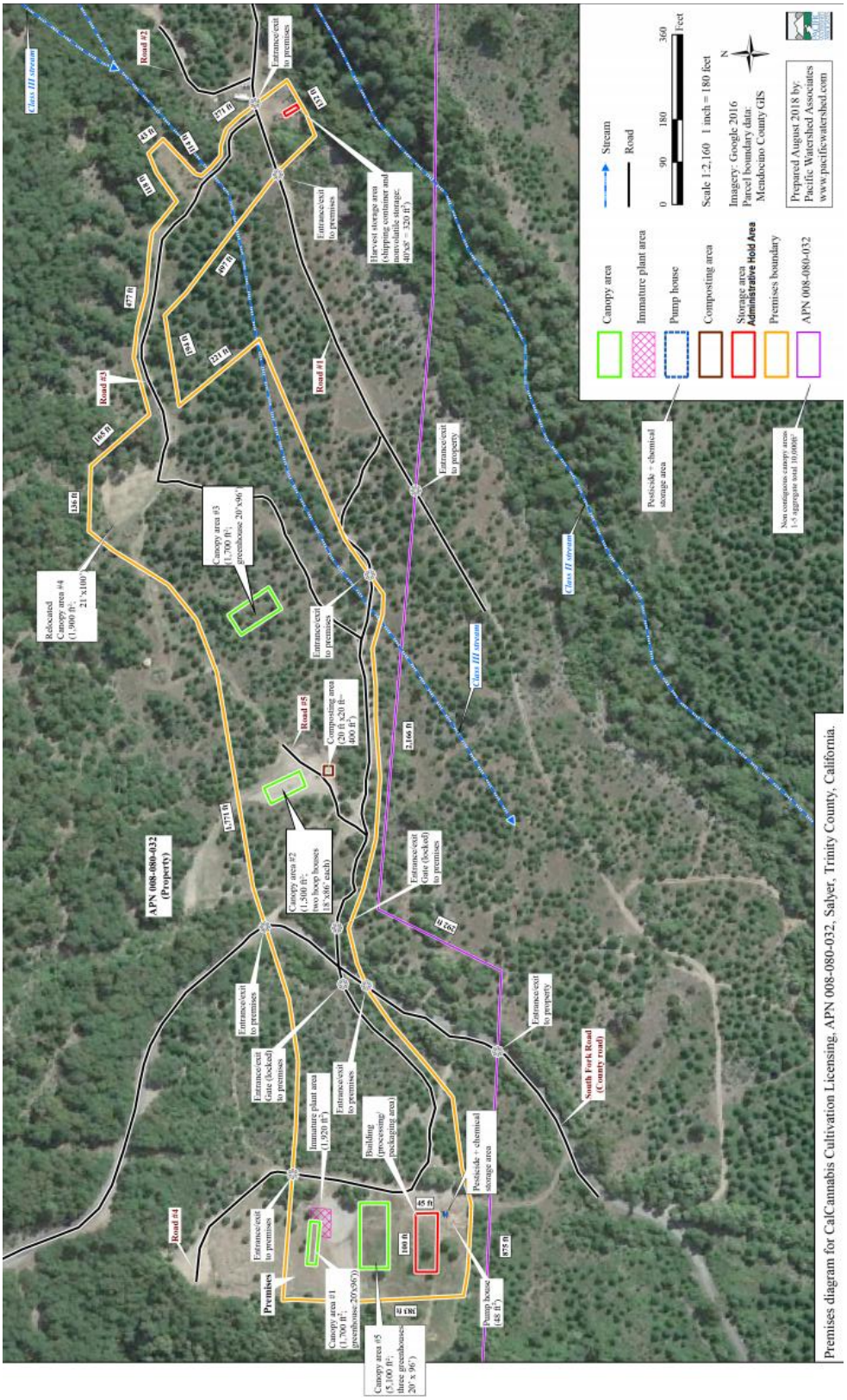
United States Fish and Wildlife Service (USFWS). 2011. Revised Recovery Plan for the Northern Spotted Owl (Strix occidentalis caurina). U.S. Fish and Wildlife Service, Portland, Oregon. Xvi + 258 pp.

Ward, J. P., B. R. Noon, R. J. Gutierrez. 1998. Habitat Selection by Northern Spotted Owls: The Consequences of Prey Selection and Distribution. *The Condor*. 100: pp 79-92.

Wiens, J. D., G. A. Anthony, E. D. Forsman. 2014. Competitive interactions and resource partitioning between northern spotted owls and barred owls in western Oregon. *Wildlife Monographs*. Vol. 185; Is. 1, pp. 1-50.

Figures A-L

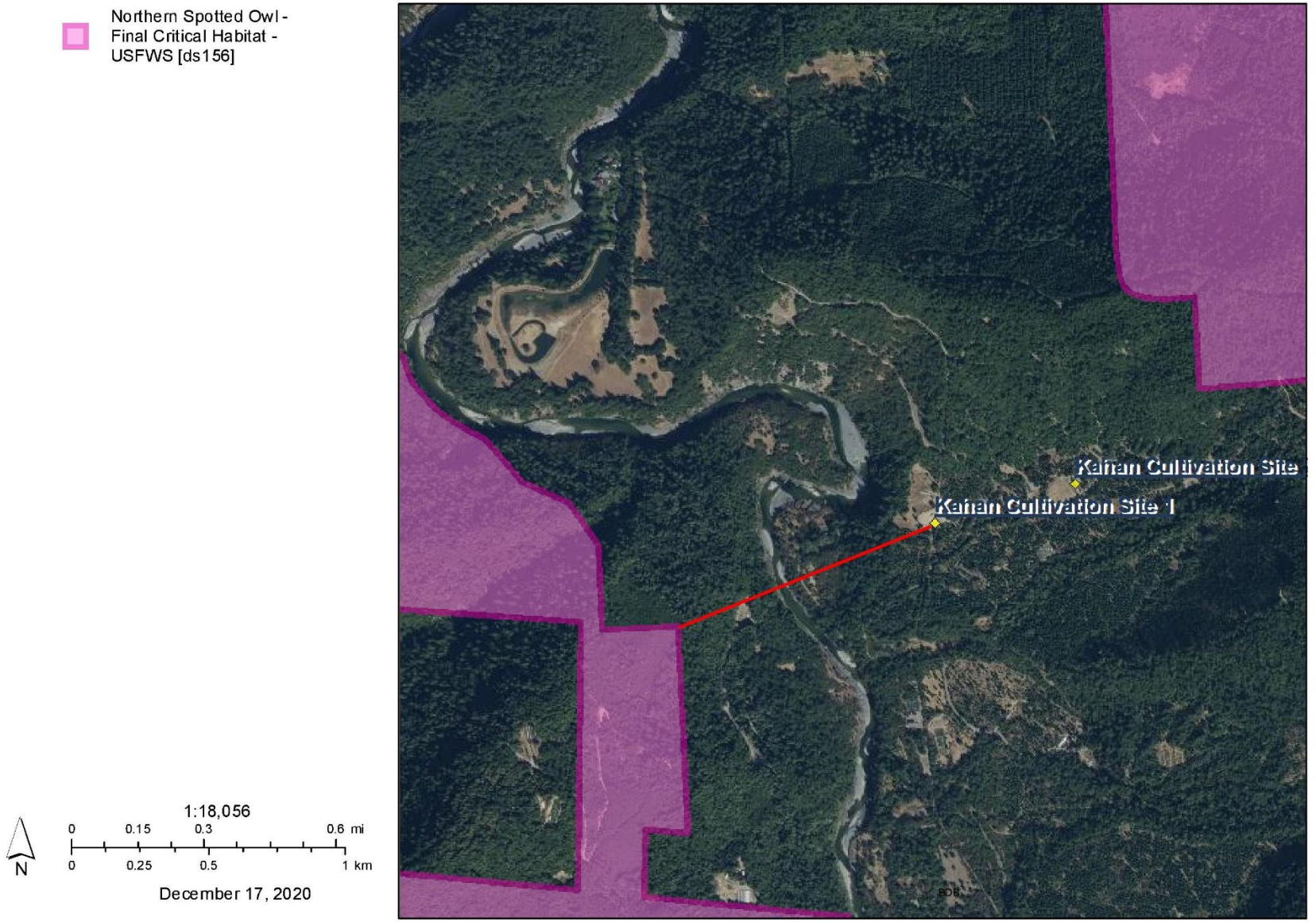
A. Kahan Property Photo Parcel Map with Cultivation Sites



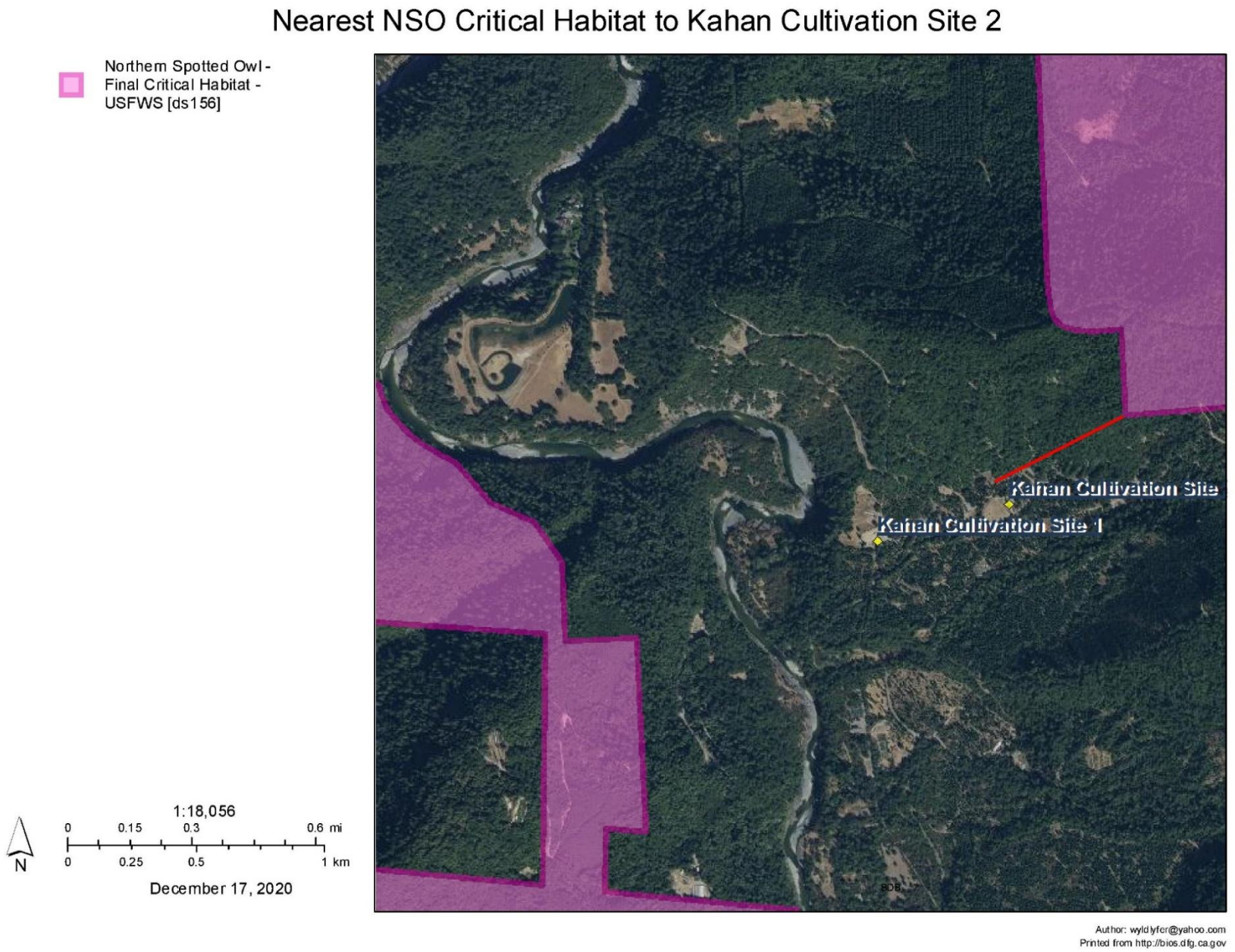
B. Premises Map for Kahan Property (Courtesy Pacific Watershed Affiliates)

C. Nearest NSO Critical Habitat to Kahan Cultivation Site 1 (~ 0.45 miles)

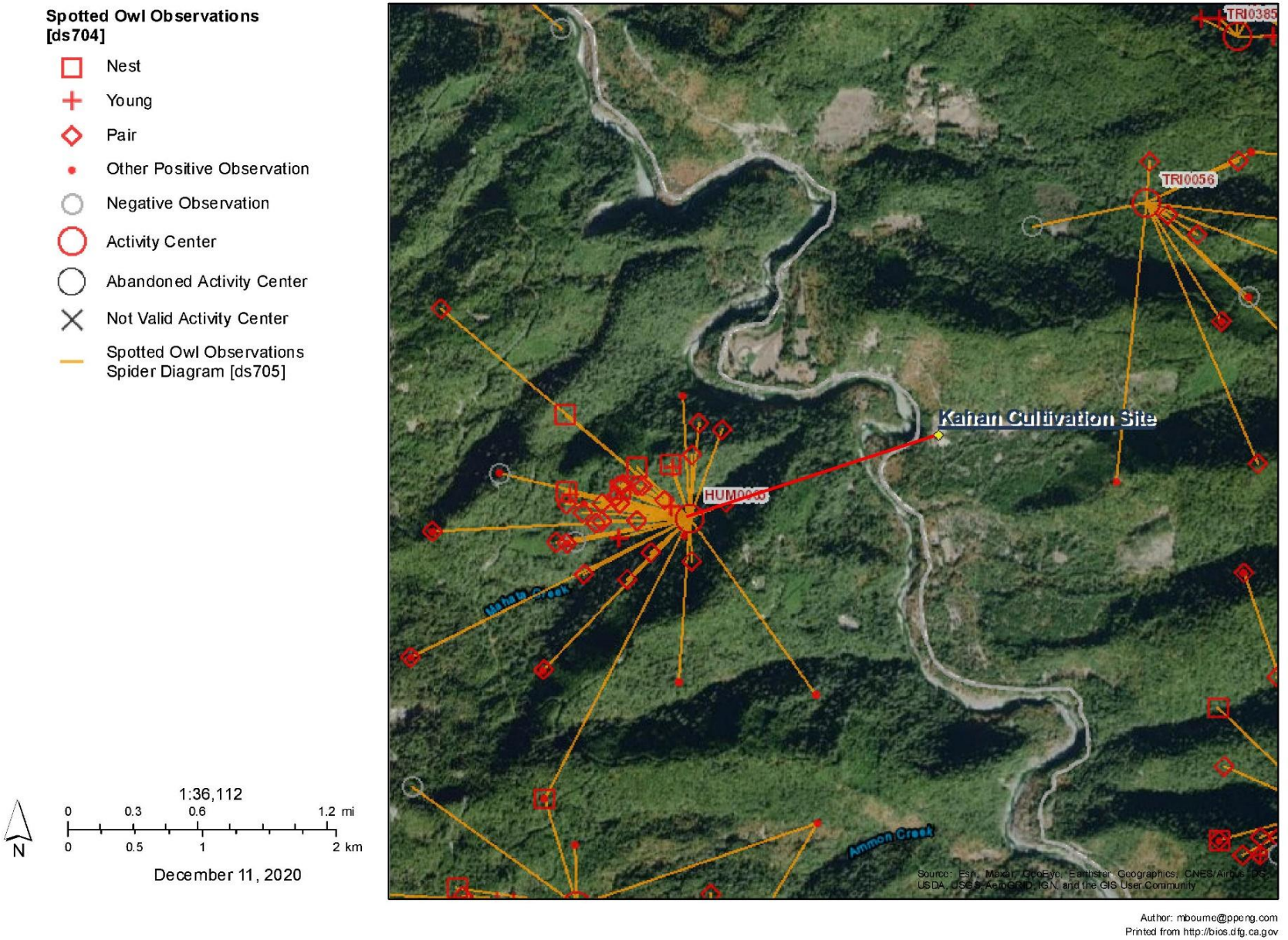
Nearest NSO Critical Habitat To Kahan Cultivation Site 1



D. Nearest NSO Critical Habitat to Kahan Cultivation Site 2 (~ 0.26 miles)



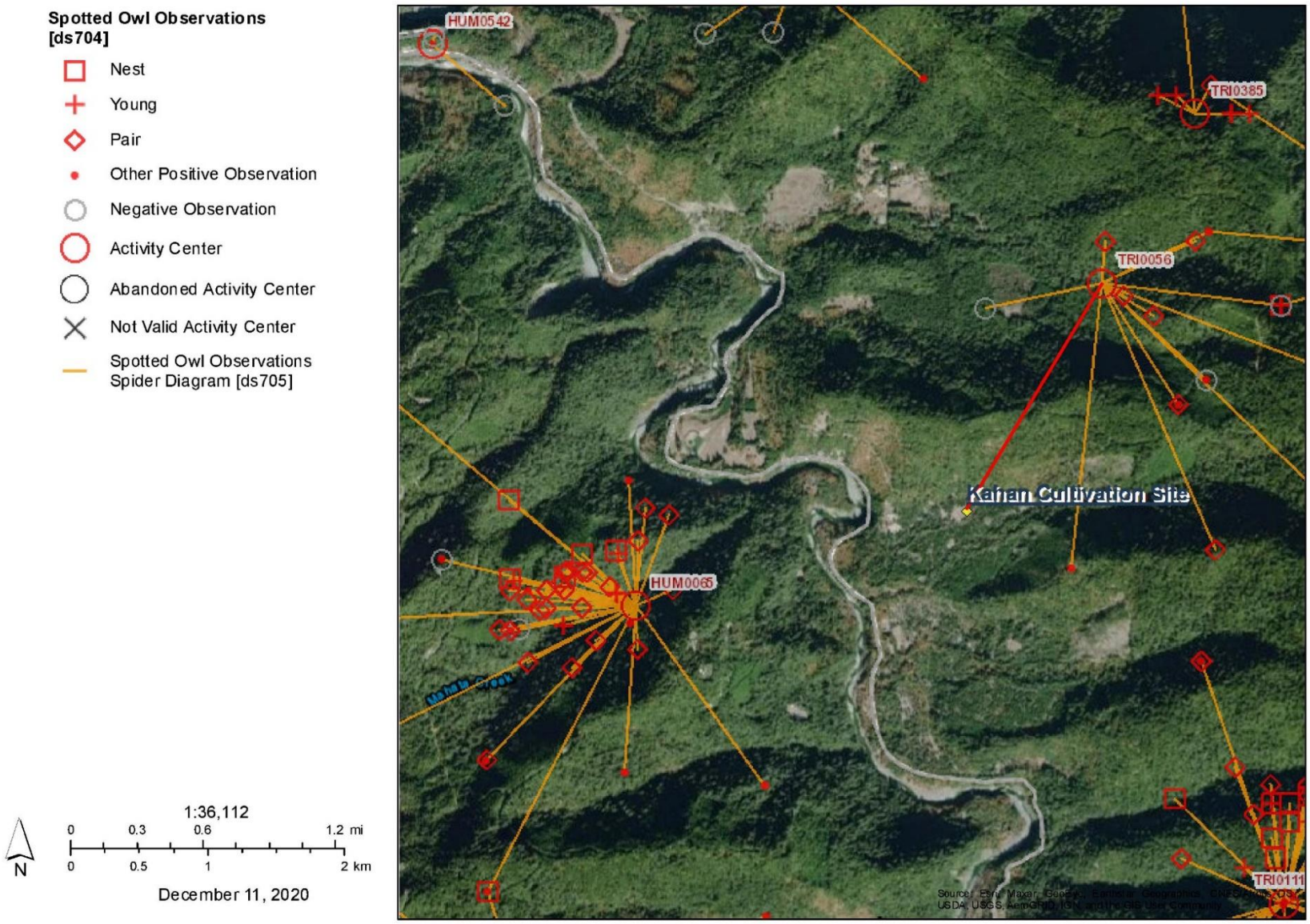
Nearest NSO to Kahan Property (~ .92 miles)



E. Nearest NSO Activity Center to Kahan Cultivation Site 1 (~ 0.92 miles)

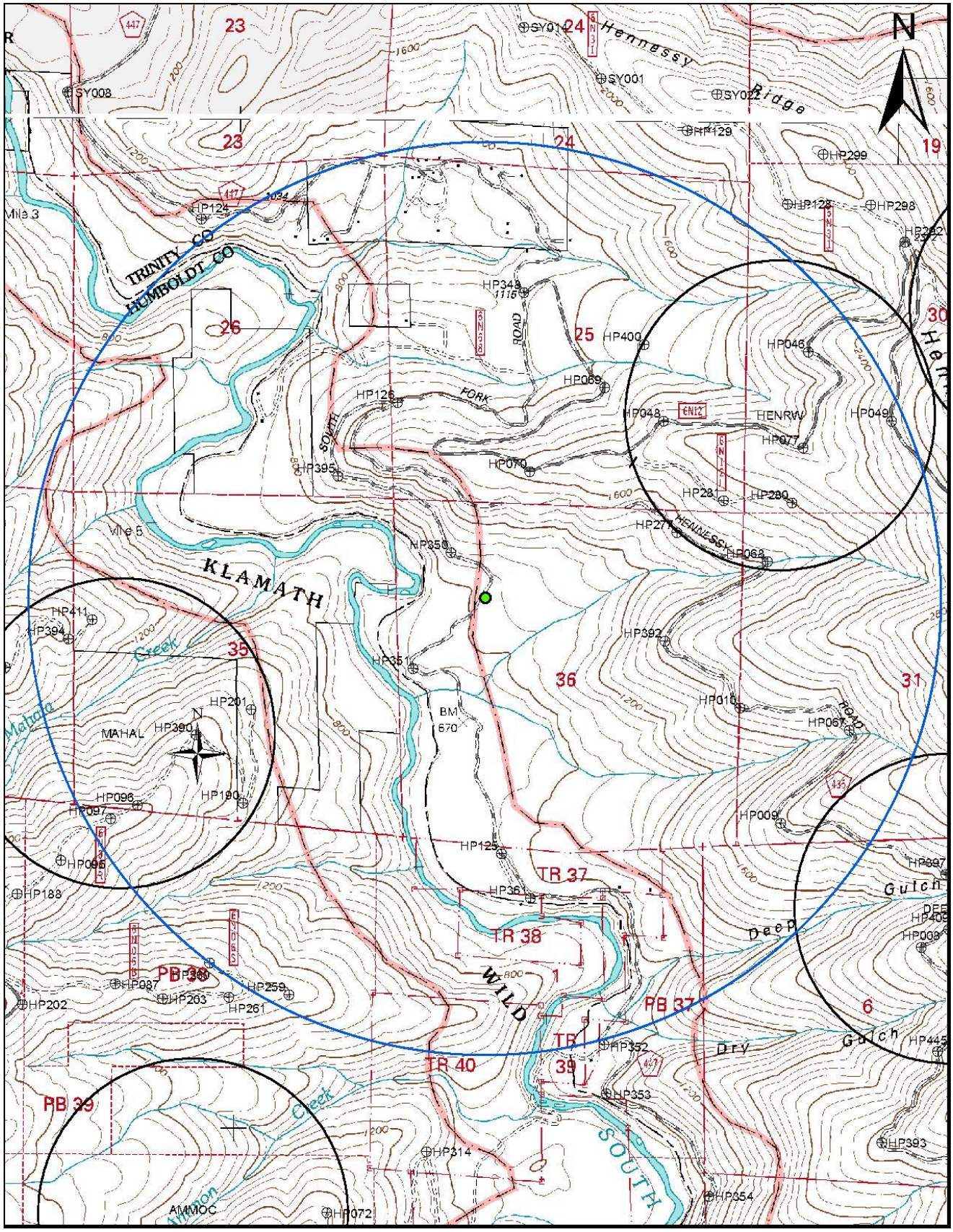
F. Nearest NSO Activity Center to Kahan Cultivation Site 2 (~ 1.0 miles)

Closest NSO Activity Center to Kahan 2nd Cultivation Site



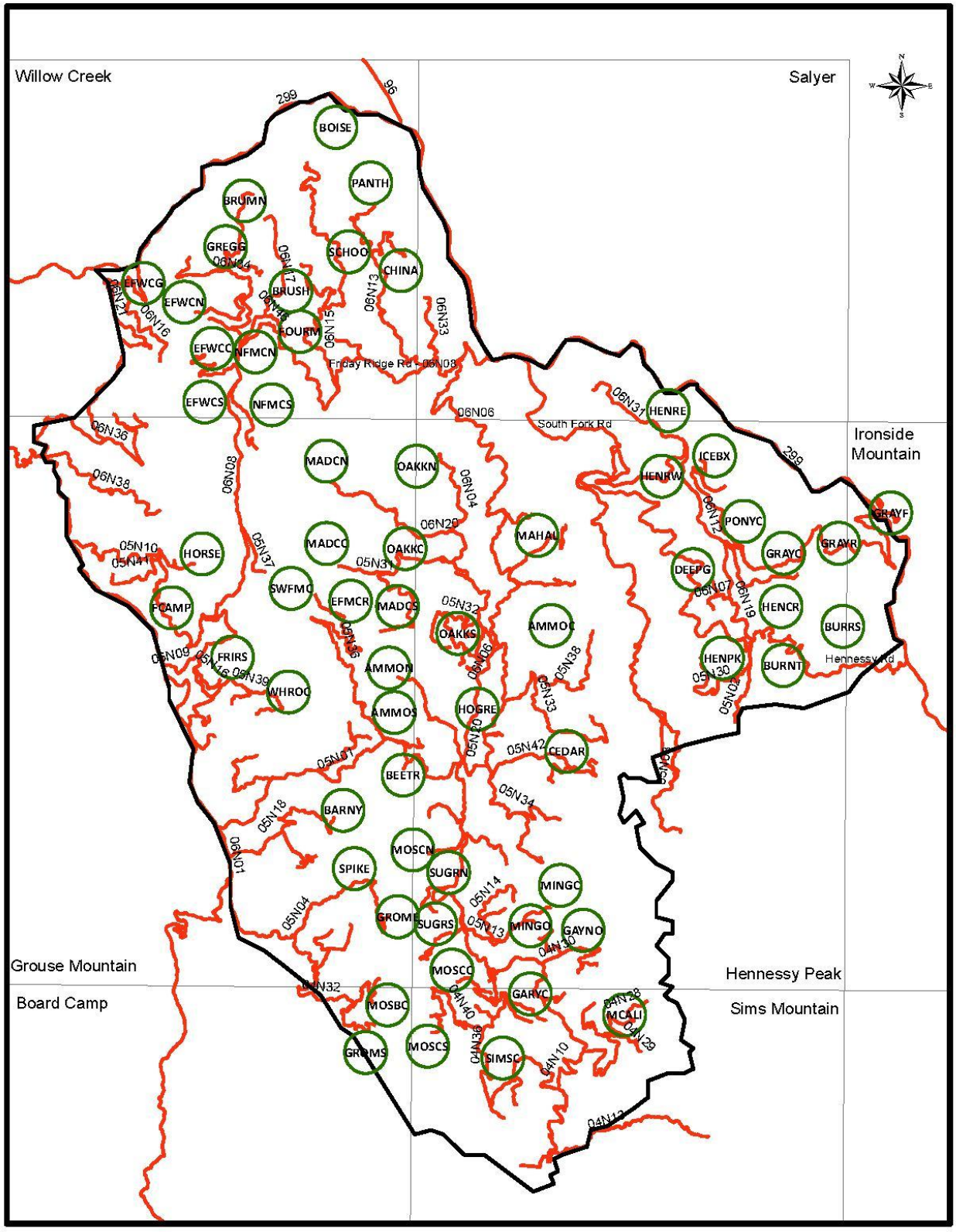
Author: mbourne@ppeng.com
Printed from http://bios.dfg.ca.gov

G. 1.3 Mile NSO Impact Buffer Photo Map Surrounding Kahan Site

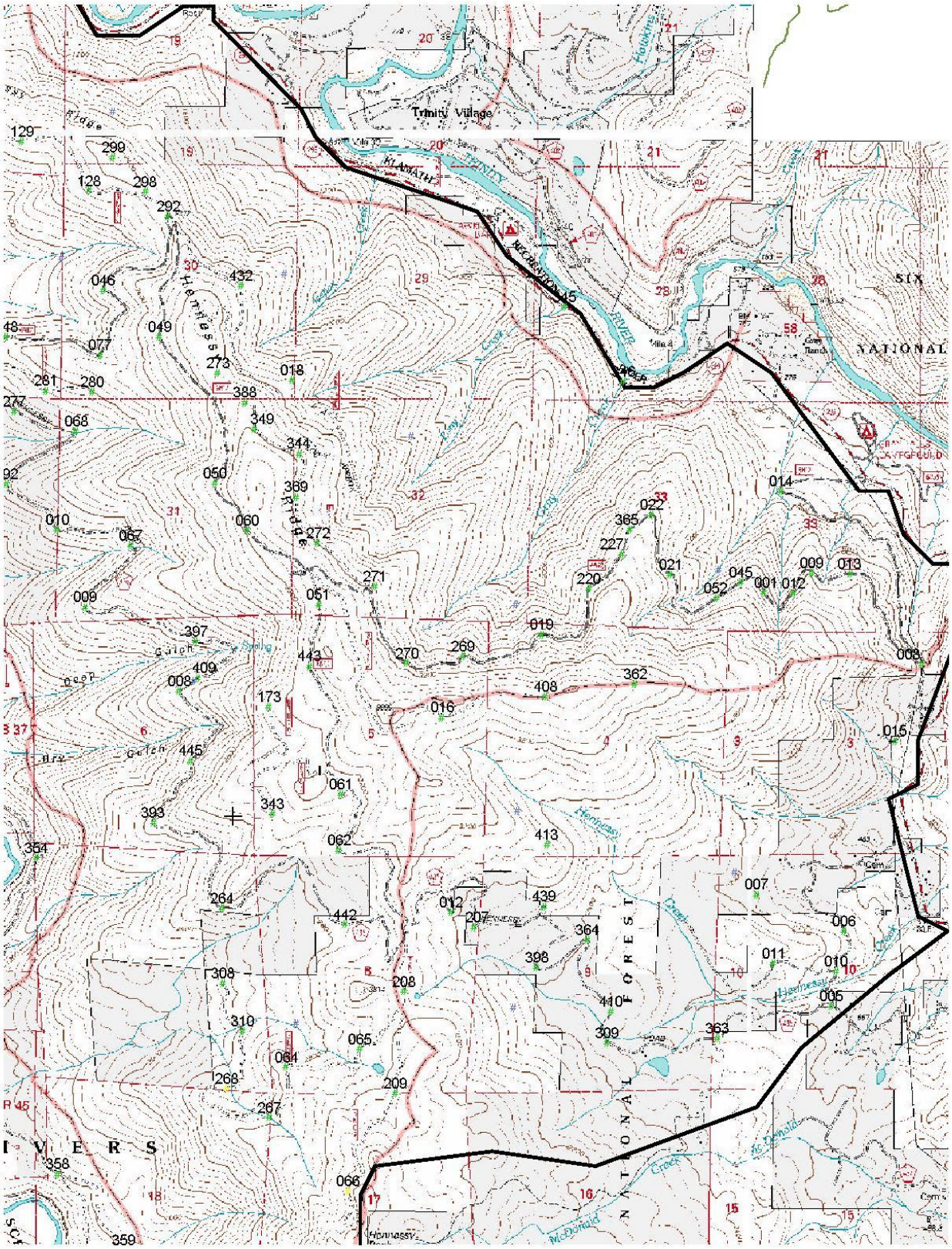


H. 1.3 Mile NSO Impact Buffer Topo Map Surrounding Kahan Site

Willow Creek Study Area



I. WCSA Overview Map



J. WCSA NSO Call Points Along Hennessey Ridge

Re: NSO data

From: Peter Carlson (pcarlson@colostate.edu)

To: obrien_biological@yahoo.com

Cc: alan.b.franklin@usda.gov; arex@colostate.edu

Date: Thursday, November 5, 2020, 12:48 PM PST

Hi Brit,
We do survey those sites annually, and they have both been vacant of NSO recently. TRI0056 (Hennessey Ridge West) has been vacant for many years (since 2002). HUM0065 (Mahala Creek) last had a pair of NSO in 2017 and has been vacant for 3 years. We have detected barred owls in both areas. I don't think there would be any occupied NSO sites nearby, but if you have a map of the project area to share I can check on that. If you need any details on our results for those 2 sites let me know, but the agencies typically accept the status that they are vacant based on our long term monitoring.

As a reminder, we do ask that no consulting surveys be conducted within our study area to avoid extra calling; we are willing to share any data needed from our survey effort and do plan to survey next year. That includes areas outside of established NSO sites, which we also survey to some extent. I've attached a map of the WCSA boundary, with roads included, for reference.

It has been a challenging year but fortunately we have been able to continue our work. I hope you are doing well too.
Peter

Peter Carlson
Research Associate
Colorado State University
Dept. of Fish, Wildlife and Conservation Biology
field office: 530-629-9208
cell: 707-499-7706

> On Wed, Nov 4, 2020 at 9:09 AM william obrien <obrien_biological@yahoo.com> wrote:
>
> Hi Pete,
>
> My name is Brit O'Brien, I'm a consulting biologist in Eureka. I know we've met previously at the annual NSO meeting in Korbel. I hope all is well with you in this challenging time we're in.
> I'm reaching out to you in the hope that you may have some recent NSO data on some AC's along the south fork Trinity. Specifically, TRI0056 or HUM0065. Any data from these sites, or anything nearby, that you could share would be mighty useful, as we have a nearby client, and we are trying to establish a baseline of data.
> I very much appreciate your time and efforts, and all the best for 2021.
> Thanks,
>
> Brit O'Brien
> O'Brien Biological Consultants
> Eureka, CA
> 707.845.6627
>
> Sent from my iPhone

K. Email from Peter Carlson Regarding Willow Creek Study Area NSO Effort

L. Aerial and Ground Photos of Kahan Property

1.0 View East of Kahan Property

2.0 View Southeast from Kahan Property

3.0 View South from Kahan Property

4.0 View Southwest from Kahan Property

5.0 View West of Kahan Property

6.0 View Northwest from Kahan Property (South Fork Road)

7.0 View North from Kahan Property (Hennessey Road)

8.0 View Northeast from Kahan Property

9.0 Kahan Cultivation Site 1

10.0 Kahan Cultivation Site 2

11.0 Irrigation Pond at Eastern End of Property

12.0 Mature Forest Along Class II Creek

13.0 Riparian Forest Upstream from Pond Site

14.0 Riparian Forest Downstream from Pond Site

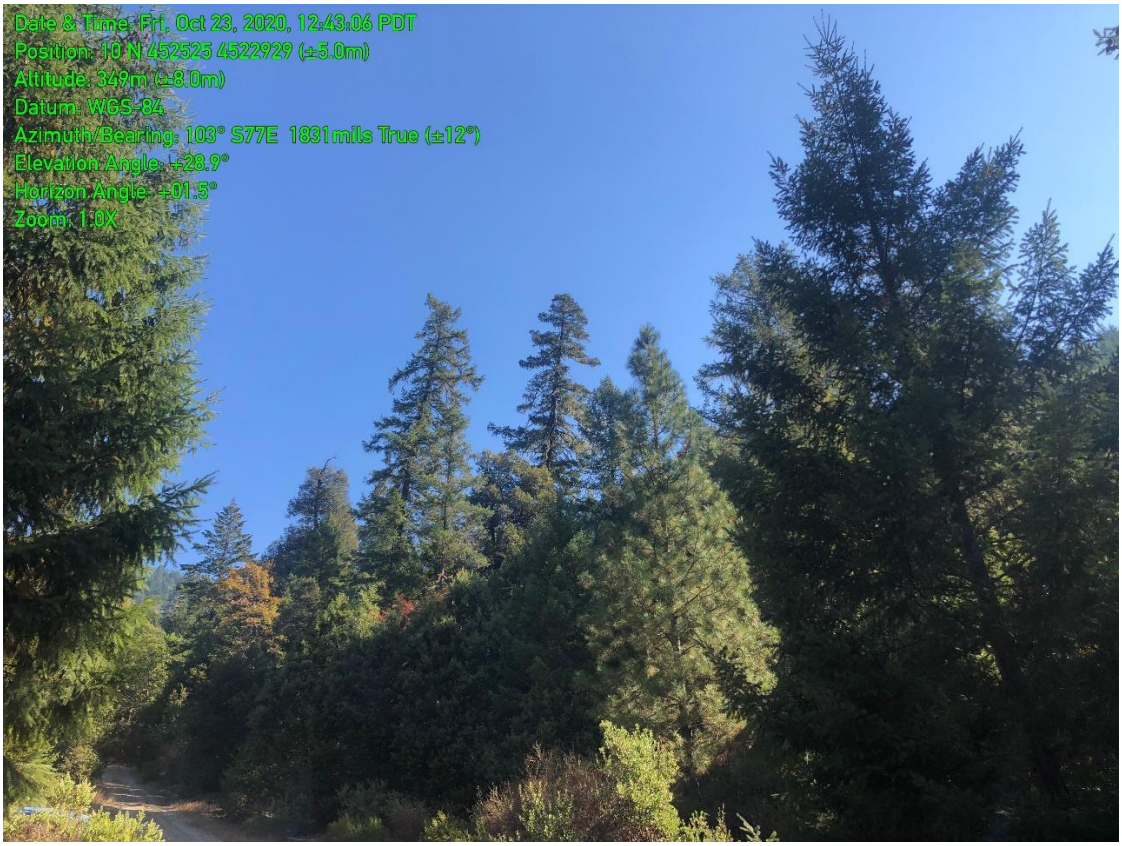
15.0 Greenhouses at Site 1

16.0 Habitat Adjacent to Cultivation Site 1

17.0 Greenhouse at Site 2

18.0 Habitat Adjacent to Cultivation Site 2

19.0 Habitat Adjacent to Cultivation Site 2



20.0 Mature Douglas Firs Along Creek Across from Pond Site

Appendix D
Site Management Plan Technical Report (PWS, 2020)

Site Management Plan
Technical Report
Order WQ 2019-0001-DWQ

For

APN 008-080-32

Located on

5200 South Fork Road
Salyer, California

March 2020

Prepared for:
True Heart Connection
APN 008-080-32
WDID 1_53CC418583
600 F 3-1013 Ste Arcata, CA 95521

Prepared by:
Anna Hall, Staff Geologist
Pacific Watershed Associates Inc.
P.O. Box 4433, Arcata, CA 95518
(707) 839-5130

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1.0 I. INTRODUCTION AND PROJECT SUMMARY

Tier 1 and Tier 2 Dischargers enrolled in the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order) shall submit and implement a Site Management Plan (Plan) that describes how the Discharger is implementing the Best Practicable Treatment or Control (BPTC) measures listed in Attachment A of the State Water Resource Control Board's Cannabis Cultivation Policy (approved April 16, 2019). The Plan may include a schedule to achieve compliance, but all work must be completed by the onset of winter period each year. (The due date does not relieve a Discharger from implementing the interim soil stabilization BPTC measures described in Attachment A.)

This report documents Pacific Watershed Associate's (PWA) Site Management Plan (Plan) for Trinity County APN 008-080-32 located at 5200 Southfork Road (formerly 5321 Southfork Road), in Salyer, CA, as shown on Figure 1. This property is located approximately 5 miles south of Highway 299 on South Fork Road and 34 miles west of Weaverville, Trinity County, CA, and hereinafter is referred to as the "Project Site."

The Project Site cultivator ("Discharger") has transferred enrollment in the North Coast Regional Water Quality Control Board Order R1-2015-0023 to the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). A Water Resource Protection Plan (WRPP) was prepared and produced for the Discharger by PWA, based on our site inspection conducted in 2016, and is included as a supplemental attachment to this document. Several remedial measures recommended in the WRPP to comply with the Standard Conditions of the Regional Water Quality Control Board's Order have already been implemented by the landowner.

Based on the total disturbance area, slopes of disturbed areas, and riparian setbacks, this property falls within **Tier 1** of the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). Properties that fall into Tier 1 or 2 of the General Order are required to develop a Site Management Plan (Plan). This Plan has been developed for the Discharger based on site inspections made by PWA on the Project Site and references the remedial actions identified in the existing WRPP pertaining to the Project Site. PWA's recommendations for any remediation or corrective actions are a result of water quality requirements under the General Order, including Best Practicable Treatment or Control (BPTCs) designed to meet those requirements. This Plan documents the findings of subsequent site visit(s) and inspection(s) conducted in 2018, by PWA certified engineering geologist Colin Hughes, when a reconnaissance level investigation of the property was conducted and the conditions noted.

II. CERTIFICATIONS, LIMITATIONS AND CONDITIONS

This Plan has been prepared by, or under the responsible charge of, a California licensed geologist at PWA and all information herein, including treatment recommendations, are based on observations, data, and information collected by PWA staff.

This Plan has been prepared to: 1) provide specific BPTC measures to be utilized on the Project Site to minimize potential threats to water quality, 2) provide itemized remedial actions to be taken on the Project Site to correct existing or potential water quality threats or impacts and meet the general waste discharge requirements of the General Order, and 3) provide a revised schedule for the implementation of the itemized remedial actions. The analysis and recommendations submitted in this Plan and attached WRPP are based on PWA's evaluation of the Project Site and activities which fall under the General Order.

In this Plan and attached WRPP, we have described the recent and current conditions of the Project Site and any water resource and water quality risk factors we observed during our site inspections. PWA is not responsible for problems or issues we did not observe on our site inspections, or for changes that have naturally occurred or been made to the property after our site review. The interpretations and conclusions presented in this Plan are based on reconnaissance level site investigations of inherently limited scope. Observations are qualitative, or semi-quantitative, and confined to surface expressions of limited extent and artificial exposures of subsurface materials. Interpretations of problematic geologic, geomorphic or hydrologic features such as unstable hillslopes, erosional processes and water quality threats are based on the information available at the time of our inspection and on the nature and distribution of existing features we observed on the property.

We have also included a schedule of itemized remedial actions that are based on these observations. The remedial actions provided in this Plan have been developed from professional opinions derived in accordance with current standards of professional practice, and are valid as of the date of the most recent or most applicable field inspection. No other warranty, expressed or implied, is made. Furthermore, to ensure proper applicability to existing conditions, the information and remedial actions contained in this report shall be regularly reevaluated and it is the responsibility of the landowner and/or lessee operating under the General Order to ensure that no remedial actions or recommendations are inappropriately applied to conditions on the property that have changed since the recommendations were developed.

If site conditions have changed for any reason, the Project Site should be reevaluated and the Plan and associated recommendations revised and updated as required. These conditions include any changes in land management activities or property conditions that have occurred since our site visit (regardless of what they are, how they occurred, or who performed them). Similarly, if the landowner/lessee uses portions of this property not identified or covered under the current Plan, this Plan will need to be updated with the new information, including possible additions or changes to the recommended remedial or corrective actions and BPTCs.

The person, persons, business or other entity listed as the enrollee under the General Order is responsible for complying with all the requirements thereunder, including the WRPP and related recommendations and requirements, regardless of who is operating or cultivating on that Project Site. If the enrollee is not the sole landowner and fails to comply with the Order and its requirements, the landowner or remaining landowners will automatically assume responsibility for the requirements therein, including all related penalties or actions brought by the SWRCB and/or NCRWQCB.

If at any time in the future the property is to transfer ownership, it is the responsibility of the current owner(s), or their representative(s), to ensure that the information and recommendations contained herein are called to the attention of any future owner or agent for the property. Unless this Plan is modified by the SWRCB or NCRWQCB, the findings and recommendations contained in this Plan shall be utilized as a tool while implementing the Plan remedial actions. Necessary

steps shall be taken to see that contractor(s) and subcontractor(s) carry out such recommendations in the field in accordance with the most current Plan and BPTC standards.

PWA will be responsible for the data, interpretations and recommendations developed by PWA, but will not be responsible for the interpretation by others of that information, for implementation of corrective actions by others, or for additional or modified work arising out of those plans, interpretations, and recommendations. PWA assumes no liability for the performance of other workers or suppliers while following PWA's recommendations in the Plan, unless PWA is under contract to perform or oversee those activities. Additionally, PWA is not responsible for changes in applicable or appropriate standards beyond our control, such as those arising from changes in legislation or regulations, or the broadening of knowledge which may invalidate or alter any of our findings or recommended actions.

Any Plan review or construction management services that may be needed or identified in the recommendations sections of this Plan are separate tasks from the preparation of this Plan, and are not a part of the contract under which this Plan was prepared. If requested, additional PWA field inspections, surveys, Plan revisions/updates, project layout, design, permitting, construction oversight/management, or other related services arising from tasks described and recommended in the Plan may be performed under separate agreements requiring advance notice and contracting.

PWA's services consist of professional opinions and recommendations made in accordance with generally accepted principles and practices. No warranty, expressed or implied, or merchantability or fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings. This Plan, as written or as modified in writing, takes precedence over all other communication. If the client desires assurances against project failures, they shall obtain appropriate insurance through their own insurance broker or guarantor.

Prepared by:

Anna Hall, Staff Geologist
Pacific Watershed Associates, Inc.
P.O. Box 4433, Arcata, California 95518
Plan finalized on date: March 18, 2020

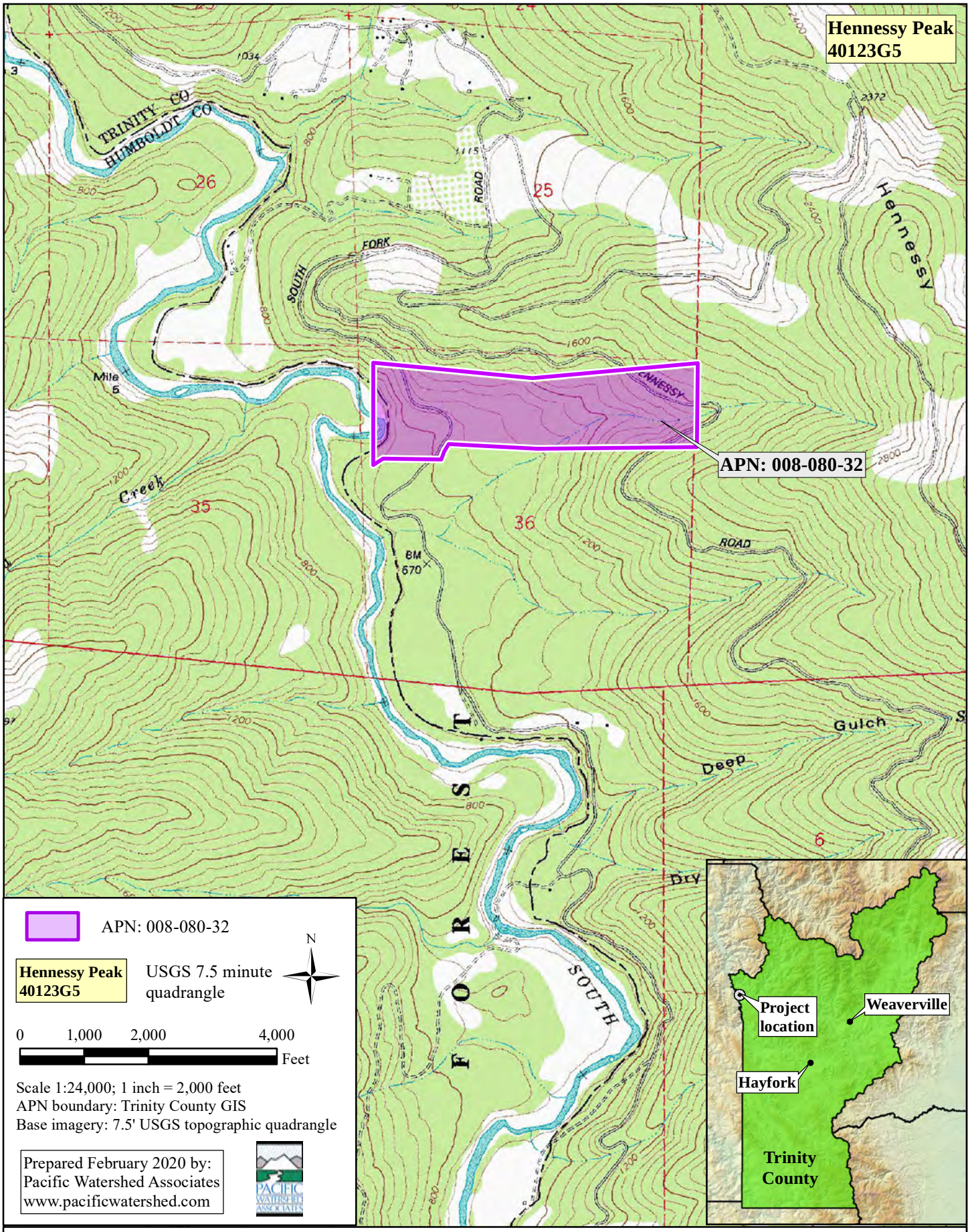


Figure 1. Site Management Plan Location Map for True Heart Connection, APN 008-080-32, Trinity County, California.

P:\GIS\5082

III. SITE MANAGEMENT PLAN – ORDER WQ 2019-0001-DWQ REQUIREMENTS

1.0 SEDIMENT DISCHARGE BPTC MEASURES

1.1 Site Characteristics

1.1.1 Site Map

See the attached site map, Figure 2, showing access roads, vehicle parking areas, streams, stream crossings, cultivation site(s), disturbed areas, buildings, and other relevant site features as applicable:

- for Region 1 dischargers: legacy waste discharge issues that exist on the property
- erosion prevention BPTC measures
- winterization measures
- sediment control BPTC measures
- storage locations for: fertilizers and herbicides
- petroleum product storage locations
- trash/refuse storage locations
- onsite wastewater treatment system(s), including any domestic wastewater treatment, storage, or disposal area(s)

1.1.2 Access, Maintenance, and Storm Water

Describe the access road conditions including estimating vehicle traffic, road surface (e.g., paved, rocked, or bare ground), and maintenance activities. Describe how storm water is drained from the access road (e.g., crowned, out slope, armored ditch, culverts, rolling dips, etc.).

On average, three commuter vehicles make three round trips in and out of the property every day. Small off-road vehicles are used on the project site for most cultivation-related tasks. There is one backhoe on the project site that is used minimally and does not leave the property.

Two easements exist on the Project Site. A portion of South Fork Road is located in the western part of the parcel. This road is paved and is maintained by Trinity County. A small portion of Hennessey Ridge Road is located on the northeastern section of the project site. Hennessey Road is rocked and maintained by the United States Forest Service (USFS). The landowner has an easement from the USFS to access Hennessey Road. The remaining access roads are maintained by the landowner.

An Erosion Control Plan was developed by Pacific Watershed Associates in 2016 to upgrade two access roads on the project site. The remaining access road was decommissioned in 2017. Twenty rolling dips were installed on the main road in 2017, all outboard berms were removed from through-cut portions of the road, and several sections were outsloped. One portion of the main road that exhibited unstable conditions was re-routed to a more stable location. Approximately 800 feet of road was decommissioned in 2017; which included four stream crossings. The road was re-contoured, decompacted, drained, and revegetated to eliminate future sediment delivery to streams. Access roads that were upgraded have rocked surfaces. All roads

on the Project Site have been upgraded or decommissioned according to the standards developed in the *Handbook for Forest, Ranch, & Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining, and Closing Wildland Roads.* Please refer to Table 1 for all proposed maintenance activities.

1.1.3 Stream Crossings

Describe any vehicle stream crossing including the type of crossing (e.g., bridge, culvert, low water, etc.).

Two stream crossings are located on the project site (Figure 2). One Class III ford crossing (SC #4) is located on the main road. This site was upgraded in 2017. The dip through the road was enhanced to convey 100-year storm event stream flow across the road. Rock armor was placed at the outboard side of the road to reduce road surface erosion. Both road approaches to the stream crossing were rocked with high quality angular road rock. The second stream crossing is located on a quad road. This seasonal road is used exclusively by small off-road vehicles. The near origin Class III stream crossing (SC #6) has no associated road fill. Road rock (10 yd^3) was placed through the crossing to harden the road surface and reduce production of fine sediment.

Four stream crossings located in the northeastern portion of the project site were decommissioned in 2017. All associated road fill was removed from the crossings and used to recontour the natural hillslope. Stream channels were realigned to mimic historic channel alignments, and oversteepened stream banks were laid back to stable angles. All bare soil areas were seeded and mulched with perennial grasses. The road associated with the stream crossings was also decommissioned.

All stream channel earth work was completed during the summertime work season under the supervision of a qualified professional. The landowner obtained prior notification through a Lake and Streambed Alteration agreement from the California Department of Fish and Wildlife before construction began (See Appendix B).

1.1.3.1 Legacy Waste Discharge Issues for Region 1

For Region 1 Dischargers, identify, discuss, and locate on the site map any legacy waste discharge issues that exist on the property.

There are no legacy waste discharge issues located on the Project Site.

1.2 Sediment Erosion Prevention and Sediment Capture

1.2.1 Erosion Prevention and Sediment Control Measures: BPTCs, Schedule, and Map

The description shall address physical BPTC measures, (e.g., placement of straw mulch, plastic covers, slope stabilization, soil binders, culvert outfall armoring, placement of /silt fences, fiber rolls, or settling ponds/areas, etc.)

and biological BPTC measures (vegetation preservation/replacement, vegetated outfalls, hydro seeding, etc.).

Refer to Table 1, for a description of erosion prevention and sediment capture BPTC measures that have been or will be implemented to prevent or limit erosion and capture sediment that has been eroded. The table also includes an implementation schedule for BPTC measures that have not yet been implemented.

Refer to Figure *2* for the location of erosion prevention and sediment control BPTC measures.

1.2.2 Maintenance Activities – Erosion Prevention and Sediment Control

1.2.2.1 Monitoring and Maintenance

Describe how the erosion prevention and sediment control BPTC measures will be monitored and maintained to protect water quality.

In general, the Project Site needs to be monitored throughout the year to identify any problems that might arise and to evaluate the effectiveness of corrective actions after completion. Refer to Table 2 for recommendations relating to existing and proposed BPTC measures that will require monitoring and/or maintenance.
The goal of monitoring is to ensure the original problem/feature has been effectively treated and that the causal mechanisms (ineffective road drainage, improperly stored fuels, etc.) are not continuing to threaten or cause water quality degradation. If additional deficiencies develop or individual problems arise, then corrective actions must be implemented immediately.

Periodic inspections should include visual inspection of the site, including any management measures/practices, to ensure they are being implemented correctly and are functioning as expected. Inspections include photographic documentation of any controllable sediment discharge sites, as identified on the site map, and a visual inspection of those locations on the site where pollutants or wastes, if uncontained, could be transported into receiving waters, and those locations where runoff from roads or developed areas drains into or towards surface water.

At a minimum, sites shall be inspected at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to prevent or minimize discharges of waste or pollutants to surface water:

1) Before and after any significant alteration or upgrade to a given stream crossing, road segment, or other controllable sediment discharge site. Inspection should include photographic documentation, if possible.

2) Prior to November 15 to evaluate site preparedness for storm events and stormwater runoff.
3) Following the accumulation of 3 inches cumulative precipitation (starting September 1st) or by December 15th, whichever is sooner.
4) Following storm events that produce 0.5 inches in 24 hours or 1 inch within seven consecutive days of precipitation (Cannabis Cultivation Policy: Attachment A). Precipitation data can be obtained from the National Weather Service by entering the site zip code at http://www.srh.noaa.gov/forecast; Pick the nearest or most relevant zip code and then select the 3 day history that will also show precipitation totals.

1.2.2.2 Captured Sediment

Describe how any captured sediment will be either stabilized in place, excavated and stabilized on-site, or removed from the site.

In the event that any excess sediment is generated, all captured sediment will be stabilized and stored in place.

1.2.3 Erosion Control BPTC Measures – Interim and Long-term

Describe the interim soil stabilization, if applicable and long-term BPTC measures implemented to prevent sediment transport at each identified disturbed area(s) and improperly constructed features.

Please refer to Table 1 for more information regarding erosion control BPTC measures and implementation schedules.

Table 1. Prioritized Implementation Schedule for Best Practicable Treatment or Controls (BPTC).

Map Point or Location	Summary of Corrective Actions/Recommendations	Schedule	Date Completed
<E> – Existing <P> – Proposed CA – Cultivation Area SC – Stream Crossing RD – Rolling Dip OWTS – Onsite Wastewater Treatment System W – Winterization EC – Erosion Control SE – Sediment Control WM – Waste Management			
Cultivation Areas			
<E> BPTC/SE-1, SE-5, EC-6; CA#1	1) One (1) fiber roll and one (1) silt fence were installed during and immediately following construction of the existing house and greenhouse located at CA#1. 2) All bare soil areas were covered and seeded with straw mulch and grasses. 3) Monitoring of the BPTC measures continues throughout the year.	All BPTC measures were implemented as needed during and throughout continued construction from 2016-2019.	2016 - 2019

Map Point or Location	Summary of Corrective Actions/Recommendations	Schedule	Date Completed
<E> – Existing <P> – Proposed CA – Cultivation Area SC – Stream Crossing RD – Rolling Dip OWTS – Onsite Wastewater Treatment System W – Winterization EC – Erosion Control SE – Sediment Control WM – Waste Management			
<P> BPTC/ SE-1, SE-5, EC-6, WM-3; CA Expansion Area 1A	1) A large flat area already exists. Cultivator is applying for a 1-acre license through Trinity County. Expansion of the area will require minimal earth movement. During construction, the use of fiber rolls, silt fences, straw mulch, and stockpile management will be utilized as needed.	TBD, cultivator needs to wait until approved for cultivation expansion through Trinity County Ordinance. All BPTC measures will be implemented immediately after construction.	
<E>/<P> BPTC/EC-6/W; CA#2	1) After relocation to CA Expansion Area 1A, seed and mulch all bare soil areas with native grass seed weed-free straw mulch. 2) Consider re-planting the area with native perennial plants.	TBD, cultivator needs to wait until approved for cultivation expansion through Trinity County Ordinance.	
<E> BPTC/WM-3; Stockpile	1) Cultivator rotates stockpile every cultivation season. Soil is amended with nutrients and compost. Stockpile is covered with tarp and surrounded with fiber roll. Consider seeding stockpile with cover crops instead of using a tarp. This will prevent erosion while fixing nitrogen into the soil so less fertilizers are needed.	2016 and continuing throughout growing season	2016
<E> /<P> BPTC/EC-6/W; CA#3	1) After relocation to expansion area CA#1A, seed and mulch all bare soil areas with native grass and weed-free straw mulch. 2) Consider re-planting the area with native perennial plants.	TBD, cultivator needs to wait until approved for cultivation expansion through Trinity County Ordinance.	
<E>/<P> BPTC/EC-6/W; CA#4	1) After relocation to expansion area CA#1A, please seed and mulch all bare soil areas with native grasses and weed-free straw mulch. 2) Consider re-planting the area with native perennial plants.	TBD, cultivator needs to wait until approved for cultivation expansion through Trinity County Ordinance.	

Map Point or Location	Summary of Corrective Actions/Recommendations	Schedule	Date Completed
<E> – Existing <P> – Proposed CA – Cultivation Area SC – Stream Crossing RD – Rolling Dip OWTS – Onsite Wastewater Treatment System W – Winterization EC – Erosion Control SE – Sediment Control WM – Waste Management			
<E> CA#1-4 BPTC/W	1) Remove all non-permanent plastic covers from hoophouses and greenhouses before the winter period. 2) Drain all irrigation lines and disconnect irrigation lines when not in use. 3) Plant cover crops on any exposed soil in pots or beds. 4) Tarp all stockpiles (soil, excavated fill, untreated wood, cement, etc.) by covering with a tarp and surrounding with a berm. See WM-3 5) Inspect all cultivation areas before the winter period for any signs of erosion. Implement the proper BPTC's. Inspect and repair all BPTC's regularly, and especially before and after significant storm events.	Before the winter period every year (November 15 to April 1) and before and after significant precipitation events equal to or greater than 0.5" in 24 hrs.	
Roads			
<P> BPTC/Maintenance – Re-grade/Re-rock	1) Re-grade section of road between the existing house and proposed pond (900 ft), see Appendix A, Typical Drawing #9. 2) Re-rock road surface with 2-3 inches of high quality angular road rock.	April 1 - November 15, 2020	
<E> BPTC; RD	1) Roads upgraded with rolling dips to hydrologically disconnect surface erosion.	Summer, 2016-2017	Summer, 2017
Stream Crossings			
<E> BPTC/W; SC#4	1) Monitor upgraded stream crossing before the winter period each year to ensure proper functioning (stream crossing upgrade was designed to be low maintenance). 2) Add armored rock and road rock as needed.	Before the winter period every year (November 15 to April 1) and before and after significant precipitation events equal to or greater than 0.5" in 24 hrs.	

Map Point or Location	Summary of Corrective Actions/Recommendations	Schedule	Date Completed
<E> – Existing <P> – Proposed CA – Cultivation Area SC – Stream Crossing RD – Rolling Dip OWTS – Onsite Wastewater Treatment System W – Winterization EC – Erosion Control SE – Sediment Control WM – Waste Management			
<E> BPTC/W; SC#6	1) Monitor upgraded stream crossing before the winter period each year to ensure proper functioning (stream crossing upgrade was designed to be low maintenance). 2) Add armored rock and road rock as needed.	Before the winter period every year (November 15 to April 1) and before and after significant precipitation events equal to or greater than 0.5" in 24 hrs.	
Other			
<P> Storage Shed (fuel)	1) Separate fuel into new fuel storage shed with roof and impermeable floor. 2) Provide one or two spill kits in fuel shed at all times. 3) Fuel containers need to have secondary containment.	June 30, 2020	
<E> Pond	1) A rainwater catchment pond was designed and implemented under the supervision of licensed engineer. 2) Bare soil areas were covered with perennial grass seed and weed-free straw mulch immediately after construction. 3) Continue to monitor and spread seed and straw mulch until all bare soil areas reach at least 70% vegetative cover.	April 1, 2018	April 1, 2018

2.0 FERTILIZER AND HERBICIDE BPTC MEASURES

2.1 Summary Table

Provide a summary table that identifies the products used at the site, when they are delivered to the site, how they are stored, and used at the site. If products are not consumed during the growing season, describe how they are removed from the site or stored to prevent discharge over the winter season.

See the summary in Table 2 that identifies the products used at the site, when they are delivered to the site, and how they are stored and used at the site. Table 2 also describes how products are removed from the site or stored to prevent discharge if they are not consumed before the winter season. Pesticides and rodenticides are not used at the Project Site.

Table 2. Fertilizer and Herbicide Product List

Product	When Delivered	How Stored	How Used	How Products Are Removed from the Site or Stored to Prevent Discharge If They Are Not Consumed Before the Winter Season
Fertilizers				
Beneficial Living Center Bloom	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Added to irrigation water	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Beneficial Living Center Veg	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Added to irrigation water	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Plant Therapy	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with water and sprayed directly onto plants	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Coco Wet (Wetting Agent)	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with water and sprayed directly onto plants	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Sea Green	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Added to irrigation water	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Age Old Organics Veg	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Added to irrigation water	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Age Old Organics Bloom	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Added to irrigation water	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Pacific Pearl Oyster Shell	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with soil	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Spare Time Organics Nitrogen Bat Guano	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with soil	Entire supply is used before the onset of winter
Stutzman Chicken Manure	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with soil	Entire supply is used before the onset of winter

Malibu Compost Biodynamic	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with soil	Entire supply is used before the onset of winter
Herbicides				
Einstein Oil (Neem Oil)	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with water and dish soap, then sprayed directly on plants	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Green Cleaner	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with water and sprayed directly onto plants	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Safer Insect Killing Soap	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with water and sprayed directly onto plants	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.
Bio-Carb Old Fashioned (Fungicide)	Bought and delivered personally as needed	Stored in a locked shed with roof and impermeable floor	Mixed with water and sprayed directly onto plants	Empty containers are recycled at a certified disposal facility. If not consumed before winter, then stored in locked shed with secondary containment.

2.2 Site Map

Figure 2 identifies the locked fertilizer and herbicide storage shed.

2.3 Bulk Fertilizers and Chemical Concentrates

Describe how bulk fertilizers and chemical concentrates are stored, mixed, applied, and how empty containers are disposed.

All fertilizers and soil amendments are applied throughout the growing season. During the cultivation season, fertilizers that are actively in use are stored in a metal bear proof box that is mounted on the back of a truck that can move around the property. Any excess fertilizers or amendments are stored inside a locked storage shed with roof and impermeable floor. Plastic bins are used as secondary containment inside the shed. All empty containers are disposed of at Humboldt Sanitation and Recycling center in McKinleyville.

2.4 Spill Prevention and Cleanup

Describe procedures for spill prevention and cleanup.

The likelihood of chemical spills will be minimized by storing all fertilizers and herbicides off of the ground and in designated enclosed containers and structures. Spill cleanup will be initiated as quickly as possible after occurrence. In the event of spills on pavement or concrete, solid materials will be removed utilizing a broom/brush and pan or vacuum. Affected paved surfaces will be decontaminated using a mild detergent and water. Liquid chemical spills on pavement or concrete will be captured using

absorbent materials. Spills of solid or liquid materials on soil will be cleaned by removal of the spilled materials and contaminated soil using a shovel and/or absorbent materials. Contaminated soil will be stored in a labelled sealed container. Disposal of contaminated materials will be conducted in accordance with manufacturer's instructions and local regulations.

3.0 PETROLEUM PRODUCT BPTC MEASURES

3.1 Summary Table

See the summary in Table 3, below, that identifies the petroleum products used at the site, when they are delivered to the site, and how they are stored and used at the site.

Table 3. Petroleum Product List

Product Name	When Delivered	How Stored	How Used	How Products Are Removed from the Site or Stored to Prevent Discharge If They Are Not Consumed Before the Winter Season
Unleaded Gasoline (20 gallons)	Bought and delivered personally as needed	Stored in small plastic gas cans	Used for rototiller, weed eater, mower, off-road vehicles, generators	All gas cans are stored in a shed with a roof, floor and secondary containment during the winter. The landowner will be building a new storage shed for fuel, see Table 1 and Figure 2. Gas cans are refilled when empty.
Diesel Fuel (10 gallons)	Bought and delivered personally as needed	Stored in designated metal diesel fuel tank mounted on truck. Extra diesel is stored in plastic gas cans	Used for truck and backhoe	All gas cans are stored in a shed with a roof, floor and secondary containment during the winter. The landowner will be building a new storage shed for fuel, see Table 1 and Figure 2. Gas cans are refilled when empty.
Propane (15 gallons)	Bought and delivered personally as needed	Stored in designated propane tanks	Used for barbeque grill and hot water heater on RV.	Both propane tanks are certified and refilled as needed.

3.2 Site Map

Figure 2 identifies petroleum product storage and use locations.

3.3 Handling

Describe how fuels, lubricants, and other petroleum products are stored, mixed, applied, and empty containers are disposed.

Please refer to Table 3 for more information regarding petroleum delivery, storage, and application. Refer to Table 1 for specific BPTC measures for handling and storage of petroleum products onsite.

3.4 Spill Prevention and Cleanup

Describe procedures for spill prevention and cleanup.

The likelihood of petroleum spills will be minimized by storing all petroleum off of the ground and in designated enclosed containers and structures. Spill cleanup will be initiated as quickly as possible after occurrence. Liquid petroleum spills on pavement or concrete will be captured using absorbent materials. Spills of liquid materials on soil will be cleaned by removal of the spilled materials and contaminated soil using a shovel and/or absorbent materials. Contaminated soil will be stored in a labelled sealed container. Disposal of contaminated materials will be conducted in accordance with manufacturer's instructions and local regulations. Spill prevention cleanup kits will be readily available and located where fuel is stored and where refueling occurs.

4.0 TRASH/REFUSE, AND DOMESTIC WASTEWATER BPTC MEASURES

4.1 Types, Containment, and Disposal of Trash/Refuse

Describe the types of trash/refuse that will be generated at the site. Describe how the material is contained and properly disposed of.

Trash and refuse typically includes domestic waste such as general household trash and organic materials. Cultivation related wastes include organic wastes (cannabis stems, leaves, roots, etc.), plastic pots and planting materials, plastic containers, and degraded plastic tarps. Cultivation related waste is composted in a designated compost area, see Figure 2. The composting area is surrounded by an enclosure that has a latching door. Compost is turned into soil and reused every season.

4.1.1 Site Map

See site map, Figure 2 for the compost storage location. The trash/refuse storage is located behind the existing house.

4.2 Domestic Wastewater Generation and Disposal

4.2.1 Domestic Wastewater Generation

Describe the number of employees, visitors, or residents at the site [per unit time]. Describe the types of domestic wastewater generated at the site (e.g., household generated wastewater or chemical toilet).

An average of three (3) employees and two (2) residents are on the Project Site throughout the year that contribute to household generated wastewater. The Project Site has a negligible amount of visitors throughout the year.

4.2.2 Domestic Wastewater Disposal

Describe how the domestic wastewater is disposed.

4.2.2.1 Permitted onsite wastewater treatment system (e.g., septic tank and leach lines).

The Project Site has a permitted onsite wastewater treatment system (OWTS) that has a 1,500 gallon septic tank with five (5) 50-feet leach lines, see Figure 2. Proof of permitting through the Trinity

County Department of Environmental Health is required for the OWTS on the Project Site.

4.2.2.2 Chemical toilets or holding tank. If so, provide the name of the servicing company and the frequency of service.

This Project Site does contain a temporary portable toilet that is served once (1) per month by B&B Portable Toilets located in Blue Lake, CA. During the cultivation season, the portable toilet is serviced more often as more users frequent the Project Site. Maintain servicing records for the portable toilet in case of possible inspection.

4.2.2.3 Outhouse, pit privy, or similar. Use of this alternative requires approval from the Regional Water Board Executive Officer; include the approval from the Executive Officer and any conditions imposed for use of this alternative.

There are no outhouses or similar facilities on the Project Site.

4.2.3 Site Map

Figure 2 identifies the locations of any domestic wastewater treatment, storage, or disposal area(s).

5.0 WINTERIZATION BPTC MEASURES

5.1 Winterization Activities

Describe activities that will be performed to winterize the site and prevent discharges of waste. The description should address all the issues listed above.

In general, at the end of the cultivation season, all greenhouses have their covers removed. All irrigation lines are emptied and disconnected. Spent soil is removed from most cultivation areas to be amended with compost and other nutrients. This spent soil pile is covered and surrounded by a fiber roll throughout the winter season until it is used again in the following cultivation season. All smart pots that still contain soil are replanted with cover crops. All cultivation areas are monitored before the beginning of the winter period (November 15 – April 1) and throughout the winter period following precipitation events that produce at least 0.5 inches per day or 1.0 inch per 7 days of precipitation to ensure that erosion and sedimentation BPTC measures are intact and functioning.

All roads and stream crossings are monitored before the beginning of the winter period (November 15 – April 1) and throughout the winter season following precipitation events that produce at least 0.5 inches per day or 1.0 inch per 7 days of precipitation to ensure that stream crossings are intact and functioning properly. Please refer to Table 1 for more information regarding specific BPTC measures and implementation schedules for all winterization activities.

Heavy equipment is not used during the winter period. All disturbed areas and construction entrances and exists are stabilized to control erosion and sediment

discharges from land disturbance. Linear sediment controls will be applied before the onset of the winter period and monitored throughout the season, necessary repairs will be made. Please see Table 1 for more information regarding maintenance activities and implementation schedules for all drainage or sediment capture features.

All sites shall report winterization procedures implemented, any outstanding measures, and the schedule for completion, within the Facility Status section of their Annual Report, due every year on March 1st.

5.2 Maintenance of Drainage or Sediment Capture Features

Describe maintenance of all drainage or sediment capture features (e.g., drainage culverts, drainage trenches, settling ponds, etc.) to remove debris, soil blockages, and ensure adequate capacity exists.

Please refer to Table 1 for information regarding maintenance activities and implementation schedules for all drainage or sediment capture features.

5.3 Revegetation

Describe any revegetation activities that will occur either at the beginning or end of the precipitation season.

Please refer to Table 1 for information regarding revegetation activities and implementation schedules.

5.4 BPTC Measures That Cannot Be Completed Before Onset of Winter

If any BPTC measure cannot be completed before the onset of winter period, contact the Regional Water Board to establish a compliance schedule.

Please refer to Table 1 for information regarding winterizations activities and implementation schedules.

5.5 Legacy Waste Discharge Issues for Specific Regions

For Region 1 Dischargers, describe any activities that will be performed to address legacy waste discharge issues. Region 6 Dischargers should consult with Regional Water Board staff to confirm if any other activities in addition to BPTCs are necessary to address legacy waste discharge issues.

There are no legacy waste discharge issues at the Project Site.

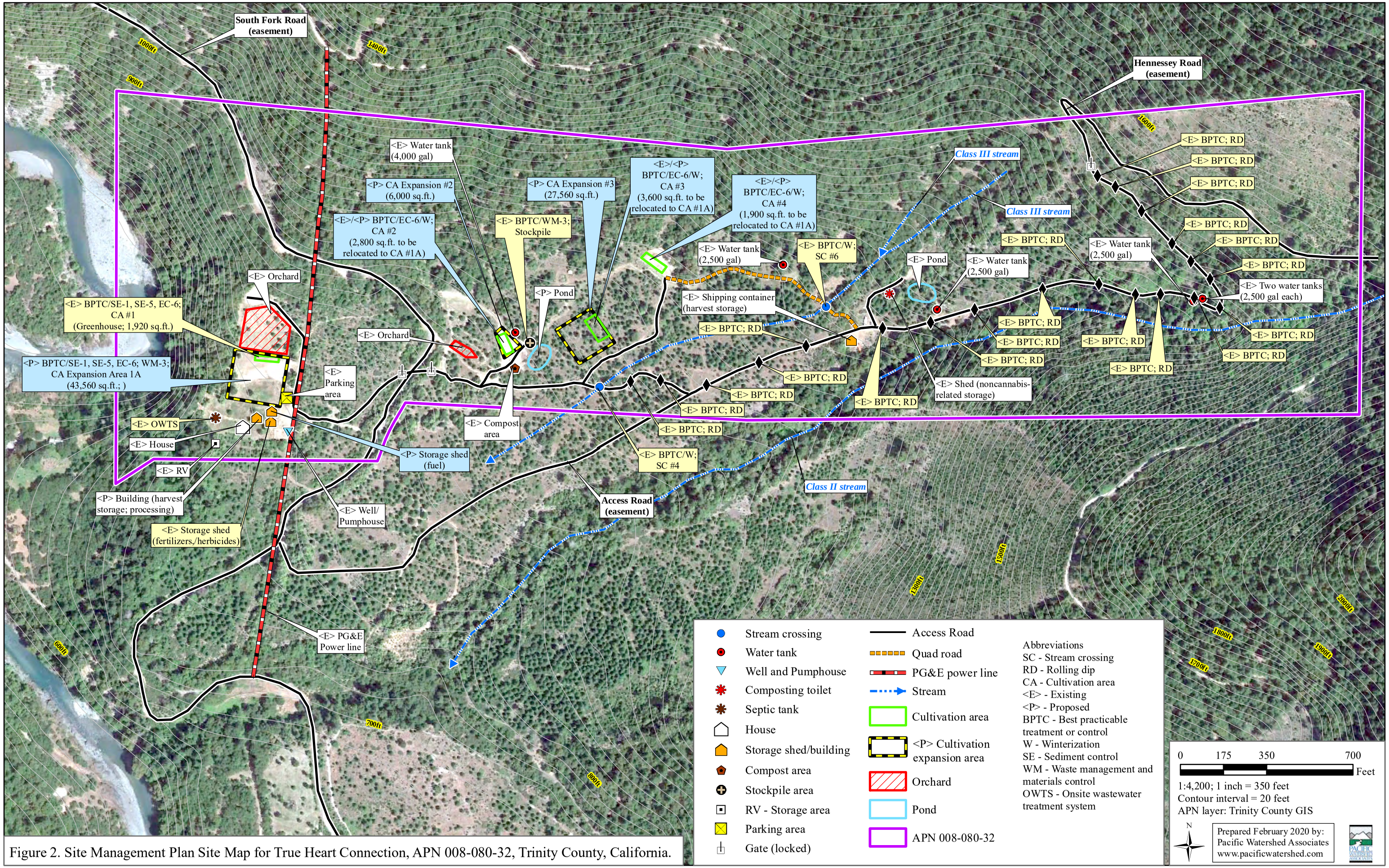


Figure 2. Site Management Plan Site Map for True Heart Connection, APN 008-080-32, Trinity County, California.

IV. LEGALLY RESPONSIBLE PERSON CERTIFICATION/SIGNATURES

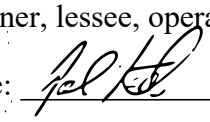
This Site Management Plan has been prepared by Pacific Watershed Associates on behalf of the Discharger.

"I have read and understand this Site Management Plan, including Section II – Certifications, Conditions and Limitations, and the associated attachments. I agree to comply with the requirements of the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order), including the recommendations and actions listed in this Site Management Plan."

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Name of Legally Responsible Person (LRP): *Patrick Kahan*

Title (owner, lessee, operator, etc.): *Owner/Operator*

Signature:  Date: *4/13/2020*

APPENDIX A

Water Resources Protection Plan (WRPP) for

Trinity County APN **008-080-32.**

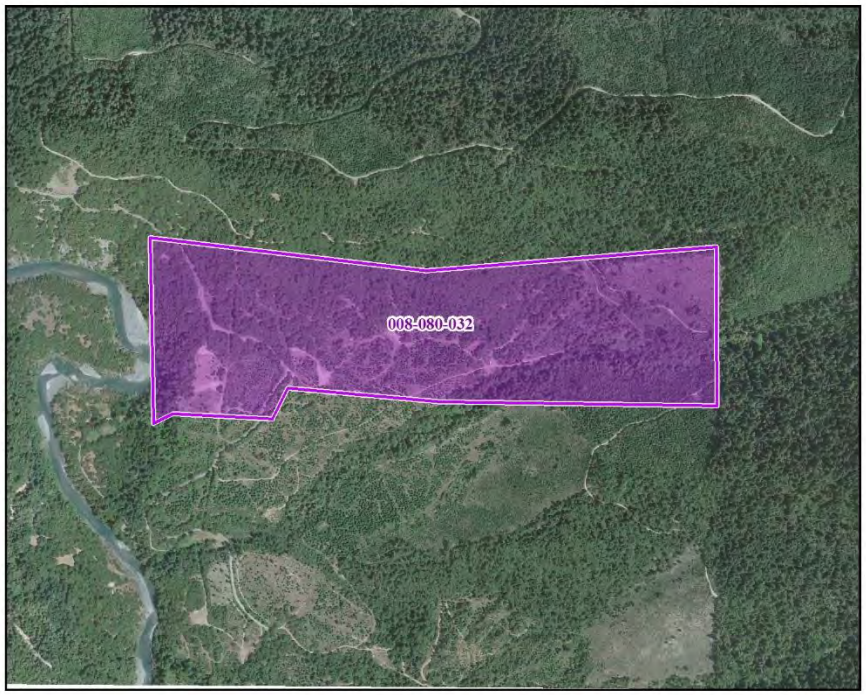
Water Resource Protection Plan (WRPP)

for

APN 008-080-032

Located at
5321 South Fork Road
Salyer, California

August, 2016



Prepared for:
WD ID# 1A16487CTRI
PWA ID# PWA1801021205055082A
South Fork Road, Salyer, CA

Prepared by:
Colin Hughes P.G. #8549
colinh@pacificwatershed.com
Pacific Watershed Associates Inc.
P.O. Box 4433, Arcata, CA 95518
(707) 839-5130

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Water Resource Protection Plan (WRPP)
Trinity County APN 008-080-032
5321 South Fork Road
Salyer, California

1.0 PROJECT SUMMARY

This report documents Pacific Watershed Associate's (PWA)[1] Water Resource Protection Plan (WRPP) for Trinity County APN 008-080-032 located at 5321 South Fork Road, Salyer, CA, as shown on Figure 1. This property is located approximately 2.5 miles south of Salyer, Trinity County, CA, and hereinafter is referred to as the "Project Site." Based site conditions and total cultivation area, this property falls within **Tier 2** of the North Coast Regional Water Quality Control Board's (NCRWQCB) Order No. 2015-0023, Waiver of Waste Discharge and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects ("Order"). Properties that fall into Tier 2 of the Order are required to develop a WRPP. Therefore, as required, this WRPP has been developed for you based on site inspections made by PWA on your property. PWA's recommendations for any remediation or corrective actions are a result of water quality requirements under the Order, including Best Management Practices (BMPs) designed to meet those requirements (Appendix A). This WRPP documents the findings of site visits conducted between November 10, 2015 and June 2, 2016 by PWA geologist Colin Hughes, when reconnaissance level investigations of the property were conducted and the conditions of the property noted.

2.0 CERTIFICATIONS, LIMITATIONS AND CONDITIONS

This WRPP has been prepared by, or under the responsible charge of, a California licensed professional geologist at PWA and all information herein, including treatment recommendations, are based on observations, data and information collected by PWA staff.

This WRPP has been prepared to: 1) describe the general conditions of the property at the time of our inspection; 2) summarize the site conditions and how they relate to the NCRWQCB twelve (12) Standard Conditions of the Order; 3) provide recommendations for remediation and/or correction of existing or potential water quality threats or impacts; and 4) recommend work to be conducted on this property to meet the 12 Standard Conditions of the Order. The analysis and recommendations submitted in this WRPP are based on PWA's evaluation of the Project Site and your activities which fall under the Order.

In this WRPP we have described the current conditions of the property and any water resource and water quality risk factors we observed at the time of our site inspection. PWA is not responsible for problems or issues we did not observe on our site inspection, or for changes that have naturally occurred or been made to the property after PWA's site review. The interpretations and conclusions presented in this WRPP are based on a reconnaissance level site investigation of

[1] PWA is an approved Third Party Program for the North Coast Regional Water Quality Control Board's (NCRWQCB) Order No. 2015-0023, Waiver of Waste Discharge and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects ("Order").

inherently limited scope. Observations are qualitative, or semi-quantitative, and confined to surface expressions of limited extent and artificial exposures of subsurface materials. Interpretations of problematic geologic, geomorphic or hydrologic features such as unstable hillslopes, erosional processes and water quality threats are based on the information available at the time of our inspection and on the nature and distribution of existing features we observed on the property.

We have also included recommendations for remediation and/or correction that are based on these observations. The recommendations included in this WRPP are professional opinions derived in accordance with current standards of professional practice, and are valid as of the date of field inspection. No other warranty, expressed or implied, is made. Furthermore, to ensure proper applicability to existing conditions, the information and recommendations contained in this report shall be regularly reevaluated and it is the responsibility of the landowner and/or lessee operating under the Order to ensure that no recommendations are inappropriately applied to conditions on the property that have changed since the recommendations were developed.

If site conditions have changed for any reason, the site should be reevaluated and the WRPP revised and updated as required. These conditions include any changes in land management activities or property conditions that have occurred since our site visit (regardless of what they are, how they occurred or who performed them). Similarly, if the landowner/lessee uses portions of this property not identified or covered under the current WRPP, this WRPP will need to be updated with the new information, including possible additions or changes to the recommended remedial or corrective actions and BMPs (Appendix A).

If the property owner has enrolled their property under the Order, they are responsible for complying with all the requirements thereunder, regardless of who is operating or cultivating on that property. If the property is being formally or informally leased to an operator, and the lessee has enrolled under the Order, then the lessee is responsible for complying with the Order's requirements, including the WRPP and related recommendations and requirements. If the lease expires or the lessee is not otherwise available or does not respond to information requests by the NCRWQCB or PWA, then the landowner automatically assumes responsibility under the Order for the requirements therein and for all related penalties or actions brought by the NCRWQCB.

If at any time in the future the property is to transfer ownership, it is the responsibility of the current owner, or their representatives, to ensure that the information and recommendations contained herein are called to the attention of any future owner or agent for the property. Unless this WRPP is modified by the NCRWQCB, or another approved Third Party Program representative, the findings and recommendations contained in this WRPP shall be utilized as a tool while implementing the recommendations made within this WRPP. Necessary steps shall be taken to see that contractor(s) and subcontractor(s) carry out such recommendations in the field in accordance with the most current WRPP and BMP standards.

As a Third Party Program, PWA will be responsible for the data, interpretations and recommendations developed by PWA, but will not be responsible for the interpretation by others of that information, for implementation of corrective actions by others, or for additional or modified work arising out of those plans, interpretations and recommendations. PWA assumes no

liability for the performance of other workers or suppliers while following PWA's recommendations in the WRPP, unless PWA is under contract to perform or oversee those activities. Additionally, PWA is not responsible for changes in applicable or appropriate standards beyond our control, such as those arising from changes in legislation or regulations, or the broadening of knowledge which may invalidate or alter any of our findings or recommended actions.

Any WRPP plan review or construction management services that may be needed or identified in the recommendations sections of this report are separate tasks from the preparation of this WRPP, and are not a part of the contract under which this WRPP was prepared. If requested, additional PWA field inspections, surveys, WRPP revisions/updates, project layout, design, permitting, construction oversight/management, or other related services arising from tasks described and recommended in the WRPP may be performed under separate agreements requiring advance notice and contracting.

PWA's services consist of professional opinions and recommendations made in accordance with generally accepted principles and practices. No warranty, expressed or implied, or merchantability or fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings. If the client desires assurances against project failures, they shall obtain appropriate insurance through their own insurance broker or guarantor.

This WRPP is considered a living document and shall be updated at least annually, or sooner if conditions have changed or land management actions have been undertaken after our site inspection. As an official part of the Waiver Program, this WRPP (including all its text, appendices, maps and photos) shall remain onsite and available for NCRWQCB staff to inspect and review upon request.

Prepared by:

Colin Hughes
Professional Geologist #8549
Pacific Watershed Associates, Inc.
P.O. Box 4433, Arcata, California 95518

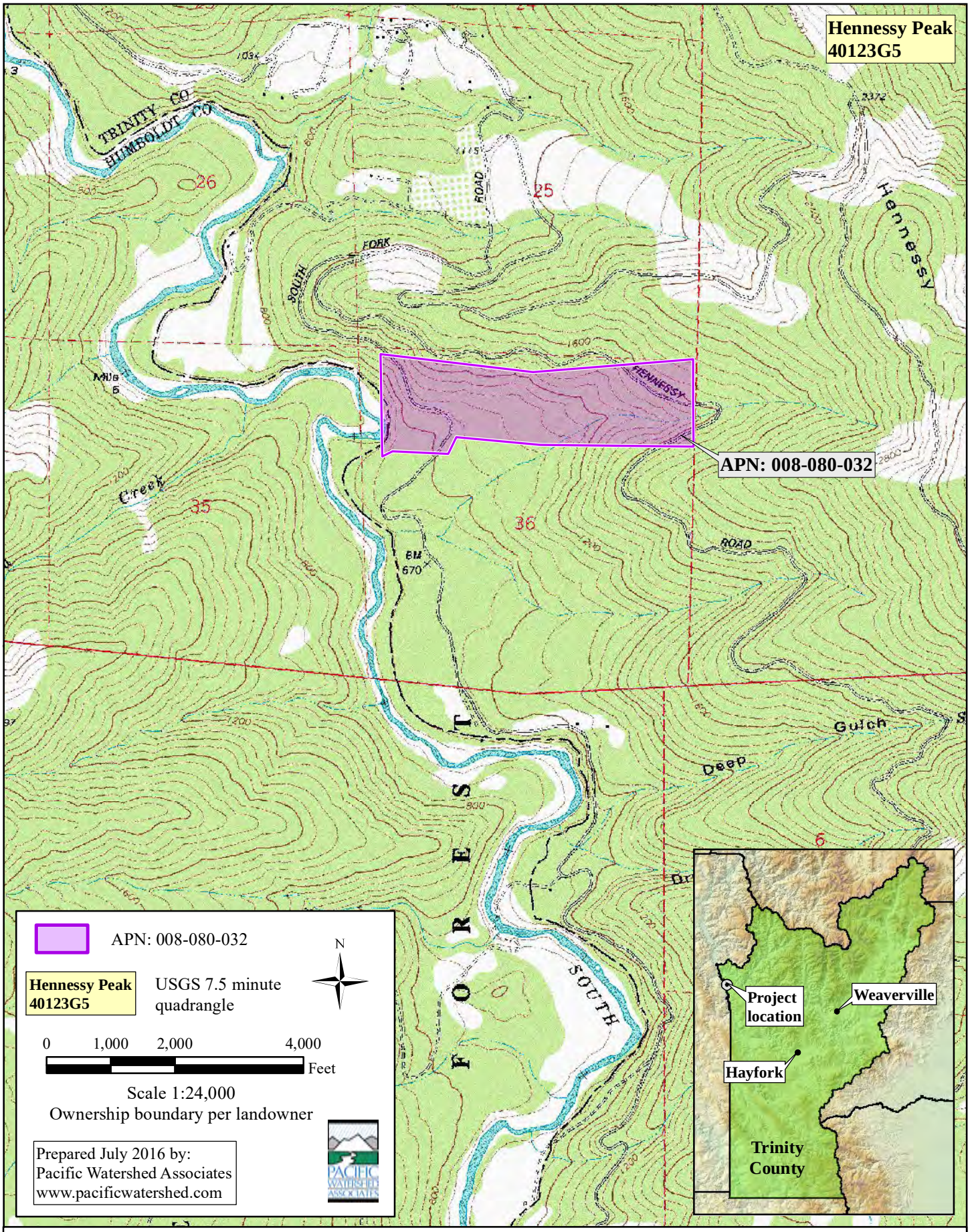

Figure 1. Location map for Water Resource Protection Plan (WRPP), APN 008-080-032, Salyer, Trinity County, California.

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3.0 INTRODUCTION

This Water Resources Protection Plan (WRPP) summarizes the results of Pacific Watershed Associate's (PWA) site visit and subsequent analysis and documentation of site conditions on Trinity County APN 008-080-032 located approximately 5 miles south of Highway 299 on South Fork Road, Salyer, California, as shown on Figure 1 and hereinafter referred to as the "Project Site." The WRPP describes and addresses the required elements and compliance with the 12 Standard Conditions established by the North Coast Regional Water Quality Control Board's (NCRWQCB) Order No. 2015-0023 to protect water quality from cannabis cultivation and related activities (Order). PWA has identified certain areas where the Project Site does not fully meet all 12 of the Standard Conditions of the Order. Section 4, below, identifies and discusses each of the 12 Standard Conditions as related to your property with regard to compliance with the NCRWQCB's Order.

The WRPP contains the following required sections:

1. Legible map (Figure 2) depicting the required site elements and features associated with the 12 Standard Conditions of the Order;
2. Description of current site conditions, compliance with the 12 Standard Conditions, and prioritized remediation or corrective actions needed to bring the site into compliance with the requirements of the Order;
3. A monitoring and inspection plan to ensure BMPs used to protect and prevent impacts to water quality are being implemented as recommended by PWA (implementation monitoring), and that they are effective (effectiveness monitoring);
4. A water use plan, including water sources, water use and storage rights documentation, monthly water use documentation (quantity), and water conservation measures that are employed to prevent adverse impacts to water quality and water quantity in the watershed;
5. List of fertilizers and chemicals stored and used onsite, including a log of the frequency and quantity of these materials used.

4.0 STANDARD CONDITIONS CHECKLIST FOR TRINITY COUNTY APN 008-080-032 as of 6/2/2016

The NCRWQCB has developed a set of 12 Standard Conditions that shall be followed and implemented to protect and improve water quality as required under the NCRWQCB's Order. For a property to become compliant with the Order, all 12 Standard Conditions must be fully satisfied.

The following section details the specific requirements listed and described in the Order for each of the 12 Standard Conditions. Each Standard Condition has from 1 to 6 sub-requirements (*listed in italic type*), each of which must be satisfied to protect water quality and comply with the Order. The checklist developed by PWA for your property indicates: 1) whether the Standard Condition or Standard Condition sub-requirement was adequately met as of the date of PWA's field inspection, 2) PWA's observations and comments related to the Standard Condition or Standard Condition sub-requirement, 3) whether a relevant photo has been taken and included in the WRPP, and 4) recommended corrective or remedial actions that need additional work to meet the requirements of the Order.

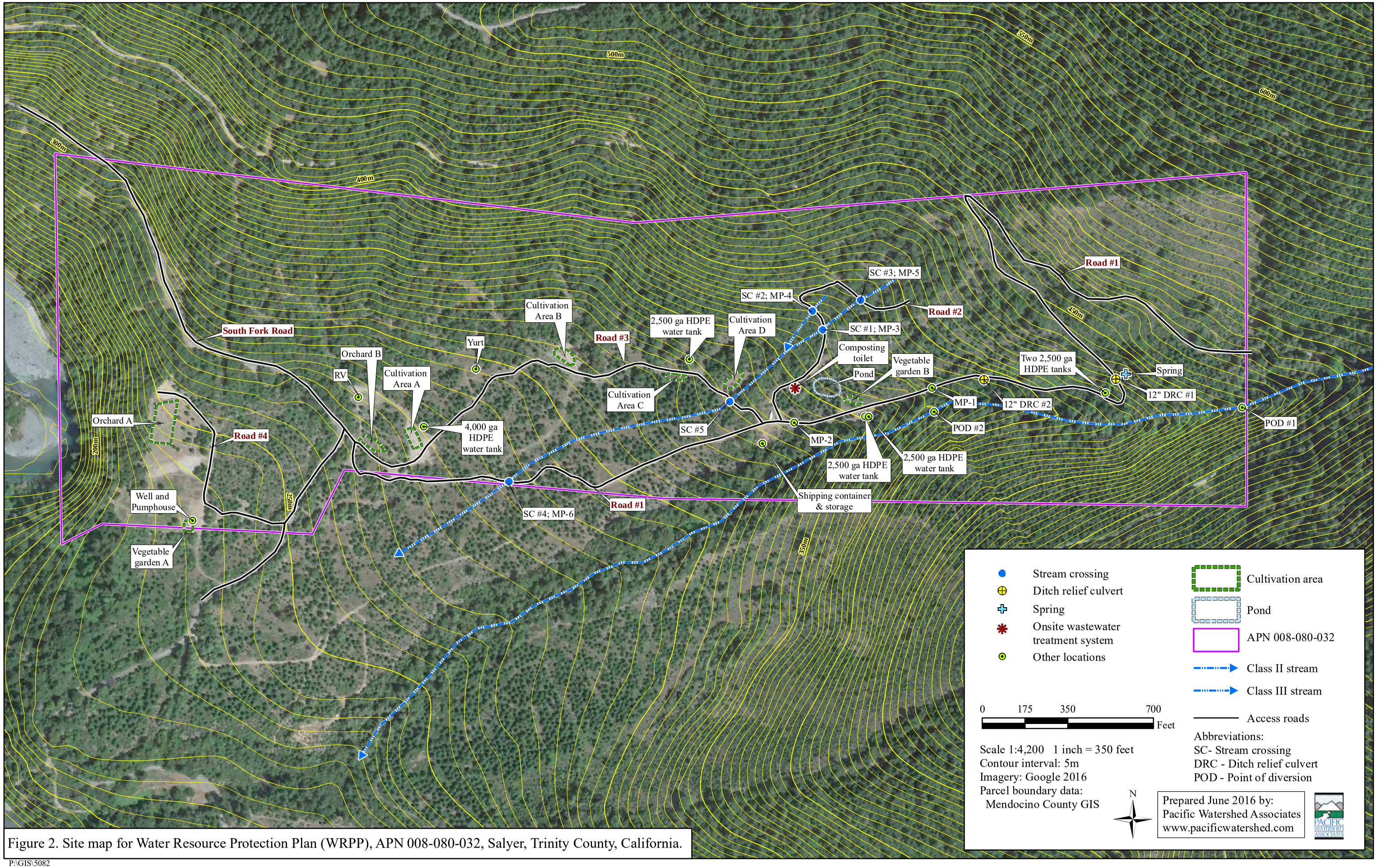

Figure 2. Site map for Water Resource Protection Plan (WRPP), APN 008-080-032, Salyer, Trinity County, California.

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In Section 5 of this WRPP, PWA has provided a summary prioritized list (Table 1) of the recommended treatments and actions to be implemented by you to meet the requirements of the Order. PWA will consult with you to review the WRPP document and findings, and to set a preliminary schedule for implementation of the recommended measures for achieving compliance with the Order. Please note that some of the PWA recommended actions are based on regulatory requirements and deadlines, while others can be scheduled to fit the needs of both you and your property.

4.1 Standard Condition #1. Site Maintenance, Erosion Control and Drainage Features

a) *Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.*

Meets condition? No

Observations/Comments: A long length of Road #1 has insufficient drainage design and/or drainage structures. Concentrated road surface runoff has eroded rill complexes and gullies in the road surface, accelerating sediment production from road surfaces.

Photos: Monitoring Point (MP) #1: photo 1; MP #2: photo 2

Corrective or remedial actions needed: Install multiple road drainage structures and road shaping sufficient to break up long undrained road reaches and disperse road surface runoff.

b) *Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets.*

Meets condition? No

Observations: A long section of undrained road on Road #1 concentrates water and delivers road runoff and road derived sediment to the Class III watercourse at SC #4. Short segments of undrained abandoned road along Road #2 concentrate water and deliver road runoff and eroded sediment to Class III watercourses at SC #1-3.

Photos: No

Corrective or remedial actions needed: Install several road drainage structures and road shaping to break up long undrained road reaches, disperse surface runoff and reduce sediment delivery to streams.

c) *Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.*

Meets condition? No

Observations/Comments: Concentrated road surface runoff from Road #1 could potentially deliver to the Class II stream south of the road. The streambanks of this watercourse are unstable and have frequent failures along the length of the channel.

Photos: Monitoring Point MP #1: photo 1; MP #2: photo 2

Corrective or remedial actions needed: Install several road drainage structures and road shaping to break up long undrained road reach and disperse road surface runoff.

d) *Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are hydrologically disconnected, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.*

Meets condition? No

Observations/Comments: A total of approximately 4,900 linear feet of road cutbank, inboard ditch, and/or driving surfaces along Road #1, #2, and #3 are hydrologically connected to watercourses.

Photos: No

Corrective or remedial actions needed: Install several road drainage structures and employ road shaping to break up long undrained road reaches and disperse road surface runoff.

a. *Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.*

Meets condition? No

Observations/Comments: DRC #1 (12 inch diameter) is unmaintained and the inlet has plugged. Spring flow is diverted down the inboard ditch and flows down the streamside hillslope towards the Class II stream.

Photos: No

Corrective or remedial actions needed: Remove debris from DRC inlet, plug the inboard ditch, and install a dip in the road to the left of the DRC to direct flow across the road in the event of future plugging of the DRC. Winter inspections and clearing of accumulated debris from the DRC inlet should be performed after moderate or greater storm events.

e) *Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.*

Meets condition? Yes

Observations/Comments: Temporarily stockpiled materials were located a great distance from potential receiving waters.

Photos: No

Corrective or remedial actions needed: None

Standard Condition #1. - General comments and recommendations: All identified roads on the property (1.9 mi), were inspected by PWA. Road #1 is the native surfaced main access road for the property, is poorly drained, and exhibits long lengths of rill and gully erosion on the road bed. Road #1 is located above the break-in-slope leading to the large Class II stream flowing along the southern border of the parcel and is separated from the stream by a developed riparian vegetation buffer. Installation of rolling dips and road shaping (outsloping) will be sufficient to suitably hydrologically disconnect the road from watercourses and reduce road surface erosion and sediment production.

Road #2 is a native surfaced, abandoned logging road. Road surfaces in the vicinity of stream crossings #1-3 (SC #1-3) are hydrologically connected to the Class III stream crossings, however, sediment production from the moderately vegetated abandoned road surfaces is occurring at a relatively low rate.

Road #3 is a native surfaced in-use road which is largely disconnected from watercourses with the exception of small road segments to either side of SC #5.

Note: At the time this report was prepared (July, 2016), the applicant has implemented all heavy equipment work components of a road related erosion control plan prepared by PWA to disconnect hydrologically connected road segments and storm-proof all stream crossings identified on the property. Treatments to improve road drainage include outsloping and installation of 19 rolling dips along formerly hydrologically connected segments of Road #1. Road #2 was treated by installation of cross road drains. The corrective actions will be documented and monitored for their effectiveness.

4.2 Standard Condition #2. Stream Crossing Maintenance

a) *Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.*

Meets condition? No
Observations/Comments: Three stream crossings (SC #1-3) on an abandoned logging road (Road #2) were partially dipped out after 2003 timber harvest activities were concluded. Road fill remains in all three crossings and is being actively eroded by streamflow. Stream crossing #4 on Road #1 is a fill crossing on a poorly defined Class III stream channel which will erode during large storm events.
Photos: Monitoring Point MP #3: photo 3; MP #4: photo 4; MP #6: photo 6
Corrective or remedial actions needed: Decommission SCs #1-3 by complete removal of road fill and reestablishment of the natural channel profile and cross section. Upgrade SC#4 by upgrading the crossing to an armored fill capable of passing 100-year recurrence interval streamflow.

b) *Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.*

Meets condition? No
Observations/Comments: Stream crossings #1-4 are fill crossings with no drainage structure to either protect the stream crossing fills or pass peak stream flows.
Photos: Monitoring Point MP #3: photo 3; MP #4: photo 4; MP #6: photo 6
Corrective or remedial actions needed: Decommission SCs #1-3 by complete removal of road fill and reestablishment of the natural channel grade and sideslope configuration. Upgrade SC# 4 by upgrading the crossing to an armored fill capable of passing 100-year recurrence interval streamflow.

c) *Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.*

Meets condition? N/A
Observations/Comments: All stream crossings on the property are on Class III channels.
Photos: No
Corrective or remedial actions needed: None

d) *Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.*

Meets condition? No
Observations/Comments: All stream crossings have sections of hydrologically connected road surfaces delivering to the watercourse crossings. In addition, they are all unculverted fill crossings that are unprotected and eroding with each runoff event.
Photos: No
Corrective or remedial actions needed: Hydrologically connected road surfaces of in-use roads should be disconnected to the highest degree feasible through road shaping (outsloping) and installation of rolling dips. Hydrologically connected road surfaces on abandoned roads should be disconnected by a combination of the installation of decommissioning road drainage treatments (cross road drains), in-place outsloping, and road decompaction (ripping). As recommended above, all stream crossings should either be decommissioned or upgraded to prevent or minimize erosion during peak flow events.

e) *Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.*

Meets condition? N/A
Observations/Comments: No culverted stream crossings on property.
Photos: No
Corrective or remedial actions needed: None

f) *Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible.*

Meets condition? Yes
Observations/Comments: No stream crossings on the property have the potential to divert.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #2. - General comments and recommendations:
All stream crossings identified on the property (SC #1-5) are located on Class III streams with relatively low scour or bedload transport. Stream crossings (SC #1-3) are low volume crossings that can be decommissioned using a small excavator.

Stream crossing # 4 is a very low fill volume crossing and should be upgraded to an armored fill crossing capable of conveying 100-year recurrence interval flows.

Stream crossing SC #5 is a ford crossing of the Class III channel downstream of crossings SC #1-3 where the channel is low gradient and poorly defined. The crossing approaches are relatively well disconnected. No erosion was observed at the crossing and no treatment is recommended for this stream crossing.

Note: At the time this report was prepared (August, 2016), the applicant has decommissioned and implemented all heavy equipment work components of a road related erosion control plan prepared by PWA to disconnect hydrologically connected road segments and storm-proof all stream crossings identified on the property. Treatments to improve road drainage include outsloping and installation of 19 rolling dips along formerly hydrologically connected segments of Road #1. Road #2 was treated by installation of cross road drains. The effectiveness of road upgrading and decommissioning treatments and surface erosion control measures will evaluated by PWA either by future field inspection or by evaluation of photographs supplied by the landowner. The corrective actions will be documented and monitored for their effectiveness.

4.3 Standard Condition #3. Riparian and Wetland Protection and Management

a) *For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class 1 or 2 watercourse or within 50 feet of any Class 3 water course or wetlands.*

Meets condition? No
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: All cultivation and related disturbance at Cultivation Area D should be limited to the northern extend of the clearing (ie. more than 50 ft away from the Class III channel). Two HDPE 2,500 gallon capacity water tanks are located across Road #1 from Vegetable Garden B. These tanks are approximately 100 ft away (slope distance) from the Class II stream and are located on gently sloping ground above the break-in-slope to the inner gorge of the watercourse. These tanks should be relocated or sited such that they are 100 ft or more away from the watercourse, and such that failure of the tanks would not result in delivery to the watercourse.

b) *Buffers shall be maintained at natural slope with native vegetation.*

Meets condition? Yes
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: None

c) *Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances.*

Meets condition? Yes
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: None

d) *Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.*

Meets condition? Yes
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #3. - General comments and recommendations: The majority of this property was harvested for timber in approximately 2003, where all flat areas in the vicinity of the in-use property roads were clearcut, with only the smallest trees having been retained. A large riparian buffer was retained along the streamside slopes of the Class II stream located on the southern border of the property. The southern extent of Cultivation Area D is approximately 50 feet from the diffuse and poorly defined Class III channel which flows through the center of the property (Figure 2). Cultivation activities and disturbance within Cultivation Area D should be limited to the northern half of the designated area (greater than 50 feet from the watercourse) and should not encroach upon the vegetative buffer along the Class III stream. PWA did not observe any impacts to riparian areas as part of cultivation activities on this parcel.

4.4 Standard Condition #4. Spoils Management

a) *Spoils shall not be stored or placed in or where they can enter any surface water.*

Meets condition? Yes
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: None

b) *Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.*

Meets condition? Yes
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: None

c) *Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.*

Meets condition? Yes
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #4 - General comments and recommendations: Based on field observations it is PWA's opinion that the Project Site is currently compliant with this condition as there were no spoils observed during the Project Site inspections. Graded and disturbed earthen materials at the outlet of rolling dips and outsloped areas along Road #2 resulting from recent implementation of the road related ECP should be treated for surface erosion control by application of erosion control seed and straw mulch where sediment delivery to the Class II or Class III stream could potentially occur. We acknowledge that sediment delivery from these features would be extremely limited in quantity due to the distance from the watercourse and the presence of a well-developed riparian buffer; it may only be required where the road is closest to the stream or located above the areas of steepest streambank.

4.5 Standard Condition #5. Water Storage and Use

a) *Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC 12 watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.*

Meets condition? Unknown
Observations/Comments: See general comment below.
Photos: No
Corrective or remedial actions needed: All surface water diversions should continue to be conducted as stated in the landowner's Lake and Streambed Alteration Agreement (LSA) and according the Small Domestic Use Registration, which is currently being processed by the State Water Resources Control Board Division of Water Rights.

b) *Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.*

Meets condition? Yes
Observations/Comments: Irrigation performed at agronomic rates. Drip system irrigation is performed by automatic timers which deliver the water precisely to each plant during the early morning and late evening hours when evaporation is minimized.
Photos: No

Corrective or remedial actions needed: Water conservation measures should continue to be investigated and employed to minimize flow diversions. Options for rainwater collection should be explored.

c) *For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.*

Meets condition? No

Observations/Comments: Minimal tank storage is currently present on the property. A productive well is present is installed on the property and can be used to supplement stored water from surface water diversions during spring and summer forbearance periods.

Photos: No

Corrective or remedial actions needed: In addition to the pond that is currently being constructed, additional increased water storage is recommended to limit diversion of surface flow to the winter months.

d) *Water is applied using no more than agronomic rates.*

Meets condition? Yes

Observations/Comments: According to the cultivator, water is applied sparingly due to water scarcity, though application was not observed due to the early inspection date.

Photos: No

Corrective or remedial actions needed: Start measuring and recording your diversion, pumping, storage and average water usage on a per plant basis, based on type and size of plant pot, full term versus short season (light deprivation) plant, and type of irrigation, in order to develop a Water Budget for your operation.

e) *Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.*

Meets condition? No

Observations/Comments: Surface water diversion infrastructure consists of two points of diversion (POD #1 and #2) on the Class II channel on the southern property line.

Photos: No

Corrective or remedial actions needed: Spring and summer surface water diversion forbearance periods required by the LSAA and NCRWQCB Order No. 2015-0023 require that an appropriative water right be obtained for surface water diversions. An application for an Emergency Tank Storage Small Domestic Use Registration has been submitted to the SWRCB and is being processed. If the field Registration is not granted by the SWRCB, another appropriative water right will need to be pursued.

An LSAA (Notification No. 1600-2016-0019-R1) has been obtained for the diversions from California Department of Fish and Wildlife (CDFW).

f) Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

Meets condition? Yes

Observations/Comments: Tanks are located on stable slopes on relatively flat land, making it unlikely that water storage structure failures will result in delivery to the stream network. Water storage facilities are routinely maintained by the landowner and every tank is fitted with a working float valve to prevent overfilling. The recently developed pond has been sited by licensed professionals and installed according to engineered design plans.

Photos: Photo 7

Corrective or remedial actions needed: None

Standard Condition #5 - General comments and recommendations: Currently, an appropriative water rights application for the two points of diversion has been submitted to the SWRCB and is in processing. If the Small Domestic Use Registration is not granted for irrigation and domestic uses, and appropriative water right for the surface water diversions must be obtained (Water Right Permit or other appropriate Registration).

A 200,000 gallon capacity pond to store water for irrigation and fire protection has been constructed on the property to provide adequate storage to comply with agency required forbearance periods. The earthwork to construct the pond was conducted according to an engineered design plan and will be finalized by the end of the summer season in 2016.

PWA highly recommends, and state agencies may require, that you install flow meters on your water tanks and/or on your diversion lines, to accurately document your diversion volumes and rates. You will need to document the amount of water you are diverting, storing and using through time. PWA has created a simple log sheet to help you record and monitor your water usage (See Appendix D).

4.6 Standard Condition #6. Irrigation Runoff

a) Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

Meets condition? Yes

Observations/Comments: See general comments below.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #6 - General comments and recommendations: Because irrigation is limited to hand watering with a valve at the terminus of the watering hose to manually turn water on and off, there is a high degree of control. Cultivation Areas A, B, and C are located well away from receiving waters with no chance of irrigation runoff to affect watercourses with agronomic application of irrigation water. Irrigation at Cultivation Area D must be performed either by hand or with controlled and timed drip irrigation. Accidental over-irrigation of crops within Cultivation Area D could potentially drain to the Class III stream on the property just upstream of SC #5.

According to the Order, irrigation and fertilization shall occur at agronomic rates and chemicals shall be applied according to the label instructions and specifications. Agronomic rates are those rates of application of water, fertilizers and other amendments that are sufficient for utilization by the crop being grown, but not at a rate that would result in surface runoff or infiltration below the root zone of the crop being grown.

In the event that irrigation runoff occurs or could occur, you shall ensure that contaminated runoff does not enter nearby watercourses. This can be accomplished by constructing or designing containment measures, including sediment basins, berms, infiltration ditches and/or other Best Management Practices (BMPs), as needed, to contain and control surface runoff (see Appendix A).

4.7 Standard Condition #7. Fertilizers and Soil Amendments

a) *Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.*

Meets condition? Yes
Observations/Comments: Fertilizer material is stored inside a 30 foot shipping container during all seasons. Soil amendments are kept under covered structures or tarped in cultivation areas during the growing season. Soil amendment materials are removed from cultivation areas and stored in covered storage or permanently winterized by covering with weighted tarps during the wet season.
Photos: Photo 8
Corrective or remedial actions needed: Soil amendments, potting soils, compost and fertilizers shall continue to be stored under a roof or tarped during the wet season. Also see general comments and recommendations below.

b) *Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.*

Meets condition? Unknown

Observations/Comments: Based on verbal communication with the cultivator, the recommended application rates are being followed.
Photos: No
Corrective or remedial actions needed: You must keep detailed records of any fertilizers and/or other soil amendments you use in your operations. They can be recorded on log sheets such as those provided in Appendix E or by using some other record keeping method. Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided. Also see general comments and recommendations below.

c) *Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.*
Meets condition? No
Observations/Comments: The cultivation area is located on low gradient topography and has a wide vegetative buffer and therefore does not present a significant threat to water quality. However, pots are left uncovered over the winter so that the used soil can be leached clean of residual nutrients.
Photos: No
Corrective or remedial actions needed: Plant cover crops in spent pots and holes to enrich soil and lock up nutrients. If you plan to burn the plant stalks, you'll first need to obtain burn permits from CAL FIRE and the North Coast Unified Air Quality Management District (or relevant jurisdiction for your area). You can then, incorporate the ash into the pots or planting holes prior to planting the cover crop to add minerals and recycle the ash.

Standard Condition #7 - General comments and recommendations: Based on field observations PWA noted that fertilizers and soil amendments were being properly stored. During the growing season, growing amendments will either be stored within the shipping container or under tarps such that they are protected from the elements. Fertilizers and amendments were reported to be organic and applied according to packaging instructions. Usage is diminished or eliminated toward the end of the growing season. No soil amendments should be left, tarped or otherwise, in Cultivation Area D during the wet season, as this cultivation area is close to a Class III channel.

Under the Order, you are required to keep track of the timing and volume of fertilizers and other soil amendments that are applied. This can be done using a simple log form we have provided in Appendix E.

4.8 Standard Condition #8. Pesticides/Herbicides

a) *At the present time, there are no pesticides or herbicides registered specifically for use directly on cannabis and the use of pesticides on cannabis plants has not been reviewed for safety, human health effects, or environmental impacts. Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and*

labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products shall be consistent with product labelling and any products on the site shall be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

Meets condition? Yes

Observations/Comments: Neither pesticides nor herbicides were observed on the property at the time of our inspection. The landowner stated that only organic fertilizers and chemicals will be employed and recommended application rates will be followed.

Photos: Photo 8

Corrective or remedial actions needed: All pesticides, herbicides and related materials (e.g., fungicides) must be used and applied consistent with product labeling. When present, these chemicals should be stored within enclosed buildings in such a way they cannot enter or be released into surface or ground waters.

Standard Condition #8 - General comments and recommendations: No pesticide or herbicide chemicals were observed on the site during our inspection. When present, pesticides and herbicides should be stored within enclosed buildings in such a way they cannot enter or be released into surface or ground waters.

For the health of the environment and your workers, you are encouraged to utilize organic or biologic controls, rather than highly toxic petro-chemicals, to prevent pest and mildew problems. Several safe alternatives are available.

Under the Order you are required to keep records (logs) of the timing and volume of pesticides and herbicides used in your operations. This can be done using a simple log form, such as the one included in Appendix D. Additionally, for any pesticide use you must comply with any Pesticide Registration Requirements. See Appendix E2 included in the NCRWQCB Order, or on their web site at:
http://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2015/150728_Appendix_E2_DPR_MJ%20Pesticide%20Handout.pdf

4.9 Standard Condition #9. Petroleum Products and other Chemicals

a) *Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.*

Meets condition? Yes

Observations/Comments: Five 5-gallon capacity gas cans were onsite during the inspection. Note that when petroleum products are onsite they will need to be stored under cover and off the ground and in a secondary containment basin (tote, tub, etc.). Two approximately 30 lb refillable liquid propane gas tanks were observed to be

affixed to the RV onsite and an approximately 20 lb refillable liquid propane gas tank was observed attached to an outdoor gas grill.
Photos: Photos 8-9
Corrective or remedial actions needed: None

b) *Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.*
Meets condition? No
Observations/Comments: Gasoline use on the property is limited to power an ATV used for transportation around the property, small water pumps, and a small generator.
Photos: No
Corrective or remedial actions needed: All petroleum products onsite need to be stored under cover and in a secondary containment basin (tote, tub, etc.).

c) *Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.*
Meets condition? N/A
Observations/Comments: N/A
Photos: No
Corrective or remedial actions needed: None

d) *Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.*
Meets condition? No
Observations/Comments: No spill prevention cleanup kit is kept onsite to help clean up small spills.
Photos: No
Corrective or remedial actions needed: Have an appropriately sized spill prevention cleanup kit onsite at all times to help clean up small spills.

e) *Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.*
Meets condition? N/A
Observations/Comments: N/A
Photos: No
Corrective or remedial actions needed: None

Standard Condition #9 - General comments and recommendations: There are no large generators or fuel storage containers on the Project Site other than five small gas cans and 3 propane tanks used exclusively for an outdoor grill and RV appliances.

Note that the State of California requires an owner or operator of a facility to complete and submit a Hazardous Material Business Plan (HMBP) if the facility handles a hazardous material or mixture containing a hazardous material that has a quantity at any one time

during the reporting year equal to or greater than: 55 gallons (liquids), 500 pounds (solids), or 200 cubic feet for compressed gas (propane) used for the cultivation operations. If at any time during the year your operations exceed any one of these quantities, you need to prepare and file a HMBP for your operation. Information regarding HWBPs can be found at:
http://www.caloes.ca.gov/for-businesses-organizations/plan-prepare/hazardous-materials/hazmat-business-plan

Additionally, while it is not explicitly stated in the Order, the Department of Environmental Health in many counties also require that anyone that has over 55 gallons or more of any petroleum liquid at any time of the year, including fuels and waste oil, develop a HMBP.

Finally, the Order requires that suitable spill cleanup materials be present onsite if petroleum materials are used for cultivation activities. Hazardous materials spill cleanup materials may include natural or synthetic sorbent materials, shovel, water-tight sealable drum, and straw.

4.10 Standard Condition #10. Cultivation-Related Wastes

a) *Cultivation-related wastes including, but not limited to, empty soil/soil amendment/ fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwater.*

Meets condition? Yes
Observations/Comments: The Project Site was clean upon PWA's site inspection.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #10 - General comments and recommendations: Based on field observations, it is PWA's opinion that the Project Site was compliant with the cultivation-related wastes condition.

We encourage you to chip or shred your plant stalks and compost them after harvest. If you burn the stalks, you must first obtain berm permits from CAL FIRE and the North Coast Unified Air Quality Management District (or other relevant jurisdiction for your area). You can then recycle the ash and add minerals to the soil by mixing the ash into your spent pots and plant holes prior to planting a cover crop at the end of the season. Other cultivation-related waste can be easily contained by keeping soils and garbage greater than 200 feet from drainage areas and on gentle slopes, tarping or otherwise covering soil piles, and/or by placing straw waddles or other containment structures around the perimeter of spoil piles.

4.11 Standard Condition #11. Refuse and Human Waste

a) *Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.*

Meets condition? No
Observations/Comments: Currently, a composting toilet is utilized to handle human waste on the property. No Onsite Wastewater Treatment System is currently present.
Photos: Photos 9-10
Corrective or remedial actions needed: Obtain a Trinity County permit for the existing composting toilet and/or install a permitted OWTS.

b) *Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.*

Meets condition? Yes
Observations/Comments: The Project Site was clean at the time of PWA's inspection.
Photos: No
Corrective or remedial actions needed: None

c) *Garbage and refuse shall be disposed of at an appropriate waste disposal location.*

Meets condition? Yes
Observations/Comments: The Project Site was clean at the time of PWA's inspection. The operator periodically hauls refuse offsite and disposes of said refuse at an appropriate waste disposal facility.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #11 - General comments and recommendations: The Project Site currently has a well built, but unpermitted, composting toilet. The landowner plans to permit and install an OWTS to service a house to be built in the near future. Additionally, an RV is present on the Project Site and could be periodically serviced to prevent contamination of surface waters by human wastes until a functional and permitted OWTS is installed. Additional observations made on this Project Site are that it is relatively clean and garbage is both secured properly and promptly removed on a regular basis.

The Order requires a County permitted or approved OWTS. PWA recommends starting the permit process to install a septic system and/or permit the existing composting toilet. Based on field observations, the Project Site appears to hold good potential for a standard gravity-fed septic system.

4.12 Standard Condition #12. Remediation/Cleanup/Restoration

a) *Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outsloping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3 sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly.*

Appendix A accompanying the NCRWQCB Order, (and Appendix A in your WRPP), *includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.*

These protection and mitigation measures have been developed to prevent or reduce the environmental impacts and represent minimum, enforceable standards by which cleanup activities shall be conducted under this Order.

Meets condition? Unknown
Observations/Comments: See general comments below.
Photos: No
Corrective or remedial actions needed: None

Standard Condition #12 - General comments and recommendations: Road upgrading and decommissioning work as outlined in PWA's road related ECP has been implemented. Operations took place while weather conditions were favorable and during the work period authorized by the CDFW LSAA. Post construction surface erosion control BMP's required to prevent and reduce sediment delivery from earthwork performed under the ECP should be completely in place prior to the onset of rainfall in the fall of 2016. Additional treatments to permanently upgrade surface water diversion infrastructure at Points of Diversion #1 and #2 are expected to be performed during the period of lowest flow in 2016, as described in the pertinent LSAA.

5.0 PRIORITIZED CORRECTIVE ACTIONS AND SCHEDULE TO REACH FULL COMPLIANCE

The following check list should be followed to become fully compliant with the Order. Please see the detailed comments and recommendations above for a more complete description of the problems and the needed corrective actions and monitoring requirements.

Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)

Standard Condition Requiring Action		Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Map Point and Photo #	Estimated Cost	Date Completed
1 – Site Maintenance, Erosion Control and Drainage Features	1a, b, c, d, e	High	2016	Completely implement the road related ECP developed by PWA by installing multiple road drainage features and conducting road shaping as described in the plan and laid out on the Project Site. PWA understands that all construction with heavy equipment has been performed and only surface erosion control BMPs remain to be implemented.	Roads #1-3 Photos #1-2	$7,000	
2 – Stream Crossing Maintenance	2a, b, d	High	2016	Completely implement the elements of the road related ECP developed by PWA relevant to stream crossings by decommissioning SC #1-3 and upgrading SC #4-5. PWA understands that all construction with heavy equipment has been performed and only surface erosion control BMPs remain to be implemented.	SC #1-5 Photos #3-6	$7,000	
3 – Riparian and Wetland Protection and Management	3a	Moderate	2017	Cultivation and cultivation related disturbance at Cultivation Area D needs to be located 50 feet or more from the adjacent Class III stream. Relocate plants and walkways to provide a 50 ft buffer from the watercourse.	-	-	
	3a	Moderate	2017	Two 2,500 gallon water tanks are located to the south, across Road #1 from Vegetable Garden B. These tanks are approximately 100 ft from the Class II watercourse and should be relocated to be >100 ft from the watercourse and not pose a threat of delivery in the event of tank failure.	-	-	

Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)

Standard Condition Requiring Action		Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Map Point and Photo #	Estimated Cost	Date Completed
5 – Water Use	5b	Moderate	2017-2018	Rainwater catchment systems should be investigated for filling the pond and for adding and filling additional storage tank capacity.	-	-	
	5c	High	2017	Finalize construction of the off-stream irrigation pond. PWA understands that all heavy equipment work required to construct the pond has been conducted and only installation of the pond liner and post construction surface erosion control BMPs remain to be performed.	Pond	$35,000	
	5e	Moderate	2017	Continue to file Supplemental Statements of Diversion and Use until the pending Small Domestic Use Registration is approved or denied. If the Registration is denied, obtain an appropriative water right. Alternatively, investigate if sufficient irrigation water can be obtained through groundwater well(s) and/or rainwater collection and storage during the wet season.	-	$0-30,000	
7 - Fertilizer and Amendment Use	7b	Moderate	2016 and then annually	Document fertilizer and amendment use on log sheets provided in Appendix E. Apply only at agronomic rates.	-	-	
	7c	Moderate	2016	Plant cover crops in planting pots or holes at the end of the season to help build soil health and prevent leaching of nutrients out of the cultivation area. If plant stalks are disposed of by burning, mix the ash into the pots prior to planting the cover crop to enrich the spent soil with minerals.	-	$50 annually	
9 – Petroleum Products and Other Chemicals	9b	Moderate	2016	Store all petroleum products under cover and in a secondary containment basin (tote, tub, etc.).	Photo #8	$5	
	9d	Moderate	2016	Acquire spill prevention supplies and place where easily accessible in case of an accidental spill.	-	$90	
11 – Refuse and Human Waste	11a	Moderately high	2017-2019	Proceed with permitting of composting toilet and/or OWTS siting, design, permitting and installation. You may find you need a traditional septic tank and leach field OWTS to be compliant with the Order.	Photo #10	$100 - $6,000	

Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)

Standard Condition Requiring Action		Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Map Point and Photo #	Estimated Cost	Date Completed
12 – Remediation/ Cleanup/ Restoration	12	High	2016	See 1 and 2 above. Complete installation of all surface erosion BMPs (seeding and mulching) on earthwork performed to implement the road related ECP.	-	$350	

6.0 MONITORING AND INSPECTION PLAN

Under the Order, sites are required to be monitored and inspected periodically to ensure conformance with the 12 Standard Conditions. In most cases, inspections and records of inspections identify conditions that have been corrected and are now in compliance; conditions that remain in compliance; and conditions that have changed and may no longer be in compliance with the Order. An inspection and monitoring plan is used to document these conditions, identify problems and make corrections using best management practices (BMPs) to protect water quality (Appendix A).

Monitoring Plan – Please refer to Appendix B and Figure 2 to review the monitoring plan and specific monitoring points for which you are responsible.

Monitoring guidelines and reporting standards have been created by the NCRWQCB as part of the Order. Monitoring of the Project Site includes visual inspection and photographic documentation of each feature of interest listed on the Project Site map, with new photographic documentation recorded with any notable changes to the feature of interest.

Site inspection schedule - According to the NCRWQCB, periodic inspections should include visual inspection of the site, including any management measures/practices, to ensure they are being implemented correctly and are functioning as expected. Inspections include photographic documentation of any controllable sediment discharge sites, as identified on the site map, and a visual inspection of those locations on the site where pollutants or wastes, if uncontained, could be transported into receiving waters, and those locations where runoff from roads or developed areas drains into or towards surface water.

At a minimum, sites shall be inspected at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to prevent or minimize discharges of waste or pollutants to surface water:

1) Before and after any significant alteration or upgrade to a given stream crossing, road segment, or other controllable sediment discharge site. Inspection should include photographic documentation, with photo records to be kept onsite.
2) Prior to October 15th to evaluate site preparedness for storm events and stormwater runoff.
3) Following the accumulation of 3 inches cumulative precipitation (starting September 1st) or by November 15th, whichever is sooner.
4) Following any rainfall event with an intensity of 3 inches precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service by entering the site zip code at http://www.srh.noaa.gov/forecast; Pick the nearest or most relevant zip code and then select the 3 day history that will also show precipitation totals.

Inspection and Monitoring Checklist – Appendix B contains a checklist data form that will be used by the landowner and/or operator to: 1) document inspection dates, 2) document visual and photographic inspection results, 3) describe remediation and management measures that are being applied, 4) identify new problems and their treatments, and 5) document the progress and effectiveness of implementing remedial and corrective measures that are needed to meet the 12 Standard Conditions, as outlined in this WRPP. Appendix C contains photo documentation of your

monitoring points and will need to be updated as corrective treatments are implemented and treatments are monitored and evaluated over time.

Annual Reporting – An Annual Report is to be submitted directly to the NCRWQCB or to PWA (through our 3rd Party Program). The information in the annual reporting form must be submitted by March 31st of each year. The reported information is to be reflective of current site conditions, and includes monitoring data and tasks accomplished to protect water quality. Among other things, the report includes such items as the reporting of monthly monitoring data collected during the year (e.g., chemical use, water diversions, water storage, water use, etc.), management measures (BMPs) applied during the year and their effectiveness, and tasks accomplished during the year towards meeting each of the 12 Standard Conditions identified as deficient in this WRPP.

7.0 WATER USE PLAN

Requirements - According to the Order, relevant water right documentation and a record of the quantity of water used monthly shall be kept by the operator. All water sources shall be recorded, including alternative sources such as rain catchment and groundwater, and/or hauled water. A predictive Water Use Plan (WUP) can be developed and refined from the recorded water diversion, storage, and usage data. Other elements of the WUP will include:

- Developing a Water Budget for determining the timing and volume of actual water use on the site. Water related data will be summarized monthly for the preceding month.
- Designing and implementing water conservation measures to reduce water diversion and water use.
- Calculating water storage requirements needed to support cultivation activities during the dry season, and implementing those required storage measures.

The Water Use Plan will also describe water conservation measures and document your approach to ensure that the quantity and timing of water use is not impacting water quality objectives and beneficial uses (including cumulative impacts based on other operations using water in the same watershed). Water use will only be presumed to not adversely impact water quality under one of the following scenarios:

- No surface water diversions occur from May 15th to October 31st.
- Water diversions are made pursuant to a local plan that is protective of instream beneficial uses.
- Other options that may affect water quality: (e.g., percent of flow present in stream; minimum allowable riffle depth; streamflow gage at bottom of Class I stream; AB2121 equations; CDFW instream flow recommendations; promulgated flow objective in Basin Plan; etc.).

Site Water Use Plan -The record of activities, accomplishments and water monitoring results for the Water Use Plan for this site will be logged and recorded in data tables and site records (data forms) included in Appendix D of this WRPP. These will be tracked and kept up-to-date by the landowner or cultivator of the site.

Water Storage and Forbearance - The ultimate goal of the applicant is to accumulate enough water storage capacity on this Project Site to forebear the entire period from May 15th through October 31st. This will ensure the timing of water use is not impacting water quality objectives and beneficial uses. The topography of the Project Site is gently sloping in many of the central areas of the property and is conducive to the safe siting of water tanks in locations where no delivery to a watercourse would occur in the event of failure. Construction of the engineered pond in 2016 will provide ample storage for cultivation activities on the property.

Water Conservation - Water conservation measures currently practiced include growing many of the plants in beds (as compared to above ground pots) and watering late in the afternoon or evening to minimize water loss through evaporation and maximize water up-take by the plants. Starting this year, new water conserving techniques and measuring equipment will be utilized and tested to evaluate effectiveness and efficiency.

Water sources and use – The newly constructed engineered pond will not be fitted with a liner and made ready for storage until the fall of 2016. During the 2016 growing season, approximately 16,500 gallons of HPE tank storage exists on the property. Water is gravity diverted during the winter season from the Class II stream at PODs #1 and #2 and the tanks are filled for summer use. Groundwater will be pumped from a well and used to refill the tanks as needed during the 2016 growing season to meet irrigation demands. Limited diversion of surface water from the Class II stream will be conducted during the forbearance period to meet domestic needs and as specified in the LSAA. During the winter of 2016-2017, surface waters will be diverted at PODs #1 and #2 and utilized to fill the off-stream irrigation storage pond for use during the 2017 forbearance period.

The operator has estimated from observations of water use in previous years that the addition of the engineered pond to existing HDPE storage tank infrastructure will provide enough storage capacity for irrigation needs during the forbearance period. Future tanks or construction of an additional pond in the vicinity of the future home site may be pursued in the 2017 calendar year to ensure that the forbearance period of May 15 to October 31 of each year may be observed for irrigation related surface water diversions. The addition of an Assured Automation multi-jet water measuring device will allow for much more accurate measurement of diverted surface waters and use. PWA recommends that the landowner evaluate the potential for rainwater harvest from structures or from road surface runoff to supplement existing water sources.

Over the course of the current season, water use will be documented using the log forms attached in Appendix D. As more accurate data is gathered, refined targets can be made to ensure adequate storage exists to protect downstream water quality and beneficial uses during the driest time of the year.

8.0 LIST OF CHEMICALS

The WRPP must contain a list of chemicals being stored onsite, in addition to quantities used and frequency of application. These include fertilizers/soil amendments, pesticides, herbicides, fungicides, petroleum products and other chemicals used in, or associated with, your cultivation activities and related operations.

Because this is the first year of enrollment, information regarding chemical use and storage is deficient or anecdotal. Appendixes E and F contain monitoring forms that should be used to list the chemical inventory record over time, as supplies are added to the site and used during the growing season. The landowner or operator will use these forms to track the types, storage volumes, timing of application, and volume of use of these products throughout the year. The initial chemicals and amendment list that may be used and stored onsite include:

Fertilizers and amendments:
25 gallons of Age Old Organics "Age Old Grow": 12-6-6
25 gallons of Age Old Organics "Age Old Bloom": 5-10-5
Beneficial Living Center "Bloom Synthesis" 6-14-6
Beneficial Living Center "Veg Synthesis" 16-4-8

Pesticides, Herbicides, and Fungicides:
No pesticides, herbicides, or fungicides are currently used on the property.

Petroleum and Other Chemicals:
Gasoline
LPG for domestic uses

9.0 LANDOWNER/LESSEE CERTIFICATION/SIGNATURES

This Water Resource Protection Plan (WRPP) has been prepared by Pacific Watershed Associates, an approved Third Party Program acting on behalf of the North Coast Regional Water Quality Control Board (NCRWQCB).

"I have read and understand this WRPP, including Section 2.0 – Certifications, Conditions and Limitations. I agree to comply with the requirements of the California Regional Water Quality Control Board North Coast Region Order No. 2015-0023 (Waiver of Waste Discharge Requirements and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects in the North Coast Region), including the recommendations and actions listed in this WRPP."

Name of Legally Responsible Person (LRP): _____

Title (owner, lessee, operator, etc.): _____

Signature: _____ Date: _____

WRPP prepared by (if different from LRP): **Pacific Watershed Associates, Inc.**

WRPP prepared and finalized on (date): _____

Signature: _____ Date: _____

Best Management Practices for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects

I. Introduction

Best management practices (BMPs) provided here may be applicable to prevent, minimize, and control the discharge of waste and other controllable water quality factors associated with site restoration/cleanup/remediation and site operations and maintenance. These BMPs are all considered enforceable conditions under the Order as applicable to a given site, and are referenced by and made conditions in the mitigated negative declaration (CEQA document) for the Order, as well.

This appendix to Order No. R1-2015-0023 includes section II. Standard BMPs for Construction, section III. BMPs for Site Maintenance and Operations (per standard conditions), and section IV. References. For additional BMP suggestions, staff encourage consultation of the various manuals listed in section IV. References, many of which are available online for free.

II. Standard BMPs for Construction

Where applicable during restoration, remediation, cleanup, or site maintenance activities, the following BMPs will be used.

A. General BMPs to Avoid or Minimize Adverse Impacts

Temporal Limitations on Construction

1. To avoid impacting migrating fish and causing erosion and sedimentation of the stream channel, the project work season shall be from May 1 to October 15. If operations are to be conducted during the winter period from October 15 to May 1, a winter period operating plan must be incorporated into the project work plan. This plan shall include specific measures to be taken in the winter operating period to avoid or substantially lessen erosion and sedimentation into surface waters.
2. A 2-day (48-hour) forecast[1] of rain shall be the trigger for temporary cessation of project activities and winterization/erosion protection of the work site.

[1] Any weather pattern that is forecasted by NOAA to have a 50% or greater probability of producing precipitation in the project area. The permittee shall obtain and keep for record likely precipitation forecast information from

Limitation on Earthmoving

3. Disturbance to existing grades and vegetation shall be limited to the actual site of the cleanup/remediation and necessary access routes.
4. Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
5. Disturbance to native shrubs, woody perennials or tree removal on the streambank or in the stream channel shall be avoided or minimized. If riparian trees over six inches dbh (diameter at breast height) are to be removed, they shall be replaced by native species appropriate to the site at a 3:1 ratio. Where physical constraints in the project area prevent replanting at a 3:1 ratio and canopy cover is sufficient for habitat needs, replanting may occur at a lesser replacement ratio.
6. If shrubs and non-woody riparian vegetation are disturbed, they shall be replaced with similar native species appropriate to the site.
7. Whenever feasible, finished grades shall not exceed 1.5:1 side slopes. In circumstances where final grades cannot achieve 1.5:1 slope, additional erosion control or stabilization methods shall be applied as appropriate for the project location.
8. Spoils and excavated material not used during project activities shall be removed and placed outside of the 100-year floodplain, and stored/disposed of in compliance with Order conditions related to spoils management.
9. Upon completion of grading, slope protection of all disturbed sites shall be provided prior to the rainy season through a combination of permanent vegetative treatment, mulching, geotextiles, and/or rock, or equivalent.
10. Vegetation planting for slope protection purposes shall be timed to require as little irrigation as possible for ensuring establishment by the commencement of the rainy season.
11. Only native plant species shall be used with the exception of non-invasive, non-persistent grass species used for short-term vegetative cover of exposed soils.
12. Rock placed for slope protection shall be the minimum necessary to avoid erosion, and shall be part of a design that provides for native plant revegetation and minimizes bank armoring.

Limitations on Construction Equipment

13. Dischargers and/or their contractors shall ensure that chemical contamination (fuel, grease, oil, hydraulic fluid, solvents, etc.) of water and soils is prohibited during routine equipment operation and maintenance.
14. Heavy equipment shall not be used in flowing water. Please refer to BMPs 57 through 64 for dewatering of live streams.

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the National Weather Service Forecast Office (e.g. by entering the zip code of the project's location at http://srh.noaa.gov/forecast).

15. When possible, existing ingress or egress points shall be used or work shall be performed from the top of the creek banks.
16. Use of heavy equipment shall be avoided or minimized in a channel bottom with rocky or cobbled substrate.
17. If project work or access to the work site requires heavy equipment to travel on a channel bottom with rocky or cobbled substrate, wood or rubber mats shall be placed on the channel bottom prior to use by heavy equipment.
18. Heavy equipment shall not introduce chemicals or foreign sediment to the channel (e.g., remove mud from tracks or cover channel work area with plastic sheeting prior to heavy equipment entry).
19. The amount of time this equipment is stationed, working, or traveling within the channel shall be minimized.
20. When heavy equipment is used, any woody debris and stream bank or streambed vegetation disturbed shall be replaced to a pre-project density with native species appropriate to the site. If riparian trees over six inches dbh are to be removed, they shall be replaced by native species appropriate to the site at a 3:1 ratio per BMP 5.
21. The use or storage of petroleum-powered equipment shall be accomplished in a manner that prevents the potential release of petroleum materials into waters of the state (Fish and Game Code 5650). To accomplish this, the following precautionary measures shall be followed:
    - Schedule excavation and grading activities for dry weather periods.
    - Designate a contained area for equipment storage, short-term maintenance, and refueling. Ensure it is located at least 50 feet from waterbodies.
    - Inspect vehicles for leaks and repair immediately.
    - Clean up leaks, drips and other spills immediately to avoid soil or groundwater contamination.
    - Conduct major vehicle maintenance and washing offsite (except as necessary to implement BMP 18).
    - Ensure that all spent fluids including motor oil, radiator coolant, or other fluids and used vehicle batteries are collected, stored, and recycled as hazardous waste offsite.
    - Ensure that all construction debris is taken to appropriate landfills and all sediment disposed of in upland areas or offsite, beyond the 100-year floodplain.
    - Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. If necessary for dust control, use only a minimal amount of water.
    - Sweep up spilled dry materials immediately.

Revegetation and Removal of Exotic Plants

22. The work area shall be restored to pre-project work condition or better.

23. All exposed soil resulting from the cleanup/restoration activities shall be revegetated using live planting, seed casting or hydroseeding.
24. Any stream bank area left barren of vegetation as a result of cleanup/restoration activities shall be stabilized by seeding, replanting, or other means with native trees, shrubs, and/or grasses appropriate to the site prior to the rainy season in the year work was conducted.
25. Soil exposed as a result of project work, soil above rock riprap, and interstitial spaces between rocks shall be revegetated with native vegetation by live planting, seed casting, or hydroseeding prior to the rainy season of the year work is completed.
26. The spread or introduction of exotic plant species shall be avoided to the maximum extent possible by avoiding areas with established native vegetation during cleanup/restoration activities, restoring disturbed areas with appropriate native species, and post-project monitoring and control of exotic species.
27. Removal of invasive exotic species is strongly recommended. Mechanical removal (hand tools, weed whacking, hand pulling) of exotics shall be done in preparation for establishment of native perennial plantings.
28. Revegetation shall be implemented after the removal of exotic vegetation occurs. Erosion control implementation shall be timed in accordance with BMPs 1 and 2.
29. Native plants characteristic of the local habitat shall be used for revegetation when implementing and maintaining cleanup/restoration work in riparian and other sensitive areas. Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
30. Annual inspections for the purpose of assessing the survival and growth of revegetated areas and the presence of exposed soil shall be conducted for three years following project work.
31. Dischargers and/or their consultant(s) or third party representative(s) shall note the presence of native/non-native vegetation and extent of exposed soil, and take photographs during each inspection.
32. Dischargers and/or their consultant(s) or third party representative(s) shall provide the location of each work site, pre- and post-project work photos, diagram of all areas revegetated and the planting methods and plants used, and an assessment of the success of the revegetation program in the annual monitoring report as required under the Order.

Erosion Control

33. Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season. Any continuing, approved project work conducted after October 15 shall have erosion control works completed up-to-date and daily.

34. Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
35. Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
36. Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
37. Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
38. Soils exposed by cleanup/restoration operations shall be seeded and mulched to prevent sediment runoff and transport.

Miscellaneous

39. During temporary stream crossing siting, locations shall be identified where erosion potential is low. Areas where runoff from roadway side slopes will spill into the side slopes of the crossing shall be avoided.
40. Vehicles and equipment shall not be driven, operated, fueled, cleaned, maintained, or stored in the wet or dry portions of a waterbody where wetland vegetation, riparian vegetation, or aquatic organisms may be impacted.
41. Riparian vegetation, when removed pursuant to the provisions of the work, shall be cut off no lower than ground level to promote rapid re-growth. Access roads and work areas built over riparian vegetation shall be covered by a sufficient layer of clean river run cobble to prevent damage to the underlying soil and root structure. The cobble shall be removed upon completion of project activities.
42. Avoidance of earthwork on steep slopes and minimization of cut/fill volumes, combined with proper compaction, shall occur to ensure the area is resilient to issues associated with seismic events and mass wasting. If cracks are observed, or new construction is anticipated, consultation with a qualified professional is appropriate.
43. Operations within the 100-year floodplain shall be avoided. Refuse and spoils shall not be stored within the hundred-year floodplain. If roads are located within the 100-year floodplain, they shall be at grade; bridges shall have vented approaches and bridge deck shall be above anticipated 100-year flood water surface elevations. Consultation with a qualified professional is required for project work within the floodplain. .
44. Project work-related dust shall be controlled. Dust control activities shall be conducted in such a manner that will not produce sediment-laden runoff. Dust control measures, including pre-watering of excavation/grading sites, use of water trucks, track-out prevention, washing down vehicles/equipment before leaving site, and prohibiting grading/excavation activities during windy periods, shall be implemented as appropriate.

45. Short term impacts from project work-related emissions can be minimized via retrofitting equipment and use of low emissions vehicles when possible.
46. Position vehicles and other apparatus so as to not block emergency vehicle access.

B. BMPs for Specific Activities

Critical Area Planting, Channel Vegetation and Restoration and Management of Declining Habitats

The following measures shall be employed:

47. Plant materials used shall be native to the site and shall be locally collected if possible.
48. Straw mulch shall be applied at a rate of 2 tons per acre of exposed soils and, shall be secured to the ground.
49. When implementing or maintaining a critical area planting above the high water line, a filter fabric fence, straw wattles, fiber rolls and/or hay bales shall be utilized to keep sediment from flowing into the adjacent water body.

Structure for Water Control and Stream Crossings

These practices shall be used generally to replace or retrofit existing culverts and to install culverts where water control is needed at a stream crossing or road ditch to restore natural hydrology, and to reduce potential diversions and road-related erosion. In addition to the general limitations set forth in the previous section, the following measures shall be employed for these types of projects:

50. Culvert fill slopes shall be constructed at a 2:1 slope or shall be armored with rock.
51. All culverts in fish-bearing streams and in streams where fish have historically been found and may potentially re-occur, shall be designed and constructed consistent with NMFS Southwest Region's Guidelines for Salmonid Passage at Stream Crossings (NMFS 2000) and CDFG's Culvert Criteria for Fish Passage (CDFG 2002).

Limitations on Work in Streams and Permanently Ponded Areas

52. If it is necessary to conduct work in or near a live stream, the work space shall be isolated to avoid project activities in flowing water.
53. Water shall be directed around the work site.
54. Ingress/egress points shall be utilized and work shall be performed from the top of the bank to the maximum extent possible.
55. Use of heavy equipment in a channel shall be avoided or minimized. Please refer to BMPs 57 through 64 for dewatering of live streams. The amount of time construction equipment is stationed, working or traveling within the creek bed shall be minimized.

56. If the substrate of a seasonal pond, creek, stream or water body is altered during work activities, it shall be returned to approximate pre-construction conditions after the work is completed.

Temporary Stream Diversion and Dewatering: All Live Streams

57. For project work in a flowing or pooled stream or creek reach, or where access to the stream bank from the channel bottom is necessary, the work area shall be isolated with the use of temporary cofferdams upstream and downstream of the work site and all flowing water shall be diverted around the work site throughout the project period.
58. Other approved water diversion structures shall be utilized if installation of cofferdams is not feasible.
59. Cofferdam construction using offsite river-run gravel and/or sand bags is preferred. If gravel materials for cofferdams are generated onsite, measures shall be taken to ensure minimal disturbance to the channel, such as careful extraction from elevated terraces. The upstream end of the upstream cofferdam shall also be reinforced with thick plastic sheeting to minimize leakage.
60. Gravity diversions are preferred to pumping as dewatering techniques. If pumping is required to supplement gravity diversions, care shall be taken to minimize noise pollution and prevent the pump or generator-borne pollution to the watercourse.
61. The diversion pipe shall consist of a large plastic HDPE or ADS pipe or similar material, of a sufficient diameter to safely accommodate expected flows at the site during the full project period.
62. The pipe shall be protected from project activities to ensure that bypass flows are not interrupted.
63. Continuous flow downstream of the work site shall be maintained at all times during project work.
64. When project work is complete, the flow diversion structure shall be removed in a manner that allows flow to resume with a minimum of disturbance to the substrate.

Protection of Sensitive Species

65. Sensitive species - Consult with federal, state and local agencies regarding location of rare, threatened or endangered species.
66. Prior to commencing work, designate and mark a no-disturbance buffer to protect sensitive species and communities.
67. All work performed within waters of the state shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize land disturbances that shall adversely impact the water quality of waters of the state. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

68. All equipment, including but not limited to excavators, graders, barges, etc., that may have come in contact with extremely invasive animals (e.g. zebra mussels or new Zealand mud snails) or plant (e.g., Arundo donax, scotch broom, pampas grass) or the seeds of these plants, shall be carefully cleaned before arriving on site and shall also be carefully cleaned before removal from the site, to prevent spread of these plants.
69. Vegetation shall be established on disturbed areas with an appropriate mix of California native plants and/or seed mix. All initial plantings and seed shall be installed prior to completion of the project work.

III. BMPs for Site Maintenance and Operations (per standard conditions)

The following BMPs are intended to address compliance with the standard conditions. Individual or multiple BMPS may be selected to address compliance with a given standard condition depending on site-specific conditions. BMPs are considered enforceable conditions as applicable to a given site.

A. Site Maintenance, Erosion Control, Drainage Features

70. Drainage of roads, clearings, fill prisms, and terraced areas is critical to ensuring their integrity and to prevent or minimize sediment discharges to watercourses. Proper design and location of roads and other features is critical to ensuring that a road or other feature be adequately drained and is best accomplished through consultation with a qualified professional. If inspection identifies surface rills or ruts, surfacing and drainage likely needs maintenance.
71. Surfacing of exposed/disturbed/bare surfaces can greatly reduce erosion associated with runoff. BMP features such as vegetative ground cover, straw mulch, slash, wood chips, straw wattles, fiber rolls, hay bales, geotextiles, and filter fabric fences may be combined and implemented on exposed/disturbed/bare surfaces as appropriate to prevent or minimize sediment transport and delivery to surface waters. Non-invasive, non-persistent grass species (e.g. barley grass) may be used for their temporary erosion control benefits to stabilize bare slopes and prevent exposure of bare soils to rainfall. If utilized, straw mulch shall be applied at a rate of 2 tons per acre of exposed soils and, if warranted by site conditions, shall be secured to the ground. Consultation with a qualified professional is recommended for successful site-specific selection and implementation of such surface treatments. Guidance literature pertaining to such BMPs is referenced in section IV. of this document.
72. Road surfacing, especially within a segment leading to a watercourse, is critical to prevent and minimize sediment delivery to a watercourse and maintain road integrity for expected uses. Road surfacing can include pavement, chip-seal, lignin, rock, or other material appropriate for timing and nature of use. Steeper sections of road require higher quality rock (e.g. crushed angular versus river-run) to remain in place.

73. Road shaping to optimize drainage includes out-sloping and crowning; shaping can minimize reliance on inside ditches. Drainage structures can include rolling dips and water bars within the road surface and ditch-relief culverts to drain inside ditches. Adequate spacing of drainage structures is critical to reduce erosion associated with runoff. Generally speaking, steep slopes require greater frequency of drainage structures. The drainage structures shall be maintained to ensure capture of and capacity for expected flow. The outlets of the structures shall be placed in such a manner as to avoid discharge onto fill, unstable areas, or areas that can enter a watercourse. If site conditions prohibit drainage structures at an adequate interval to avoid erosion, bioengineering techniques[2] are the preferred solution (e.g. live fascines), but other techniques may also be appropriate including armoring (i.e. rock of adequate size and depth to remain in place under traffic and flow conditions) and velocity dissipaters (e.g. gravel-filled "pillows" in an inside ditch to trap sediment). In the case that inside ditches need maintenance, grade ditches only when and where necessary, since frequent routine mechanical grading can cause erosion of the ditch, undermine banks, and expose the toe of the cutslope to erosion. Do not remove more leaves and vegetation than necessary to keep water moving, as vegetation prevents scour and filters out sediment.
74. Road drainage shall be discharged to a stable location away from a watercourse. Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream. Within areas with potential to discharge to a watercourse (i.e. within riparian areas of at least 200 feet of a stream) road surface drainage shall be filtered through vegetation, slash, or other appropriate material or settled into a depression with an outlet with adequate drainage. Caution should always be exercised with catchment basins in the event of failure.
75. Any spoils associated with site maintenance shall be placed in a stable location where it cannot enter a watercourse. Sidecasting shall be minimized and shall be avoided on unstable areas or where it has the potential to enter a watercourse.
76. Do not sidecast when the material can enter the stream directly or indirectly as sediment. Sidecast material can indirectly enter the stream when placed in a position where rain or road runoff can later deliver it to a channel that connects with the stream.
77. Disconnect road drainage from watercourses (drain to hill slopes), install drainage structures at intervals to prevent erosion of the inboard ditch or gull formation at the hill slope outfall, outslope roads.

[2] A Primer on Stream and River Protection for the Regulator and Program Manager: Technical Reference Circulare W.D. 02-#1, San Francisco Bay Region, California Regional Water Quality Control Board (April 2003) http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stream_wetland/streamprotectioncircular.pdf

78. Ditch-relief culverts shall also be inspected regularly, and cleared of debris and sediment. To reduce plugging, 15 to 24-inch diameter pipes shall be the minimum size considered for ditch relief culverts and shall be informed by site-specific conditions.
79. Grade ditches only when and where necessary, since frequent routine mechanical grading can cause erosion of the ditch, undermine banks, and expose the toe of the cutslope to erosion. Do not remove more grass and weeds than necessary to keep water moving, as vegetation prevents scour and filters out sediment.
80. Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream.

B. Stream Crossing Maintenance

81. Proper maintenance of stream crossings is critical to ensure support of beneficial uses of water. Regular inspection and maintenance is necessary to identify, in a timely manner, if problems are occurring. Crossings include rock fords[3], armored fills with culverts[3], and bridges[3].
82. Rock fords are appropriate when temporary and minor moisture or over-land flow is expected, not typically when a bed and bank is present; exceptions may be justified if warranted by site specific conditions. Additionally, rock fords are appropriate if aquatic life is not present. An adequate layer of crushed angular rock shall be maintained at rock fords such that soil compaction is minimized under expected traffic levels.
83. Stream crossings consisting of armored fills with culverts and bridges are appropriate for streams with defined bed and bank[2]. They shall be sized to ensure the 100-year streamflow event can pass unimpeded. Additionally, crossings shall allow migration of aquatic life during all life stages potentially supported by that stream reach; water depth and velocity can inhibit migration of adult and juvenile fish species.
84. Stream crossing design and installation is best accomplished with the assistance of a qualified professional. Site conditions can change over time (e.g. channel filling or incision); consultation with a qualified professional is appropriate to evaluate maintenance or replacement needs and opportunities.
85. Regular inspection of the stream crossing is appropriate to identify changed conditions within the stream channel (e.g., bank erosion, headward incision, and channel filling).
    - If large wood is accumulated upstream or within the crossing that could impede or deflect flow and result in erosion or debris capture, the wood

[3] Explanation of term, available within the following document (as of the date of the Order): http://www.pacificwatershed.com/sites/default/files/handbook_chapter_download_page.pdf

should generally be removed. In some cases, it may be appropriate to re-orient debris with the streamflow.

- If sediment or debris is accumulated within a culvert and limits flow capacity, the short term solution should generally be to clean out the culvert and place the debris and sediment in a stable location with no potential to discharge into a stream. In some cases a trash rack, post, or other deflection structure at the culvert inlet can reduce plugging.
- If sediment is accumulated in a culvert without other debris accumulation and limits flow capacity, the long term solution may generally involve changing the culvert's slope, diameter, or embedment in the streambed.

86. The roadway adjacent to and over the crossing is an area of potential discharge. All road surfaces approaching a crossing shall be drained before the crossing, adequately filtered through vegetation or other material, and not discharged to a watercourse. If turbid water is discharged at a stream crossing, additional measures to control erosion at the source(s) or to remove sediment prior to discharge shall be implemented. Road surfaces shall be of rock, pavement, or other material appropriate for type and level of use.
87. If a culvert is used, the approaches and fill slopes shall be properly compacted during installation and shall be stabilized with rock or other appropriate surface protection to minimize surface erosion and slumping to the receiving waters. If possible, the road surface over the culvert shall have a critical-dip to ensure that if the culvert becomes plugged, water can flow over the road surface without washing away the fill prism. If site-specific conditions do not allow for a critical dip, alternatives such as emergency overflow culverts, oversized culvers, flared inlets, and debris racks may be warranted.

C. Riparian and Wetland Protection and Management:

88. Buffer width will be in compliance with Tier category.
89. Trees within riparian areas shall be retained for natural recruitment to streams. Large woody debris (LWD) shall be retained in stream or within riparian areas. The size of wood that can be beneficial to the stream will vary depending on the size of the stream (i.e., larger pieces of wood are necessary to withstand flows in large streams). In the event that LWD or trees are disturbed during excavation, care shall be taken to separate the LWD from soil. The pieces shall be stockpiled separately until they can be replaced in appropriate locations to enhance instream or riparian conditions. Placement of instream wood for habitat enhancement should be done under the consultation of a qualified professional and in conformance with applicable regulatory permits.
90. Avoidance of disturbance in riparian areas (within 200 feet of a watercourse) should result in protection and restoration of the quality/health of the riparian stand so as to promote: 1) shade and microclimate controls; 2) delivery of wood to channels, 3) slope stability and erosion control, 4) ground cover, and 5) removal of excess nutrients. This recognizes the importance of the riparian zone

with respect to temperature protection, sediment delivery, its importance with respect to the potential for recruitment of large wood, and removal of nutrients transported in runoff. In the event that past disturbance has degraded riparian conditions, replanting with native species capable of establishing a multi-storied canopy will ensure these riparian areas can perform these important ecologic functions.

D. Spoils Management

To ensure spoil pile stability and to reduce the potential for spoil pile slope failure or transport to waters of the state, the following measures shall be implemented when placing or disposing of spoils onsite:

91. Rip compacted soils prior to placing spoils to prevent the potential for ponding under the spoils that could result in spoil site failure and subsequent sedimentation;
92. Compact and contour stored spoils to mimic the natural slope contours and drainage patterns to reduce the potential for fill saturation and failure;
93. Ensure that spoil materials are free of woody debris, and not placed on top of brush, logs or trees.
94. Spoils shall not be placed or stored in locations where soils are wet or unstable, or where slope stability could be adversely affected.
95. Do not locate spoil piles in or immediately adjacent to wetlands and watercourses.
96. Store spoil piles in a manner (e.g. cover pile with plastic tarps and surround base of pile with straw wattle) or location that would not result in any runoff from the spoil pile ending up in wetlands and watercourses.
97. Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill.
98. Keep temporary disposal sites out of wetlands, adjacent riparian corridors, and ordinary high water areas as well as high risk zones, such as 100-year floodplain and unstable slopes.
99. After placement of the soil layer, track walk the slopes perpendicular to the contour to stabilize the soil until vegetation is established. Track walking creates indentations that trap seed and decrease erosion of the reclaimed surfaces.
100. Revegetate the disposal site with a mix of native plant species. Cover the seeded and planted areas with mulched straw at a rate of 2 tons per acre. Apply jute netting or similar erosion control fabric on slopes greater than 2:1 if site is erosive.

E. Water Storage and Use

WATER USE

101. Conduct operations on a size and scale that considers available water sources and other water use and users in the planning watershed.
102. Implement water conservation measures such as rainwater catchment systems, drip irrigation, mulching, or irrigation water recycling. (Also see BMPs for Irrigation, below)
103. Take measures to minimize water diversion during low flow periods.
104. Options for documentation of water diversions and/or water usage may include the use of water meter devices and date-stamped photographs of water meter readings.
105. Hauled water utilized for irrigation shall be documented via receipt or similar, and show the date, name, and license plate of the water hauler, and the quantity of water purchased.
106. Apply water at agronomic rates (do not overwater plants).

WATER STORAGE

107. If using a water storage tank, do not locate the tank in a flood plain or next to equipment that generates heat. Locate the tank so it is easy to install, access, and maintain.

108. Vertical tanks should be installed according to manufacturer's specifications and placed on firm, compacted soil that is free of rocks/sharp objects and capable of bearing the weight of the tank and its maximum contents. In addition, a sand or pea gravel base with provisions for preventing erosion is highly recommended. Installation sites for tanks 8,000 gallons or more must be on a reinforced concrete pad providing adequate support and enough space to attach a tank restraint system (anchor using the molded-in tie down lugs with moderate tension, being careful not to over-tighten), especially where seismic or large wind forces are present.

109. Horizontal tanks shall be secured with bands and/or hoops to prevent tank movement.
110. Design and construct storage ponds in properly sited locations, off-stream. Plant vegetation along the perimeter of the pond. Construct berms or excess freeboard space around the perimeter of the pond to allow for sheet flow inputs.
111. Provide adequate outlet drainage for overflow of ponds, including low impact designs, to promote dispersal and infiltration of flows.
112. Place proper lining or sealing in ponds to prevent water loss.

113. Storage bladders are not encouraged for long term water storage reliability. If they are utilized, ensure that they are designed to store water, and that they are sited to minimize potential for water to flow into a watercourse in the event of a catastrophic failure. Used bladders (e.g. military surplus bladders) shall be checked for interior residual chemicals and integrity prior to use. Inspect bladder and containment features periodically to ensure integrity.

F. Irrigation Runoff

114. Irrigate at rates to avoid or minimize runoff.
115. Regularly inspect for leaks in mains and laterals, in irrigation connections, or at the ends of drip tape and feeder lines. Repair any found leaks.
116. Design irrigation system to include redundancy (i.e., safety valves) in the event that leaks occur, so that waste of water is prevented and minimized.
117. Recapture and reuse irrigation runoff (tailwater) where possible, through passive (gravity-fed) or active (pumped) means.
118. Construct retention basins for tailwater infiltration; percolation medium may be used to reduce pollutant concentration in infiltrated water. Constructed treatment wetlands may also be effective at reducing nutrient loads in water. Ensure that drainage and/or infiltration areas are located away from unstable or potentially unstable features.
119. Regularly replace worn, outdated or inefficient irrigation system components and equipment.
120. Use mulches (e.g. wood chips or bark) in cultivation areas that do not have ground cover to prevent erosion and minimize evaporative loss.
121. Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
122. Employ rain-triggered shutoff devices to prevent irrigation after precipitation.

G. Fertilizers, Soil Amendments, Pesticides, Petroleum Products, and Other Chemicals

123. Evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over-fertilization.
124. Reference Department of Pesticide Regulations Guidance (see Attachments E-1 and E-2 of Order No. R1-2015-0023)
125. All chemicals shall be stored in a manner, method, and location that ensures that there is no threat of discharge to waters of the state.
126. Products shall be labeled properly and applied according to the label.
127. Use integrated pest management strategies that apply pesticides only to the area of need, only when there is an economic benefit to the grower, and at times when runoff losses are least likely, including losses of organic matter from dead plant material.

128. Periodically calibrate pesticide application equipment.
129. Use anti-backflow devices on water supply hoses, and other mixing/loading practices designed to reduce the risk of runoff and spills.
130. Petroleum products shall be stored with a secondary containment system.
131. Throughout the rainy season, any temporary containment facility shall have a permanent cover and side-wind protection, or be covered during non-working days and prior to and during rain events.
132. Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.
133. Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials shall be covered during non-working days and prior to rain events.
134. Have proper storage instructions posted at all times in an open and conspicuous location.
135. Prepare and keep onsite a Spill Prevention, Countermeasures, and Cleanup Plan (SPCC Plan) if applicable[4].
136. Keep ample supply of appropriate spill clean-up material near storage areas.

H. Cultivation-Related Wastes

137. Cultivation-related waste shall be stored in a place where it will not enter a stream. Soil bags and other garbage shall be collected, contained, and disposed of at an appropriate facility, including for recycling where available. Pots shall be collected and stored where they will not enter a waterway or create a nuisance. Plant waste and other compostable materials be stored (or composted, as applicable) at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.
138. Imported soil for cultivation purposes shall be minimized. The impacts associated with importation of soil include, but are not limited to increased road maintenance and the increased need for spoils management. Use of compost increases the humic acid content and water retention capacity of soils while reducing the need for fertilizer application. In the event that containers (e.g. grow bags or grow pots) are used for cultivation, reuse of soil shall be maximized to the extent feasible.

[4] SPCC plans are required for over 1,320 gallons of petroleum stored aboveground or 42,000 gallons below ground. Additionally, any type of storage container requires an SPCC if it is larger than 20,000 gallons, or if the cumulative storage capacity on-site exceeds 100,000 gallons (Health and Safety Code section 25270-25270.13) A sample SPCC can be found here: http://www.calcupa.net/civica/filebank/blobdload.asp?BlobID=3186

139. Spent growth medium (i.e. soil and other organic medium) shall be handled to minimize discharge of soil and residual nutrients and chemicals to watercourses. Proper handling of spent soil could include incorporating into garden beds, spreading on a stable surface and revegetation, storage in watertight dumpsters, covering with tarps or plastic sheeting prior to proper disposal, and use of techniques to reduce polluted runoff described under Item F. Irrigation Runoff.
140. Other means of handling cultivation-related waste may be considered on a site-specific basis.

I. Refuse and Human Waste

141. Trash containers of sufficient size and number shall be provided and properly serviced to contain the solid waste generated by the project. Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers. Use lined bins or dumpsters to reduce leaking of liquid waste. Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater. Make sure trash container areas are screened or walled to prevent off-site transport of trash. Consider using refuse containers that are bear-proof and/or secure from wildlife. Refuse shall be removed from the site on a frequency that does not result in nuisance conditions, transported in a manner that they remain contained during transport, and the contents shall be disposed of properly at a proper disposal facility.
142. Ensure that human waste disposal systems do not pose a threat to surface or ground water quality or create a nuisance. Onsite treatment systems should follow applicable County ordinances for human waste disposal requirements, consistent with the applicable tier under the State Water Resources Control Board Onsite Waste Treatment System Policy[5].

[5] Available at: http://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf (as of the date of the Order).

IV. References

Handbook for Forest, Ranch, & Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining, and Closing Wildland Roads
http://www.pacificwatershed.com/sites/default/files/handbook_chapter_download_page.pdf

A Water Quality and Stream Habitat Protection Manual for County Road Maintenance in Northwestern California Watersheds
http://www.5counties.org/roadmanual.htm

Construction Site BMP Fact Sheets
http://www.dot.ca.gov/hq/construc/stormwater/factsheets.htm

EPA Riparian/Forested Buffer
http://water.epa.gov/polwaste/npdes/swbmp/Riparian-Forested-Buffer.cfm

Creating Effective Local Riparian Buffer Ordinances
http://www.rivercenter.uga.edu/publications/pdf/riparian_buffer_guidebook.pdf

How to Install Residential Scale Best Management Practices (BMPs) in the Lake Tahoe Basin
http://www.tahoebmp.org/Documents/Contractors%20BMP%20Manual.pdf

Spoil Pile BMPs
http://michigan.gov/documents/deq/deq-wb-nps-sp_250905_7.pdf

Sanctuary Forest Water Storage Guide
http://agwaterstewards.org/images/uploads/docs/1213661598_Water_Storage_Guide.pdf

Natural Resources Conservation Service-USDA, "Ponds – Planning, Design, Construction", Agriculture Handbook
http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_030362.pdf

Division of Safety of Dams size requirements
http://www.water.ca.gov/damsafety/jurischart/

Water Tanks: Guidelines for Installation and Use
http://dnn7.snydernet.com/_pdf/_septic/Septic%20Catalog%202010.pdf

BEST MANAGEMENT PRACTICES (BMP's) University of California Cooperative Extension
http://www.waterboards.ca.gov/sandiego/water_issues/programs/wine_country/docs/updates081910/ucce_bmps.pdf

California Stormwater Quality Association
Section 4: Source Control BMPs
https://www.casqa.org/sites/default/files/BMPHandbooks/sd-12.pdf

CA DOT Solid Waste Management Plan
http://www.dot.ca.gov/hq/construc/stormwater/WM-05.pdf

State Water Resources Control Board Onsite Wastewater Treatment System (OWTS) policy
http://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf

California Stormwater Quality Association
Section 4: Source Control BMPs
https://www.casqa.org/sites/default/files/BMPHandbooks/sd-32.pdf

California Riparian Habitat Restoration Handbook
http://www.conservation.ca.gov/dlrp/watershedportal/InformationResources/Documents/Restoration_Handbook_Final_Dec09.pdf

The Practical Streambank Bioengineering Guide
http://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/idpmcpu116.pdf

150728_KVG_ef_AppendixB_BMP

APPENDIX B: MONITORING PLAN AND PHOTO LOGS

Monitoring Plan – In general, the entire road network, cultivation areas and associated facilities need to be monitored throughout the year to catch any problems that might arise and to monitor the effectiveness of corrective actions which are completed. Refer to Figure 2 for the location of site specific monitoring points that you are responsible for tracking. For this project site, six monitoring points have been designated. Two monitoring points have been established to monitor the effectiveness of road drainage treatments and 4 monitoring points are located at stream crossings treated as components of the road related ECP.

The goal of the monitoring is to ensure the original problem/feature has been effectively treated and that the causal mechanism (concentrated flow or unprotected fill in a watercourse) isn't continuing to erode and potentially deliver to a watercourse. Monitoring points 1 and 2 (MP-1 and MP-2) are located on the roadbed of Road #1 and should allow for evaluation and monitoring of outsloping and rolling dip function. MP-3 through MP-5 are located at each of the decommissioned stream crossings on Road #2 and should allow for evaluation of the effectiveness of channel restoration and post-construction surface erosion control BMPs. If seeding and mulching along the slopes of SCs #1 - #3 is inadequate to prevent erosion and sediment delivery from the recontoured streambanks, additional BMPs must be installed to reduce and control sediment production. MP-6 is located at SC #4 and should allow for the monitoring of the function and effectiveness of the armored fill installed at the site. If the armored fill keyway is not sufficiently large or dipped enough to entirely convey streamflow across the armored keyway, additional rock armor may need to be placed and the size of the keyway increased. Consult with PWA if a problem is detected at any of these monitoring locations or elsewhere on the property.

Site inspection schedule - According to the NCRWQCB, periodic inspections should include visual inspection of the site, including any management measures/practices, to ensure they are being implemented correctly and are functioning as expected. Inspections include photographic documentation of any controllable sediment discharge sites, as identified on the site map, and a visual inspection of those locations on the site where pollutants or wastes, if uncontained, could be transported into receiving waters, and those locations where runoff from roads or developed areas drains into or towards surface water.

At a minimum, sites shall be inspected at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to prevent or minimize discharges of waste or pollutants to surface water:

1) Before and after any significant alteration or upgrade to a given stream crossing, road segment, or other controllable sediment discharge site. Inspection should include photographic documentation, with photo records to be kept on-site.
2) Prior to October 15 to evaluate site preparedness for storm events and stormwater runoff.
3) Following the accumulation of 3 inches cumulative precipitation (starting September 1st) or by November 15th, whichever is sooner.
4) Following any rainfall event with an intensity of 3 inches precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service by entering the site zip code at http://www.srh.noaa.gov/forecast; Pick the nearest or most relevant zip code and then select the 3 day history that will also show precipitation totals.

Photo Log of features of interest and monitoring points before, during, and/or after treatment

Photo #	Monitoring Point	Feature #	Date	Pre-, during, or post-treatment	Description
1	MP-1	Road #1	2/25/16	Pre	Looking down Road #1 (west). A gully in the roadbed can be seen in the photo. This location should be monitored to demonstrate the effectiveness of road drainage treatments.
2	MP-2	Road #1	5/31/16	Pre	Looking up Road #1 (east). Significant rill development in the outboard roadbed can be seen in the photo. This location should be monitored to demonstrate the effectiveness of road drainage treatments.
3	MP-3	SC #1	11/17/15	Pre	Looking to the north and upstream at SC #1 on Road #2. Photo is taken from the outboard edge of the road. This location should be monitored to demonstrate the effectiveness of stream crossing decommissioning and post-construction surface erosion control BMPs.
4	MP-4	SC #2	11/17/15	Pre	Looking to the north and upstream at SC #2 on Road #2. Photo is taken from the outboard edge of the road. This location should be monitored to demonstrate the effectiveness of stream crossing decommissioning and post-construction surface erosion control BMPs.
5	MP-5	SC #3	11/17/15	Pre	Looking to the west at SC #3 on Road #2 from the outboard edge of the road. This location should be monitored to demonstrate the effectiveness of stream crossing decommissioning and post-construction surface erosion control BMPs.
6	MP-6	SC #4	2/25/16	Pre	Looking to the east at SC #4 on Road #1 from the outboard edge of the road. This location should be monitored to demonstrate the effectiveness of upgrading the stream crossing to an armored fill.
7	N/A	Water Storage Tanks	11/17/15	N/A	Photo of two 2,500 gallon capacity HDPE water storage tanks on the property.
8	N/A	Shipping Container	11/10/15	N/A	View of the shipping container and covered storage on the property.
9	N/A	RV	11/10/15	N/A	View of the RV on the property. LPG tanks can be seen on the outdoor grill and RV.
10	N/A	Compost Toilet	11/17/15	N/A	View of the existing composting toilet facility on the property.

Photo #	Monitoring Point	Feature #	Date	Pre-, during, or post-treatment	Description

APPENDIX C: PHOTO DOCUMENTATION OF MONITORING POINTS

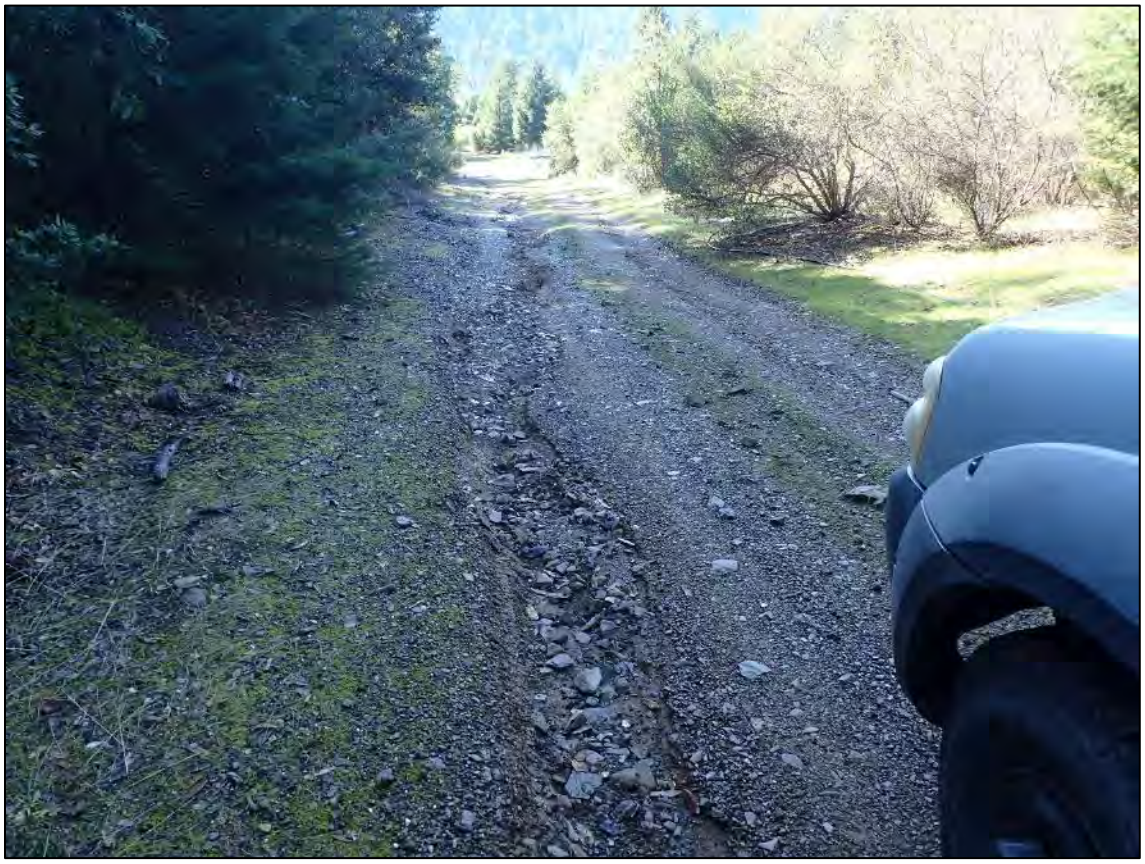

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Total Surface Water Diversion
- Log Sheet -

WD ID:	PWA ID:	Watershed:
Location:	Sheet ___ of ___	Year:

Water Diversion Source (e.g., stream, in-stream pond, spring, etc.)	Water unit (gallons or acre feet)	Amount diverted per month (gallons or acre feet)											
		January	February	March	April	May	June	July	August	September	October	November	December
Monthly Totals													

Comments:

Prepared by Pacific Watershed Associates ♦ P.O. Box 4433 ♦ Arcata, California, 95518 ♦ Ph: (707) 839-5130 ♦ Fx: (707) 839-8168
www.pacificwatershed.com

Water Input to Storage - Log Sheet -

	WD ID:	PWA ID:	Watershed:
Location:		Sheet ___ of ___	Year:

Water Source (e.g., rainwater catchment, stream diversion, spring diversion, well, water delivery, etc.)	Water unit (gallons or acre feet)	Amount input to storage per month (gallons or acre feet), by source											
		January	February	March	April	May	June	July	August	September	October	November	December
Monthly Totals													

Comments: As per NCRWQCB: "Report water volume input to storage, listing each source separately. This may include inputs from rainfall catchment, surface water diversions

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Water Use by Source
- Log Sheet -

	WD ID:	PWA ID:	Watershed:
	Location:	Sheet ___ of ___	Year:

Water Source *(tank, bladder, pond, well, delivered, other)*	**Water unit** (gallons or acre feet)	**Amount utilized from storage per month (gallons or acre feet), by type**											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**Sept**	**October**	**November**	**December**
Monthly Totals													

Comments: As per NCRWQCB: "Report water volume used, listing each source separately. This may include use of stored water, immediate use of pumped groundwater, diverted surface water, or delivered water. If water is delivered, list delivery date, delivery volume, and name and address of water purveyor"

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Fertilizer and Amendment Application Log Sheet

WD ID:	PWA ID:	Watershed:
	Year:	Sheet #: _____of _____

Product name	Fertilizer or Ammendment (circle one)	Type (circle type)	Nutrient content (N-P-K ratio)	Recommended application amount from product label (e.g. # of ounces per application)	Application units (grams, ounces, liters, gallons, etc.)	Recommended application schedule (daily, weekly, etc.)	Actual amount applied in this application (same units)	Date applied (Mo/Day)	Location (Cultivation area #, Greenhouse #, Hoophouse #, etc.)	Initials	Comments
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									
	Fert./Amend.	liquid/solid									

Pesticide and Herbicide Application Log Sheet

WD ID:	PWA ID:	Watershed:

	Location:						Year:	Sheet #: _____of _____	
Product name	**Pesticide or Herbicide (circle one)**	**Product type (circle type)**	**Recommended application amount from product label (e.g. # of ounces per application)**	**Application units (grams, ounces, liters, gallons, etc.)**	**Recommended application schedule (daily, weekly, etc.)**	**Actual amount (in same units) used per application**	**Date applied (mo/day)**	**Initials**	**Comments**
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							
	Pest./Herb.	liquid/solid							

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LEGAL PEST MANAGEMENT PRACTICES FOR MARIJUANA GROWERS IN CALIFORNIA

PESTS OF MARIJUANA IN CALIFORNIA

Marijuana pests vary according to cultivar (variety), whether the plants are grown indoors or outdoors, and where the plants are grown geographically. The pests included in this review are based on two sources: a presentation given in 2013 by Whitney Cranshaw, an extension entomologist at Colorado State University, and a review article by John M. McPartland, a professor of family medicine at the University of Vermont.

HOW TO INTERPRET THE TABLES

Table 1 lists active ingredients not illegal to use on marijuana and the pests that these active ingredients target.

These active ingredients are exempt from **residue tolerance requirements**[1] *and* either exempt from **registration requirements**[2] or registered for a use that's broad enough to include use on marijuana. Residue tolerance requirements are set by U.S. EPA for each pesticide on each food crop and is the amount of pesticide residue allowed to remain in or on each treated crop with "reasonable certainty of no harm." Some pesticides are exempted from the tolerance requirement when they're found to be safe. Some of these pesticides are bacterial-based insect pathogens (e.g., *Bacillus thuringiensis*) or biofungicides (e.g., *Bacillus subtilis*, *Gliocladium virens*).

Active ingredients exempt from registration requirements are mostly food-grade essential oils such as peppermint oil or rosemary oil.

Tables 2 and 3 list pests of marijuana grown outdoors and indoors, and **Table 3** shows pests arranged by the portion of the plant they attack. An explanation of the column labels for Tables 2 and 3 follow.

PESTS. The tables show the most likely pests in California based on Cranshaw's presentation and McPartland's list and gleaned from California-based web sites and blogs. Some pests that drew attention on several blogs (e.g., hemp russet mite) may be worse during drought years. Many have cyclic population fluctuations and others are mainstays of general greenhouse cultivation (e.g., whiteflies, thrips, and fungus gnats). We'll add weeds to this compendium when we have more information.

DAMAGE. For damage caused by greenhouse pests, we derived information from Cranshaw's presentation; for that of outdoor pests when there wasn't any overlap, McPartland's list was used and information from UC IPM for various crops. Accounts of damage by rodents is anecdotal.

IPM PRACTICES. Most of these are standard practices for pests on hosts other than marijuana. For more detailed explanations, see information compiled by the University of California Statewide IPM Program (UC IPM) at www.ipm.ucdavis.edu. You can enter a pest name in the search box (e.g., cutworm) and read about IPM practices for the pest on crops other than marijuana. For marijuana grown indoors, go to the UC IPM home page, click on Agricultural Pests and scroll down the alphabetical list until you reach ornamental nurseries.

Some practices were excluded because they apply to nearly all of the pests. For example, when targeting aphids, whiteflies, and thrips, growers can attract predaceous and parasitic arthropods by planting cover crops (e.g., California buckwheat) and insectary plants—especially those in the carrot, mustard, and sunflower families.

LEGAL PESTICIDES. These are covered above in the Table 1 description and are exempt from **residue tolerance requirements** *and* either exempt from **registration requirements** or registered for a use that is broad enough to include use on marijuana.

Table 4 shows marijuana pests by plant part. Not all of these pests are important, but their collective damage may affect the overall health of the plant.

REFERENCES

Cranshaw, Whitney. 2013. Challenges and opportunities for pest management of medical marijuana in Colorado. Presentation.

McPartland, J.M. 1996. *Cannabis* pests. J. Internatl. Hemp Assoc. 3(2): 49, 52–55.

[1] 40 CFR (Code of Federal Regulations)
[2] under FIFRA section 25(b) and 3 CCR section 6147

Table 1. Active ingredients that are exempt from residue tolerance requirements[a] and either exempt from registration requirements[b] or registered for a use broad enough to include use on marijuana.

ACTIVE INGREDIENT	PEST OR DISEASE
azadirachtin[a]	aphids, whiteflies, fungus gnats, leafminers, cutworms
Bacillus subtilis QST[a1]	root diseases, powdery mildew
Bacillus thuringiensis[a2] subsp. *aizawai* or *kurstaki*	moth larvae (e.g., cutworms, budworms, hemp borer)
Bacillus thuringiensis[a2] subsp. *israelensis*	fly larvae (e.g., fungus gnats)
Beauveria bassiana[a3]	whiteflies, aphids, thrips
cinnamon oil[b]	whiteflies
Gliocladium virens[a1]	root diseases
horticultural oils[a] (petroleum oil)	mites, aphids, whiteflies, thrips; powdery mildew
insecticidal soaps[a] (potassium salts of fatty acids)	aphids, whiteflies, cutworms, budworms
iron phosphate[a]; sodium ferric EDTA[a]	slugs and snails
neem oil[a]	mites; powdery mildew
potassium bicarbonate[a]; sodium bicarbonate[a]	powdery mildew
predatory nematodes[a]	fungus gnats
rosemary + peppermint essential oils[b]	whiteflies
sulfur[a]	mites, hemp flea beetles
Trichoderma harzianum[a1]	root diseases

[a] 40 CFR (Code of Federal Regulations)

[b] FIFRA §25(b) and 3 CCR §6147 [FIFRA = the Federal Insecticide, Fungicide, and Rodenticide Act; CCR = California Code of Regulations]

[1] Biofungicides

[2] Bacterial-based insect pathogen

[3] Fungal-based insect pathogen

Table 2. PEST MANAGEMENT PRACTICES FOR MARIJUANA GROWN OUTDOORS

PEST	DAMAGE	IPM PRACTICES (monitoring; cultural, physical, mechanical, biological)	PESTICIDES
MITES & INSECTS			
two-spotted spider mites *Tetranychus urticae*	Suck plant sap; stipple **leaves**	▪ Keep dust down by hosing off plants (if dust is a problem) ▪ Release predatory mites	neem oil, horticultural oil, sulfur
hemp russet mites *Aculops cannabicola*	Suck plant sap; kill **leaves** and **flowers**	▪ Release predatory mites	neem oil, horticultural oil, sulfur
crickets (field & house) *Gryllus desertus, G. chinensis, Acheta domesticus*	Eat **seedlings**	▪ Use floating row covers or cones on individual plants	—
termites	Eat **roots**	▪ Flood nests	—
leafhoppers	Suck plant sap; weaken plants	▪ Encourage natural enemies by planting nectar sources	horticultural oil or insecticidal soaps for nymphs
aphids *Phorodon cannabis, Myzus persicae, Aphis fabae*	Suck plant sap; weaken plants *P. cannabis* (bhang aphid) vectors tobacco mosaic virus	▪ Hang up yellow sticky cards (alates) ▪ Hose off plants	azadirachtin, horticultural oil, insecticidal soaps, *Beauveria bassiana*
whiteflies *Trialeurodes vaporariorum, Bemisia tabaci, B. argentifolii*	Suck plant sap; weaken plants	▪ Hang up yellow sticky cards ▪ Reflective plastic mulch	azadirachtin, horticultural oil, insecticidal soaps, rosemary + peppermint oils, *Beauveria bassiana*
leafminers *Liriomyza* spp.	Bore into **roots** and **leaves**	▪ Remove older infested leaves ▪ Use biocontrol: release *Diglyphus* parasitoids	azadirachtin

PEST		DAMAGE	IPM PRACTICES (monitoring; cultural, physical, mechanical, biological)	PESTICIDES
LEPIDOPTERA	**cutworms** *Agrotis ipsilon, A. segetum, Spodoptera litura, S. exigua, Mamestra brassicae* (Noctuidae)	Eat **seedlings**	▪ Use pheromone traps to detect adults. ▪ Remove weeds, which serve as a reservoir for cutworms and other noctuids	Vegetative stage only: Use *Bacillus thuringiensis kurstaki* if egg-laying adults found, insecticidal soap; azadirachtin
	budworms *Helicoverpa armigera, H. zea* (Noctuidae)	Eat flowering **buds**	▪ Shake plants to dislodge larvae ▪ Remove infested buds ▪ Plant corn as trap crop	Vegetative stage only: Use *Bacillus thuringiensis kurstaki,* insecticidal soap
	hemp borers (= hemp moth) *Grapholita delineana* (Tortricidae)	Bore through **stalks** (caterpillars)	▪ Plow crop under in fall; remove plants still standing; remove nearby hemp and hop plants ▪ Use light traps at night for monitoring ▪ Use biocontrol: *Trichogramma*	*Bacillus thuringiensis kurstaki*
COLEOPTERA	**hemp flea beetles** *Psylliodes attenuata* (Chrysomelidae)	Bore into **stems** (grubs); feed on seedlings and **leaves** of larger plants (beetles)	▪ Use reflective mulches ▪ Plant trap crops (e.g., radish or Chinese mustard)	sulfur
	scarab grubs (possibly other beetles)	Bore into **stems**	▪ Use parasitic nematodes	—
MAMMALS				
mice (e.g., house mice)		Eat **young sprouts** and **seeds**	▪ Double wrap a 3'-tall chicken wire fence around plants ▪ Trap (minus rodenticides) ▪ Mount barn owl boxes	Rodenticides (see footnote below)
roof rats, *Rattus rattus* **wood rats**, *Neotoma* spp.		Strip bark from **stems** to build nests		
pocket gophers, *Thomomys* spp.		Tunnel through planting areas; feed on plants; gnaw on irrigation lines	▪ Install underground fencing (hardware cloth or ¾" mesh poultry wire) ▪ Mount barn owl boxes	
Columbian black-tailed deer, *Odocoileus hemionus columbianus*		Knock over plants; leave dander, droppings, and ticks behind	▪ Install deer fencing	—
black bears, *Ursus americana*		Knock over plants	▪ Install electric fencing	—

Rodenticides that are not DPR-restricted materials or federally restricted use pesticides *and* are registered for a broad enough use to include use in or around marijuana cultivation sites. If using a rodenticide always read and follow the label and check to make sure that the target rodent is listed. Second-generation anticoagulant products are DPR-restricted materials not labeled for field use and as such, should never be used in or around marijuana cultivation sites.

Table 3. PEST MANAGEMENT PRACTICES FOR MARIJUANA GROWN INDOORS
(e.g., greenhouses, sheds, and grow rooms)

PEST	DAMAGE	IPM PRACTICES (monitoring; cultural, physical, mechanical, biological)	PESTICIDES
DISEASES			
powdery mildew *Sphaerotheca macularis*	Grow on **leaves** as white and gray powdery patches	▪ Use fans to improve air circulation	horticultural oil; neem oil; sodium bicarbonate, potassium bicarbonate; *Bacillus subtilis*
pythium root rots *Pythium* spp.	Attack root tips and worsens when plants grow in wet soil	▪ Avoid hydroponic production or wet soil conditions	Incorporate biocontrol agents into root-growing media (e.g., *Gliocladium virens, Trichoderma harzianum, Bacillus subtilis*)
MITES & INSECTS			
two-spotted spider mite *Tetranychus urticae*	Suck plant sap; stipple **leaves**	▪ Disinfest cuttings before introducing to growing area ▪ Release predatory mites	neem oil, horticultural oil, sulfur
leafhoppers	Suck plant sap; weaken plants	▪ Encourage natural enemies by planting nectar sources	horticultural oil or insecticidal soaps for nymphs
whiteflies *Trialeurodes vaporariorum, Bemisia tabaci, B. argentifolii*	Suck plant sap; weaken plants	▪ Hang up yellow sticky cards ▪ Use biocontrol: *Encarsia formosa*	azadirachtin, *Beauveria bassiana*, cinnamon oil, horticultural oil
thrips *Heliothrips haemorrhoidalis, Frankliniella occidentalis, Thrips tabaci*	Stipple **leaves** and vector viruses	▪ Hang up yellow or blue sticky cards	
dark-winged fungus gnats (Diptera: Sciaridae) *Bradysia* spp.	Damage **roots** and stunt plant growth	▪ Avoid overwatering ▪ Use growing media that deters gnat development ▪ Hang up yellow sticky cards ▪ Use biocontrol: soil-dwelling predatory mites	*Bacillus thuringiensis israelensis* (BTI); predatory nematodes; azadirachtin soil drenches

Table 4. PESTS OF MARIJUANA BY PLANT PART

Seedlings	Flower & Leaf (grown outdoors)	Flower & Leaf (grown indoors)	Stalk & Stem	Root
cutworms	**hemp flea beetle**	**spider mites**	**hemp borer**	**hemp flea beetle**
birds	**hemp borer**	**aphids**	**rats**	**white root grubs**
hemp flea beetle	**budworms**	**whiteflies**		root maggots
crickets	**leafminers**	**thrips**		**termites** & ants
slugs		leafhoppers		**fungus gnats**
rodents				wireworms

APPENDIX B

California Department of Fish and Wildlife Lake or Streambed Alteration Agreement

Trinity County APN **008-080-32.**

RECEIVED
APR 04 2016
CDFW - EUREKA

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
REGION 1 – NORTHERN REGION
619 Second Street
Eureka, CA 95501

STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2016-0019-R1
Unnamed Tributaries, Tributaries to the South Fork Trinity River, Tributary to the Trinity River, Tributary to the Klamath River and the Pacific Ocean

Mr. Patrick Kahan
Kahan Water Diversion and Stream Crossings Project
6 Encroachments

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Mr. Patrick Kahan (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on January 20, 2016, that the Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, the Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, the Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project to be completed is located within the South Fork Trinity River watershed, approximately 3 miles south/southeast of the town of Salyer, County of Trinity, State of California. The project is located in Section 36, T6N, R5E, Humboldt Base and Meridian; in the Hennessy Peak U.S. Geological Survey 7.5-minute quadrangle; Assessor's Parcel Number 008-080-32; latitude 40.8563 N and longitude 123.5571 W at the Point of Diversion-1 (POD), and latitude 40.8564 N and longitude 123.5616 W at POD-2.

PROJECT DESCRIPTION

The project is limited to six encroachments that include two locations for water diversion and four stream crossings project points (table 1). One Unnamed Class II tributary will have spring boxes installed into the substrate of the channel for water diversion. The spring boxes will be set to the grade of the channel at the top and the spring boxes will have covers to avoid entrapment of amphibians. Three stream crossings (sites 1-3) will be removed in conjunction with a road decommissioning project. The fourth road crossing project will be upgraded from a native fill crossing to an armored fill crossing. All project point will be constructed as described in the notification submittal.

Table 1. Project point locations and description.

ID	Latitude/Longitude	Description
Site #1	40.8570, -123.5634	Stream crossing decommission on Class III stream
Site #2	40.8571, -123.5636	Stream crossing decommission on Class III stream
Site #3	40.8573, -123.5631	Stream crossing decommission on Class III stream
Site #4	40.8566, -123.5655	Stream Crossing upgrade to armored fill crossing on Class III stream
POD-1	40.8563, -123.5571	Water diversion from a Class II stream
POD-2	40.8564, 123.5616	Water diversion from a Class II stream

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), steelhead trout (*O. mykiss*), amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.

The adverse effects the project could have on the fish or wildlife resources identified above include:

Impacts to bed, channel, or bank and effects on habitat structure:
soil compaction or other disturbance to soil layer;
temporary increase in fine sediment transport;

Impacts to water quality:
increased water temperature;
reduced instream flow;
temporary increased turbidity;

Impacts to bed, channel, or bank and direct effects on fish, wildlife, and their habitat:
loss or decline of riparian and/or habitat;
direct impacts on benthic organisms;

Impacts to natural flow and effects on habitat structure and process:
cumulative effect when other diversions on the same stream are considered;
diversion of flow from activity site;
direct and/or incidental take;
indirect impacts;
impediment of up- or down-stream migration;
water quality degradation; and
damage to aquatic habitat and function.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

The Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. The Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. The Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of the Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Adherence to Existing Authorizations. All water diversion facilities that the Permittee owns, operates, or controls shall be operated and maintained in accordance with current law and applicable water rights.

1.4 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious to the stream or wildlife, operations shall cease until corrective measures approved by CDFW are taken. This includes new information becoming available that indicates that the bypass flows and diversion rates provided in this agreement are not providing adequate protection to keep aquatic life downstream in good condition or to avoid "take" or "incidental take" of federal or State listed species.

1.5 Notification of Conflicting Provisions. The Permittee shall notify CDFW if the Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact the Permittee to resolve any conflict.

1.6 Project Site Entry. The Permittee agrees to allow CDFW employees access to any property it owns and/or manages for the purpose of inspecting and/or monitoring

the activities covered by this Agreement, provided CDFW: a) provides 24 hours advance notice; and b) allows the Permittee or representatives to participate in the inspection and/or monitoring. This condition does not apply to CDFW enforcement personnel.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, the Permittee shall implement each measure listed below.

2.1 Permitted Project Activities. Except where otherwise stipulated in this Agreement, all work shall be in accordance with the Permittee's Notification received with fees paid in full on January 20, 2016, together with all maps, BMP's, photographs, drawings, and other supporting documents submitted with the Notification.

Stream Crossings

2.2 Work Period. All work shall be confined to the period June 1 through October 15 of each year. Work within the active channel of a stream shall be restricted to periods of **no stream flow and dry weather**. Precipitation forecasts and potential increases in stream flow shall be considered when planning construction activities. Construction activities shall cease and all necessary erosion control measures shall be implemented prior to the onset of precipitation.

2.3 Vegetation Disturbance. Vegetation disturbance shall not exceed the minimum necessary to perform the work.

2.4 Bank Stabilization. The Permittee shall construct bank stabilization with suitable non-erodible materials that will withstand wash out. The bank stabilization material shall extend above the normal high-water mark. No debris or deleterious material shall be used as bank stabilization.

2.5 Rock Slope Protection. Un-grouted rock slope protection (RSP) and energy dissipater materials shall consist of clean rock, competent for the application, sized and properly installed to resist washout. RSP slopes shall be supported with competent boulders keyed into a footing trench with a depth sufficient to properly seat the footing course boulders and prevent instability (typically at least 1/3 diameter of footing course boulders).

2.6 Rock Armor Placement.

2.6.1 No heavy equipment shall enter the wetted stream channel.

2.6.2 No fill material, other than clean rock, shall be placed in the stream channel.

2.6.3 Rock shall be sized to withstand washout from high stream flows, and extend above the ordinary high water level.

2.6.4 Rock armoring shall not constrict the natural stream channel width and shall be keyed into a footing trench with a depth sufficient to prevent instability.

2.7 Excavated Fill. Excavated fill material shall be placed in locations where it cannot deliver to a watercourse. To minimize the potential for material to enter the watercourse during the winter period, all excavated and relocated fill material shall be tractor contoured (to drain water) and tractor compacted to effectively incorporate and stabilize loose material into existing road and/or landing features.

2.8 Runoff from Steep Areas. The Permittee shall divert all runoff from steep, erodible surfaces into stable areas with little erosion potential or contained behind erosion control structures. Erosion control structures such as straw bales shall be placed and maintained to prevent delivery of sediment to Waters of the State. All roads and equipment trails shall be hydrologically-disconnected from the streams.

2.9 Stream Protection. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other deleterious material from project activities shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the stream. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

2.10 Equipment Maintenance. Refueling of machinery or heavy equipment, or adding or draining oil, lubricants, coolants or hydraulic fluids shall not take place within stream bed, channel and bank. All such fluids and containers shall be disposed of properly off-site. Heavy equipment used or stored within stream bed, channel and bank shall use drip pans or other devices (e.g., absorbent blankets, sheet barriers or other materials) as needed to prevent soil and water contamination.

2.11 Hazardous Spills. Any material, which could be hazardous or toxic to aquatic life and enters a stream (i.e. a piece of equipment tipping-over in a stream and dumping oil, fuel or hydraulic fluid), the Permittee shall immediately notify the California Emergency Management Agency State Warning Center at 1-800-852-7550, and immediately initiate clean-up activities. CDFW shall be notified by the Permittee within 24 hours at 707-445-6493 and consulted regarding clean-up procedures.

2.12 Project Inspection. The Project shall be inspected by a licensed Pacific Watersheds Associates or a licensed civil engineer or professional geologist to ensure that the crossings were built as designed. A copy of the inspection report shall be submitted to CDFW within 90 days of completion of this project.

Water Diversion

2.13 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed 6 gallons per minute. The instantaneous diversion rate shall not exceed 20% of the total flow at any time. This condition is subject to modification should further analysis warranting such action become available at a later date. This condition applies cumulatively to POD-1 and POD-2 as they are located on the same Class II stream.

2.14 Bypass Flow. The Permittee shall pass sufficient flow at all times to keep all aquatic species including fish and other aquatic life in good condition below the point of diversion.

2.15 Water Conservation. The Permittee shall add sufficient water storage and/or water conservation measures by June 15, 2016, to limit diverting spring flow to no more than 200 gallons per day from June 15 to October 15 of each year beginning in 2016. The Permittee shall make best efforts to minimize water use, and to follow best practices for water conservation and management.

2.16 Intake Structure. No polluting materials (e.g., particle board, plastic sheeting, bentonite) shall be used to construct or screen, or cover the diversion intake structure.

2.17 Intake Shall Not Impede Aquatic Species Passage. The water diversion structures shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life.

2.18 Water Storage Maintenance. Storage tanks shall have a float valve to shut off the diversion when tanks are full to prevent overflow from being diverted when not needed. The Permittee shall install any other measures necessary to prevent overflow of tanks resulting in more water being diverted than is used.

2.19 Water Management Plan. **The Permittee shall submit a Water Management Plan** that describes how water conservation measures will be achieved under this Agreement. The Water Management Plan shall include details on water storage, water conservation, or other relevant material to meet the 200 gallon per day water diversion limit during the period May 15 to October 15 and meet bypass flow requirements. The Water Management Plan shall include a brief narrative describing water use on the property, photographs to support the narrative, and water use calculations to ensure compliance with this Agreement. The Water Management Plan shall be submitted by June 15, 2016, to CDFW at the 619 Second Street, Eureka, CA 95501.

2.20 State Water Code. This Agreement does not constitute a valid water right. The Permittee shall comply with State Water Code sections 5100 and 1200 et seq. as appropriate for the water diversion and water storage. The application for this

registration is found at:
http://www.swrcb.ca.gov/waterrights/publications_forms/forms/docs/sdu_registration.pdf.

2.21 Revegetation . By June 15, 2016, Permittee shall submit for CDFW approval a revegetation plan for the trees removed during activities described in the Notification.

3. Reporting Measures

3.1 Measurement of Diverted Flow. The Permittee shall install a device acceptable to CDFW for measuring the quantity of water diverted to and from the storage system. This measurement shall begin as soon as this Agreement is signed by the Permittee. The Permittee shall record the quantity of water pumped to and from the system on a weekly basis. Alternatively, the Permittee can record the frequency of pumping and the time to fill storage. Copies of the **water diversion records** shall be submitted to CDFW at the 619 Second Street, Eureka, CA 95501 office **no later than December 31 of each year beginning in 2016**.

CONTACT INFORMATION

Written communication that the Permittee or CDFW submits to the other shall be delivered to the address below unless the Permittee or CDFW specifies otherwise.

To Permittee:

Mr. Patrick Kahan
P.O. Box 404
Bayside, California 95524
707-296-0709

To CDFW:

Department of Fish and Wildlife
Northern Region
619 Second Street
Eureka, California 95501
Attn: Lake and Streambed Alteration Program
Notification #1600-2016-0019-R1

LIABILITY

The Permittee shall be solely liable for any violation of the Agreement, whether committed by the Permittee or any person acting on behalf of the Permittee, including

its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require the Permittee to proceed with the project. The decision to proceed with the project is the Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety this Agreement if it determines that the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide the Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide the Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to the Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against the Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq.* (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse

disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

The Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and the Permittee. To request an amendment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by the Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), the Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, the Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e).

If the Permittee fails to submit a request to extend the Agreement prior to its expiration, the Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (FGC section 1605(f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after the Permittee signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall **expire five years** from date of execution, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. The Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of the Permittee, the signatory hereby acknowledges that he or she is doing so on the Permittee's behalf and represents and warrants that he or she has the authority to legally bind the Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If the Permittee begins or completes a project different from the project the Agreement authorizes, the Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR Mr. Patrick Kahan

Patrick Kahan — Date: 4/1/2016

FOR DEPARTMENT OF FISH AND WILDLIFE

Gordon Leppig — Date: 4/7/16
Senior Environmental Scientist Supervisor

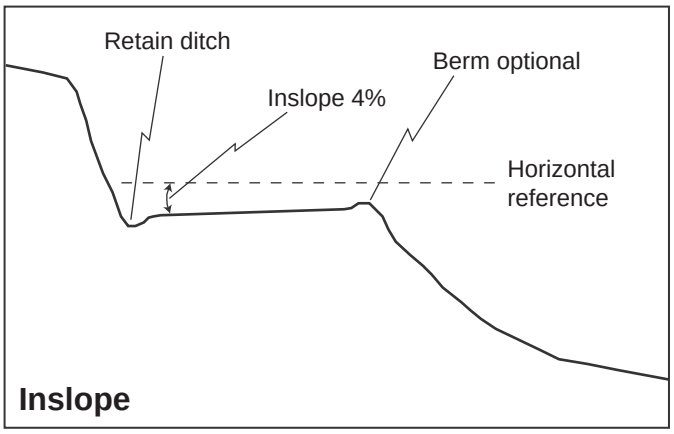
Prepared by: David Manthorne, Environmental Scientist, March 11, 2016

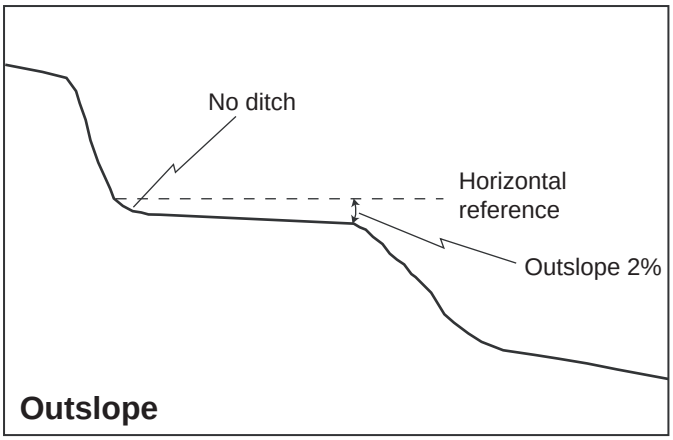
APPENDIX C

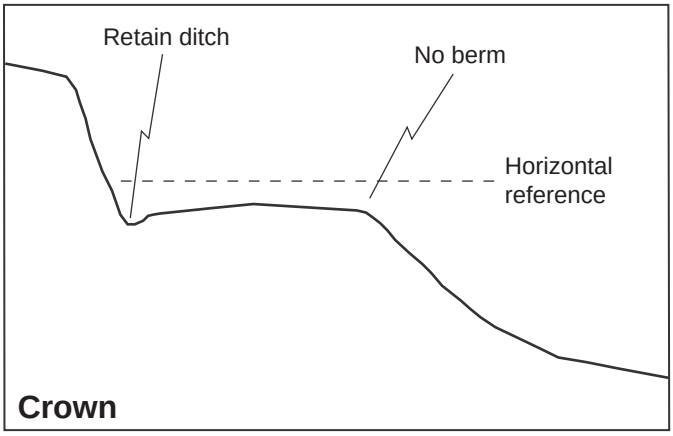
PWA Typical Drawing #9

Trinity County APN **008-080-32.**

Typical Designs for Using Road Shape to Control Road Runoff







Outsloping Pitch for Roads Up to 8% Grade		
Road grade	**Unsurfaced roads**	**Surfaced roads**
4% or less	3/8" per foot	1/2" per foot
5%	1/2" per foot	5/8" per foot
6%	5/8" per foot	3/4" per foot
7%	3/4" per foot	7/8" per foot
8% or more	1" per foot	1 1/4" per foot

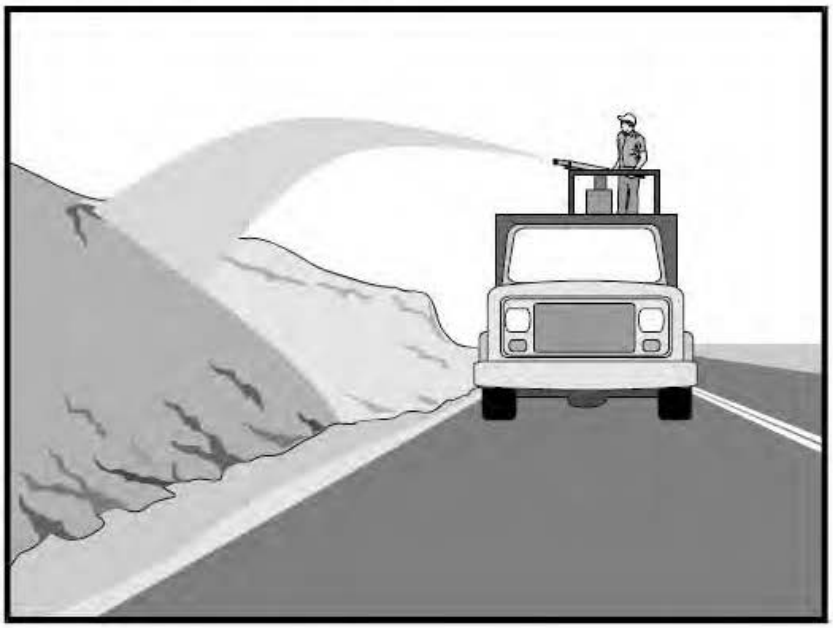
Pacific Watershed Associates Inc.
Geologic and Geomorphic Studies • Watershed Restoration • Wildland Hydrology • Erosion Control • Environmental Services
PO Box 4433, Arcata, CA 95518 / Ph: 707-839-5130 / FAX: 707-839-8168 / www.pacificwatershed.com

APPENDIX D

Erosion Prevention and Sediment Control BPTC Techniques

Trinity County APN **008-080-32.**

Straw Mulch EC-6



Description and Purpose

Straw mulch consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or crimper, or anchoring it with a tackifier or stabilizing emulsion. Straw mulch protects the soil surface from the impact of rain drops, preventing soil particles from becoming dislodged.

Suitable Applications

Straw mulch is suitable for disturbed areas requiring temporary protection until permanent stabilization is established. Straw mulch can be specified for the following applications:

- As a stand-alone BMP on disturbed areas until soils can be prepared for permanent vegetation. The longevity of straw mulch is typically less than six months.
- Applied in combination with temporary seeding strategies
- Applied in combination with permanent seeding strategies to enhance plant establishment and final soil stabilization
- Applied around containerized plantings to control erosion until the plants become established to provide permanent stabilization

Limitations

- Availability of straw and straw blowing equipment may be limited just prior to the rainy season and prior to storms due to high demand.

Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

EC-5 Soil Binders

EC-7 Geotextiles and Mats

EC-8 Wood Mulching

EC-14 Compost Blanket

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- There is a potential for introduction of weed seed and unwanted plant material if weed-free agricultural straw is not specified.
- Straw mulch applied by hand is more time intensive and potentially costly.
- Wind may limit application of straw and blow straw into undesired locations.
- May have to be removed prior to permanent seeding or prior to further earthwork.
- "Punching" of straw does not work in sandy soils, necessitating the use of tackifiers.
- Potential fugitive dust control issues associated with straw applications can occur. Application of a stabilizing emulsion or a water stream at the same time straw is being blown can reduce this problem.
- Use of plastic netting should be avoided in areas where wildlife may be entrapped and may be prohibited for projects in certain areas with sensitive wildlife species, especially reptiles and amphibians.

Implementation

- Straw should be derived from weed-free wheat, rice, or barley. Where required by the plans, specifications, permits, or environmental documents, native grass straw should be used.
- Use tackifier to anchor straw mulch to the soil on slopes.
- Crimping, punch roller-type rollers, or track walking may also be used to incorporate straw mulch into the soil on slopes. Track walking can be used where other methods are impractical.
- Avoid placing straw onto roads, sidewalks, drainage channels, sound walls, existing vegetation, etc.
- Straw mulch with tackifier should not be applied during or immediately before rainfall.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Application Procedures

- When using a tackifier to anchor the straw mulch, roughen embankment or fill areas by rolling with a crimping or punching-type roller or by track walking before placing the straw mulch. Track walking should only be used where rolling is impractical.
- Apply straw at a rate of between 3,000 and 4,000 lb/acre, either by machine or by hand distribution and provide 100% ground cover. A lighter application is used for flat surfaces and a heavier application is used for slopes.
- Evenly distribute straw mulch on the soil surface.
- Anchoring straw mulch to the soil surface by "punching" it into the soil mechanically (incorporating) can be used in lieu of a tackifier.

- Methods for holding the straw mulch in place depend upon the slope steepness, accessibility, soil conditions, and longevity.
  - A tackifier acts to glue the straw fibers together and to the soil surface. The tackifier should be selected based on longevity and ability to hold the fibers in place. A tackifier is typically applied at a rate of 125 lb/acre. In windy conditions, the rates are typically 180 lb/acre.
  - On very small areas, a spade or shovel can be used to punch in straw mulch.
  - On slopes with soils that are stable enough and of sufficient gradient to safely support construction equipment without contributing to compaction and instability problems, straw can be "punched" into the ground using a knife blade roller or a straight bladed coulter, known commercially as a "crimper."

Costs

Average annual cost for installation and maintenance is included in the table below. Application by hand is more time intensive and potentially more costly.

BMP	Unit Cost per Acre
Straw mulch, crimped or punched	$2,458-$5,375
Straw mulch with tackifier	$1,823-$4,802

Source: Caltrans Soil Stabilization BMP Research for Erosion and Sediment Controls, July 2007

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- The key consideration in inspection and maintenance is that the straw needs to last long enough to achieve erosion control objectives. Straw mulch as a stand-alone BMP is temporary and is not suited for long-term erosion control.
- Maintain an unbroken, temporary mulched ground cover while disturbed soil areas are inactive. Repair any damaged ground cover and re-mulch exposed areas.
- Reapplication of straw mulch and tackifier may be required to maintain effective soil stabilization over disturbed areas and slopes.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Controlling Erosion of Construction Sites, Agricultural Information Bulletin #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

Guides for Erosion and Sediment Control in California, USDA Soils Conservation Service, January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

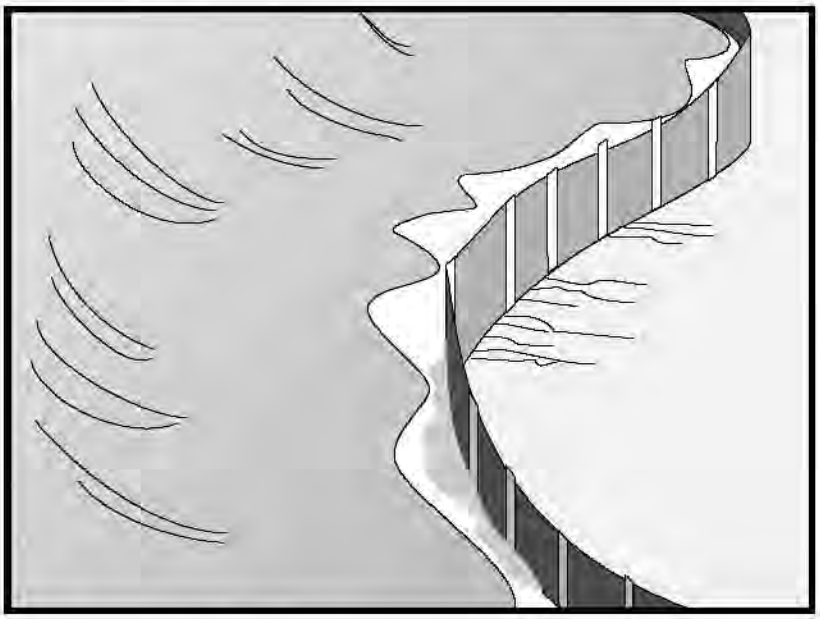
Soil Erosion by Water, Agricultural Information Bulletin #513, U.S. Department of Agriculture, Soil Conservation Service.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Silt Fence SE-1



Description and Purpose

A silt fence is made of a woven geotextile that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.

Suitable Applications

Silt fences are suitable for perimeter control, placed below areas where sheet flows discharge from the site. They could also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion and around inlets within disturbed areas (SE-10). Silt fences are generally ineffective in locations where the flow is concentrated and are only applicable for sheet or overland flows. Silt fences are most effective when used in combination with erosion controls. Suitable applications include:

- Along the perimeter of a project.
- Below the toe or down slope of exposed and erodible slopes.
- Along streams and channels.
- Around temporary spoil areas and stockpiles.
- Around inlets.
- Below other small cleared areas.

Categories

EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-10 Storm Drain Inlet Protection

SE-14 Biofilter Bags

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Limitations

- Do not use in streams, channels, drain inlets, or anywhere flow is concentrated.
- Do not use in locations where ponded water may cause a flooding hazard. Runoff typically ponds temporarily on the upstream side of silt fence.
- Do not use silt fence to divert water flows or place across any contour line. Fences not constructed on a level contour, or fences used to divert flow will concentrate flows resulting in additional erosion and possibly overtopping or failure of the silt fence.
- Improperly installed fences are subject to failure from undercutting, overtopping, or collapsing.
- Not effective unless trenched and keyed in.
- Not intended for use as mid-slope protection on slopes greater than 4:1 (H:V).
- Do not use on slopes subject to creeping, slumping, or landslides.

Implementation

General

A silt fence is a temporary sediment barrier consisting of woven geotextile stretched across and attached to supporting posts, trenched-in, and, depending upon the strength of fabric used, supported with plastic or wire mesh fence. Silt fences trap sediment by intercepting and detaining small amounts of sediment-laden runoff from disturbed areas in order to promote sedimentation behind the fence.

The following layout and installation guidance can improve performance and should be followed:

- Use principally in areas where sheet flow occurs.
- Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.
- The maximum length of slope draining to any point along the silt fence should be 200 ft or less.
- The maximum slope perpendicular to the fence line should be 1:1.
- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 ft^2 of ponding area should be provided for every acre draining to the fence.
- Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
- Leave an undisturbed or stabilized area immediately down slope from the fence where feasible.

- Silt fences should remain in place until the disturbed area is permanently stabilized, after which, the silt fence should be removed and properly disposed.
- Silt fence should be used in combination with erosion source controls up slope in order to provide the most effective sediment control.
- Be aware of local regulations regarding the type and installation requirements of silt fence, which may differ from those presented in this fact sheet.

Design and Layout

The fence should be supported by a plastic or wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Woven geotextile material should contain ultraviolet inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 °F to 120 °F.

- Layout in accordance with attached figures.
- For slopes steeper than 2:1 (H:V) and that contain a high number of rocks or large dirt clods that tend to dislodge, it may be necessary to install additional protection immediately adjacent to the bottom of the slope, prior to installing silt fence. Additional protection may be a chain link fence or a cable fence.
- For slopes adjacent to sensitive receiving waters or Environmentally Sensitive Areas (ESAs), silt fence should be used in conjunction with erosion control BMPs.

Standard vs. Heavy Duty Silt Fence

Standard Silt Fence

- Generally applicable in cases where the slope of area draining to the silt fence is 4:1 (H:V) or less.
- Used for shorter durations, typically 5 months or less
- Area draining to fence produces moderate sediment loads.

Heavy Duty Silt Fence

- Use is generally limited to 8 months or less.
- Area draining to fence produces moderate sediment loads.
- Heavy duty silt fence usually has 1 or more of the following characteristics, not possessed by standard silt fence.
  - Fence fabric has higher tensile strength.
  - Fabric is reinforced with wire backing or additional support.
  - Posts are spaced closer than pre-manufactured, standard silt fence products.
  - Posts are metal (steel or aluminum)

Materials

Standard Silt Fence

- Silt fence material should be woven geotextile with a minimum width of 36 in. and a minimum tensile strength of 100 lb force. The fabric should conform to the requirements in ASTM designation D4632 and should have an integral reinforcement layer. The

reinforcement layer should be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric should be between 0.1 sec^{-1} and 0.15 sec^{-1} in conformance with the requirements in ASTM designation D4491.

- Wood stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.

- Staples used to fasten the fence fabric to the stakes should be not less than 1.75 in. long and should be fabricated from 15 gauge or heavier wire. The wire used to fasten the tops of the stakes together when joining two sections of fence should be 9 gauge or heavier wire. Galvanizing of the fastening wire will not be required.

Heavy-Duty Silt Fence

- Some silt fence has a wire backing to provide additional support, and there are products that may use prefabricated plastic holders for the silt fence and use metal posts or bar reinforcement instead of wood stakes. If bar reinforcement is used in lieu of wood stakes, use number four or greater bar. Provide end protection for any exposed bar reinforcement for health and safety purposes.

Installation Guidelines – Traditional Method

Silt fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- A trench should be excavated approximately 6 in. wide and 6 in. deep along the line of the proposed silt fence (trenches should not be excavated wider or deeper than necessary for proper silt fence installation).

- Bottom of the silt fence should be keyed-in a minimum of 12 in.

- Posts should be spaced a maximum of 6 ft apart and driven securely into the ground a minimum of 18 in. or 12 in. below the bottom of the trench.

- When standard strength geotextile is used, a plastic or wire mesh support fence should be fastened securely to the upslope side of posts using heavy–duty wire staples at least 1 in. long. The mesh should extend into the trench.

- When extra-strength geotextile and closer post spacing are used, the mesh support fence may be eliminated.

- Woven geotextile should be purchased in a long roll, then cut to the length of the barrier. When joints are necessary, geotextile should be spliced together only at a support post, with a minimum 6 in. overlap and both ends securely fastened to the post.

- The trench should be backfilled with native material and compacted.

- Construct silt fences with a setback of at least 3 ft from the toe of a slope. Where, due to specific site conditions, a 3 ft setback is not available, the silt fence may be constructed at the

toe of the slope, but should be constructed as far from the toe of the slope as practicable. Silt fences close to the toe of the slope will be less effective and more difficult to maintain.

- Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the barrier; in no case should the reach exceed 500 ft.
- Cross barriers should be a minimum of $^1/_3$ and a maximum of ½ the height of the linear barrier.
- See typical installation details at the end of this fact sheet.

Installation Guidelines - Static Slicing Method

- Static Slicing is defined as insertion of a narrow blade pulled behind a tractor, similar to a plow blade, at least 10 inches into the soil while at the same time pulling silt geotextile fabric into the ground through the opening created by the blade to the depth of the blade. Once the gerotextile is installed, the soil is compacted using tractor tires.
- This method will not work with pre-fabricated, wire backed silt fence.
- Benefits:
    - Ease of installation (most often done with a 2 person crew). In addition, installation using static slicing has been found to be more efficient on slopes, in rocky soils, and in saturated soils.
    - Minimal soil disturbance.
    - Greater level of compaction along fence, leading to higher performance (i.e. greater sediment retention).
    - Uniform installation.
    - Less susceptible to undercutting/undermining.

Costs

- It should be noted that costs vary greatly across regions due to available supplies and labor costs.
- Average annual cost for installation using the traditional silt fence installation method (assumes 6 month useful life) is $7 per linear foot based on vendor research. Range of cost is $3.50 - $9.10 per linear foot.
- In tests, the slicing method required 0.33 man hours per 100 linear feet, while the trenched based systems required as much as 1.01 man hours per linear foot.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair undercut silt fences.

- Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months.
- Silt fences that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed, and replaced with new silt fence barriers.
- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Silt fences should be left in place until the upstream area is permanently stabilized. Until then, the silt fence should be inspected and maintained regularly.
- Remove silt fence when upgradient areas are stabilized. Fill and compact post holes and anchor trench, remove sediment accumulation, grade fence alignment to blend with adjacent ground, and stabilize disturbed area.

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, United States Environmental Protection Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group-Working Paper, USEPA, April 1992.

Sedimentation and Erosion Control Practices, and Inventory of Current Practices (Draft), UESPA, 1990.

Southeastern Wisconsin Regional Planning Commission (SWRPC). Costs of Urban Nonpoint Source Water Pollution Control Measures. Technical Report No. 31. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI. 1991

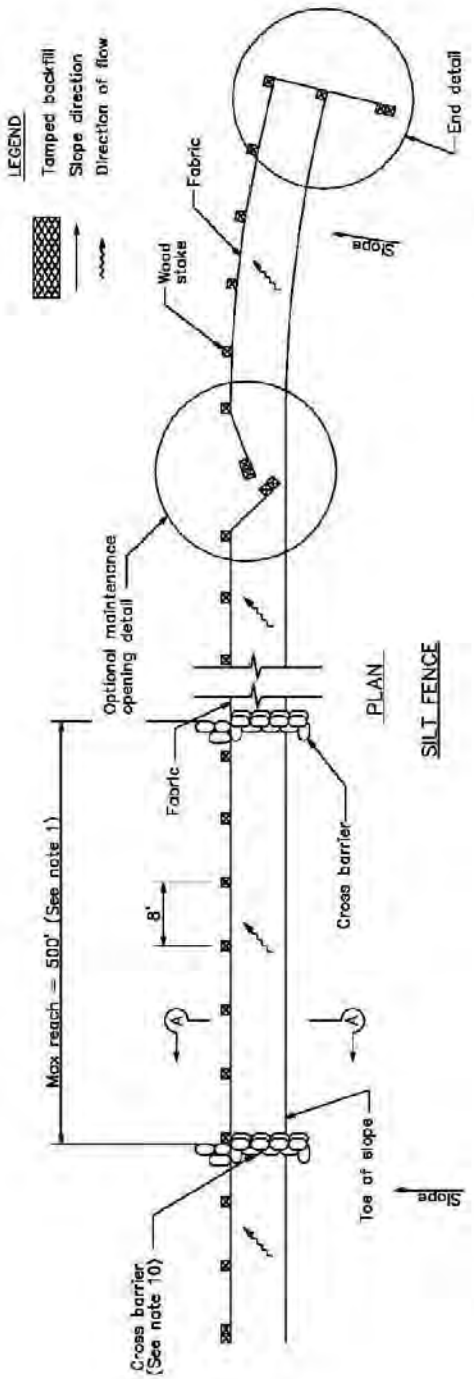
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

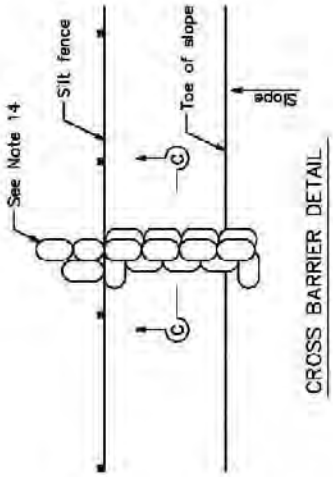
Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

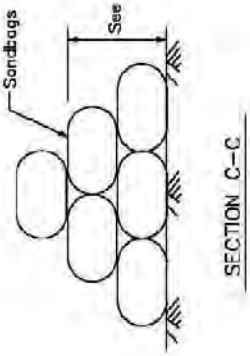
U.S. Environmental Protection Agency (USEPA). Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. U.S. Environmental Protection Agency, Office of Water, Washington, DC, 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

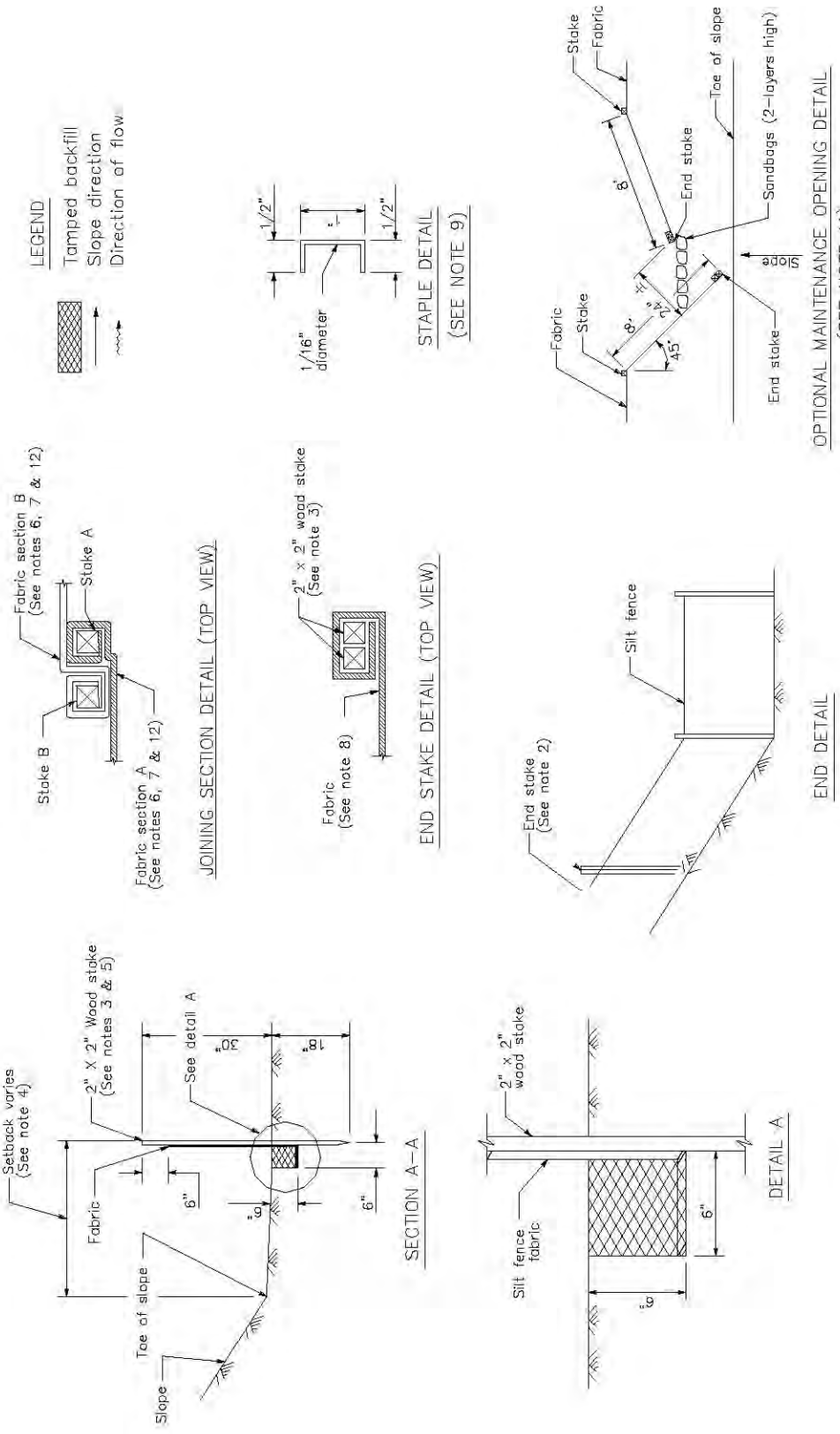




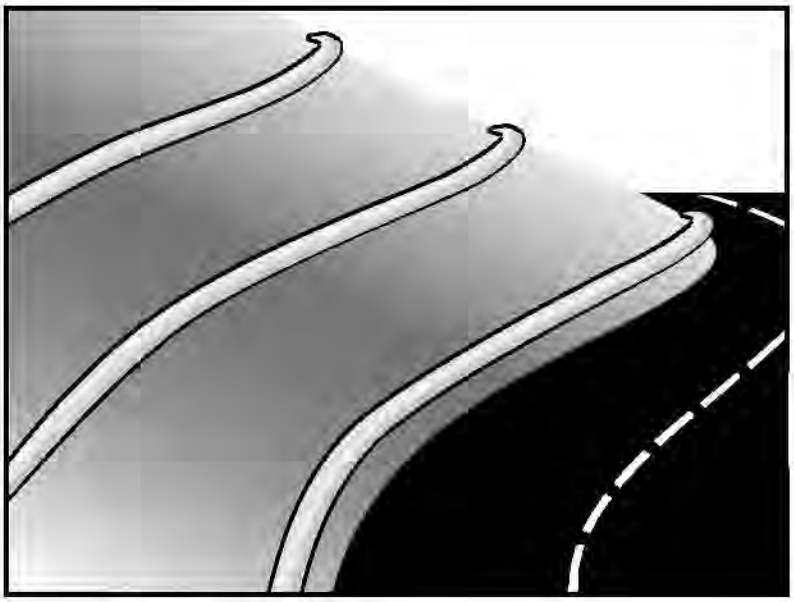


NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'.
2. The last 8'-0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 8'-0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shal be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.
14. Add 3-4 bags to cross barrier on downgradient side of silt fence as needed to prevent bypass or undermining and as allowable based on site limits of disturbance.


LEGEND
Tamped backfill
Slope direction
Direction of flow
1/2"
1/16" diameter
1"
1/2"
STAPLE DETAIL
(SEE NOTE 9)
Stake
Fabric
8'
End stake
Toe of slope
Sandbags (2-layers high)
Slope
Fabric
Stake
8'
4'
45°
End stake
OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)
Fabric section B
(See notes 6, 7 & 12)
Stake A
Stake B
Fabric section A
(See notes 6, 7 & 12)
JOINING SECTION DETAIL (TOP VIEW)
2" x 2" wood stake
(See note 3)
Fabric
(See note 8)
END STAKE DETAIL (TOP VIEW)
Silt fence
End stake
(See note 2)
END DETAIL
Setback varies
(See note 4)
2" X 2" Wood stake
(See notes 3 & 5)
See detail A
30"
18"
Fabric
6"
6"
6"
Toe of slope
Slope
SECTION A-A
2" x 2"
wood stake
Silt fence
fabric
6"
6"
DETAIL A

Fiber Rolls SE-5



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-14 Biofilter Bags

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
  - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
  - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
  - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be ¼ to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
  - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
  - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradeable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Costs

Material costs for regular fiber rolls range from $20 - $30 per 25 ft roll.

Material costs for PAM impregnated fiber rolls range between 7.00-$9.00 per linear foot, based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

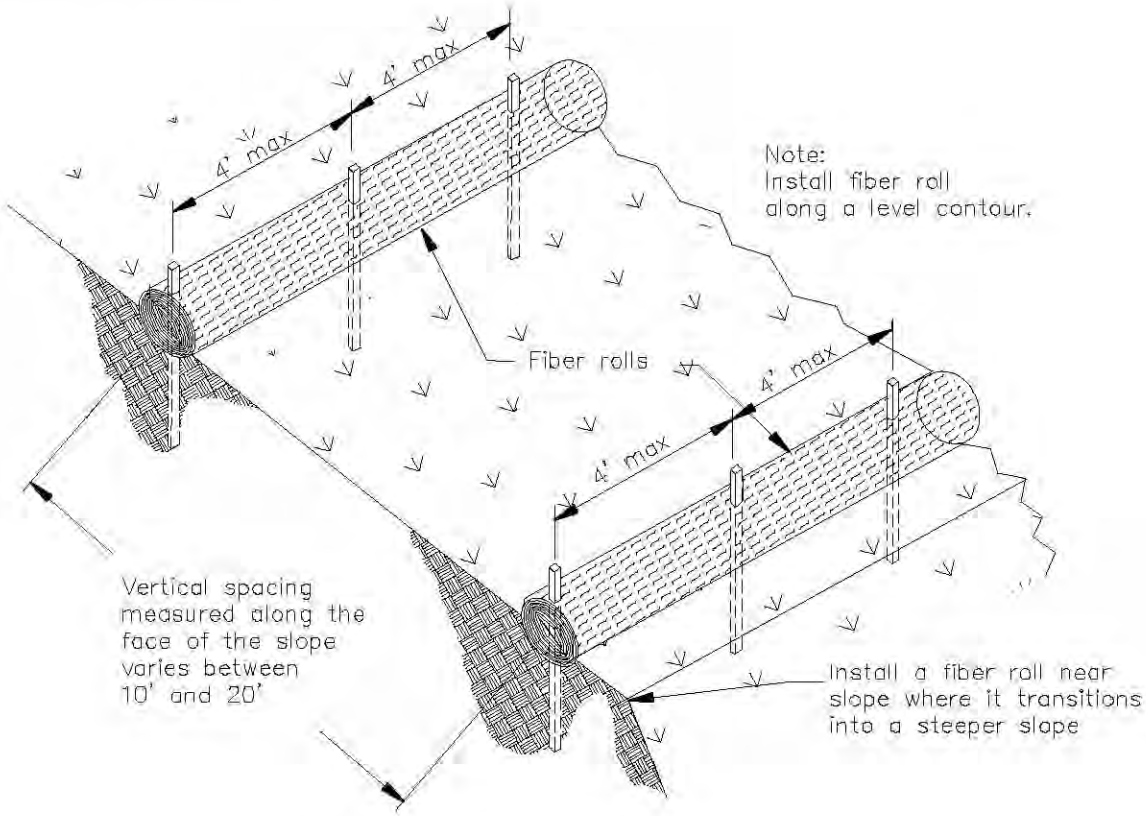
in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

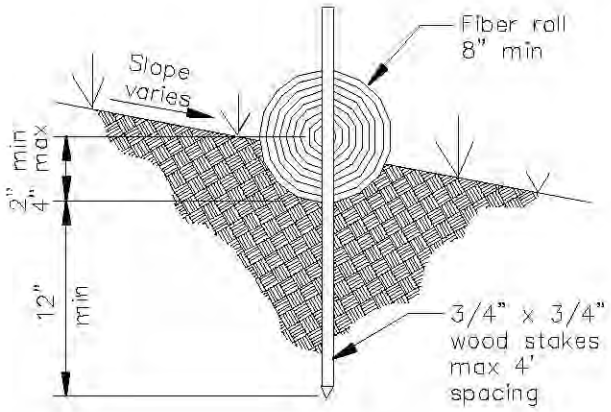
References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

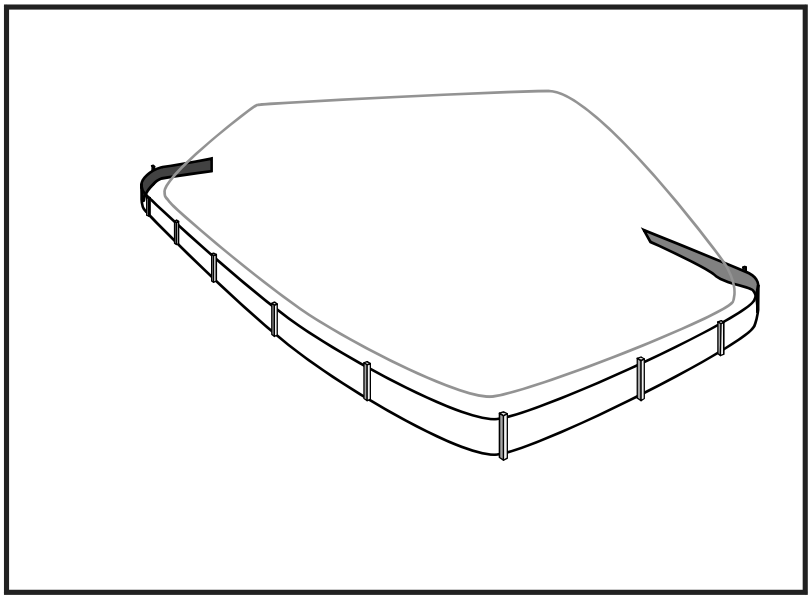


TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

Stockpile Management WM-3



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Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Suitable Applications

Implement in all projects that stockpile soil and other loose materials.

Limitations

- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of plastic materials should be avoided when feasible and photodegradable plastics should not be used.

Implementation

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- All stockpiles are required to be protected immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles

- Cover and project soil stockpiles with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Consider temporary vegetation for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base

- Provide covers and protect these stockpiles with a temporary perimeter sediment barrier at all times.

Stockpiles of "cold mix"

- Cover cold mix stockpiles and place them on plastic sheeting (or comparable material) and surround the stockpiles with a berm all times.

Stockpiles of fly ash, stucco, hydrated lime

- Cover stockpiles of materials that may raise the pH of runoff (i.e., basic materials) with plastic and surround the stockpiles with a berm at all times.

Stockpiles/Storage of wood (Pressure treated with chromated copper arsenate or ammoniacal copper zinc arsenate)

- Cover treated wood with plastic sheeting (or comparable material) and surround with a berm at all times.

Protection of Active Stockpiles

Active stockpiles of the identified materials should be protected as follows:

- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Costs

For cost information associated with stockpile protection refer to the individual erosion or sediment control BMP fact sheet considered for implementation (For example, refer to SE-1 Silt Fence for installation of silt fence around the perimeter of a stockpile.)

Inspection and Maintenance

- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.