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BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Assessor Parcel Number (APN):

217 – 391 – 012

Blocksburg, Humboldt County, California

Prepared For:

Whipsawson LLC
2555 Sunset Ridge Rd
Blocksburg, CA 95514

Prepared By:

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Date Prepared:

June 29th, 2023

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

X _____.

Mason London, MSc Biology

Naiad Biological Consulting Principal Biologist

Table of Contents

Section 1 Summary of Findings and Conclusions

A comprehensive Biological Reconnaissance and Project Feasibility Assessment was conducted for Whinsawason LLC to evaluate the potential impacts of cannabis cultivation within the designated Study Area. This area is situated in Blocksburg, California, within Humboldt County. Since the field visit described in this Report did not align with the blooming period of all rare and special-status plant species, protocol-level botanical surveys are being conducted during the 2023 season to inventory and assess the potential impacts on listed and special-status plant species within the project areas, given the predetermined ground disturbance associated with cannabis cultivation.

During the initial reconnaissance site survey, no special-status plant, animal, or vegetation communities were observed in the Study Area. While there is suitable habitat for some listed species, the recommended actions outlined in this report can mitigate any potential impacts and achieve a neutral effect on these species. It is important to note that proper pre-construction surveys, consistent with established protocols, should be conducted prior to project implementation to validate the field and data-based observations outlined in this report.

With the implementation of the proposed recommendations, it is anticipated that the development of this project will not result in significant direct or indirect impacts on the surrounding wildlife, environment, and habitats. However, it is crucial to conduct protocol-level pre-construction surveys to confirm the findings and ensure adherence to the recommendations outlined in this report prior to project commencement.

Section 2 Introduction, Background, and Project Understanding

2.1 Purpose and Need

This Biological Resource Assessment Report has been prepared by request from the client. This Report describes the findings from a biological assessment, which in the case of this document is a reconnaissance survey to assess potential presence of biological resources and sensitive habitat(s). This Report has been prepared as a measure to investigate the impacts of the expansion of a preexisting cultivation operation occurring within one (1) parcel, referred to throughout this Report as the Study Area. This assessment gives special focus to a predetermined area of known environmental superiority for cultivation, and associated project development, based on terrain, slope, habitat, and historical disturbance, referred to as the Area Assessed for Project Feasibility in Map 2-5. Even though the potential cultivation areas identified to be feasible for development have preexisting habitat disturbance, all County of Humboldt commercial cannabis cultivation applications, under the Commercial Cannabis Land Use Ordinance (CCLUO) *Application Requirements Cannabis 2.0*, require a "Biological Reconnaissance Survey for Special-Status Species and Sensitive Habitat."

The biological resource survey for this project is being treated as a biological assessment. A biological assessment, as defined by the United States Fish and Wildlife Service (USFWS), is "information prepared by a qualified biologist to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of a species that are proposed for listing; or (3) adversely modify proposed critical habitat. A biological assessment is a specific document required under Section 7 of the Federal Endangered Species Act (FESA) when project actions have the potential to result in "may affect" determination," (USFWS: Endangered Species Glossary, 2020).

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

The locations and presence of aquatic resources, and other sensitive habitats, within the proximity of the proposed cultivation site within the Study Area assessed in this Report, were identified and mapped in order to determine adequate setbacks for the proposed cannabis cultivation to occur. This was done as a measure to address the environmental impacts of the proposed cultivation and associated infrastructure within the Study Area.

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

Such assessments shall be completed … before any contract for construction is entered into and before construction is begun with respect to such action."[1]

This document has also been prepared in response to the State Water Resource Control Board's Cannabis Cultivation Policy requirement and condition, which states in *Section 1 – General Requirements and Prohibitions*, Term #10 that "…[p]rior to commencing any cannabis land development or site expansion activities, the cannabis cultivator shall retain a Qualified Biologist to identify sensitive plant, wildlife species, or communities at the proposed development site. If sensitive plant, wildlife species, or communities are identified, the cannabis cultivator and Qualified Biologist shall consult with CDFW and CAL FIRE to designate a no-disturbance buffer to protect identified sensitive plant, wildlife species, and communities. A copy of the report shall be submitted to the appropriate Regional Water Board."[2]

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

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

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

2.2 Biologist's Qualifications

The biological assessment for this Report was conducted by Mason London. Mason is the principal biologist at Naiad Biological Consulting. Mason holds an MSc in biology with a concentration in aquatic ecology from Humboldt State University (HSU). Mason has worked professionally as a wildlife biologist for The Nature Conservancy, a botanist for the Medford, OR district Bureau of Land Management, and an Aquatic Research Scientist for the HSU River Institute. Mason has also conducted protocol level surveys for California red-legged frogs, foothill yellow-legged frogs, western pond turtles, nesting birds, and has performed botanical surveys in a variety of upland and aquatic habitats. Mason has done pre-construction and compliance monitoring surveys on projects throughout California, varying in a wide range of scopes and focused on amphibians/reptiles, birds (nesting), and mammals. Collectively Mason has over 13 years of experience working professionally as a wildlife biologist, botanist, aquatic ecological research scientist, and has instructed several ecological courses at the university level.

[1] **Section 7 of the Federal Endangered Species Act (FESA) (16 U.S. Code § 1536) subsection (c):** https://www.fws.gov/endangered/laws-policies/section-7.html
[2] **State Water Resource Control Board: Cannabis Cultivation Policy:** https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

2.3 Project Description

Whipsawason, LLC proposes to expand outdoor cultivation activities an additional 15,000 SF on two pre-existing flats located on the Map 2 as the Areas Assessed for Project Feasibility. New cultivation will occur in beds in the native soil covered by light deprivation hoop structures. Water will be sourced from a pre-existing 550,000-gallon rain catchment pond. Electric power is provided by a pre-existing solar system and solar operated fans. Drying and curing will occur in a pre-existing metal building. The development of the new cultivation will not require grading.[3]

2.4 Study Area Description and Geographic Setting

The parcel assessed for the feasibility of cannabis cultivation, referred to as the Study Area, in this Report has the Assessor Parcel Number (APN): 217-391-012 (Map 1 & Map 2).

APN: 217-391-012 is 40.00 acres (per Humboldt WebGIS) with a high elevation of approximately 2,240 feet (approx. 685 meters) and a low elevation of approximately 1,900 feet (approx. 580 meters) (Google Earth Pro, 2022).

The approximate center location of the Study Area is located 2.00 air miles west to northwest of "downtown" Blocksburg, California and approximately 14.50 air miles northeast of Garberville, California in Humboldt County (Map 1). The Study Area occurs within the Blocksburg 7.5-minute USGS quadrangle (Quad code: 4012336) within the Basin Creek watershed. Basin Creek is a tributary of the Eel River which is a coastal river draining into the Pacific Ocean approximately 43.00 air miles northwest of the center location of the parcel (CDFW Region: 1). The center location of the Study Area is 40°17'08.3"N 123°40'16.7"W. The parcel is zoned as Forestry Recreation (FR) which principal permitted uses are listed as "general agriculture, nurseries and greenhouses, and roadside stands" (Humboldt County Code Zoning Regulations: Title III Land Use and Development -Section 314-7.3[4]). This parcel has a combined zoning type of Special Building Site (B) which "… are intended to be combined with any principal zone in which sound and orderly planning indicate that lot area and yard requirements should be modified." And specifically, within the combing zone type of B, this parcel is designated as B-5, which "...specified on the zoning maps designating any such zone, except that in no case shall these requirements be less than those required under the B-4 requirements." And where the building site area under designation B-4 is one (1) acre ((Humboldt County Code Zoning Regulations: Title III Land Use and Development -Section 314-17.1). The current general plan for this parcel is Rural Agriculture (RA). Allowable uses of RA parcels included "general agriculture" and "intensive agriculture" (Chapter 4 Land Use Element: Section 4.8 Land Use Designations, Humboldt County General Plan, 2017[5])."

[3] The verbiage used in the Project Description was provided by the client. The assessment described in this report was conducted based on the project description understanding presented in Section 2.3
[4] **Humboldt County Code – Zoning Regulations:** https: //humboldtgov.org/DocumentCenter/View/4029/Humboldt-County-Zoning-Regulations-PDF?bidId=
[5] **Humboldt County General Plan:** https://humboldtgov.org/DocumentCenter/View/62021/Section-48-Land-Use-Designations-PDF?bidId=

Section 3 Methods

3.1 Pre-Site Visit Data Compilation and Preparation

A list of special-status plant and animal species considered to have potential presence within the Study Area was downloaded from the California Department of Fish and Wildlife's California Natural Diversity Database Biogeographic Information and Observation System (CNDDB BIOS) (CDFW, 2020), the United State Fish and Wildlife Service Information for Planning and Conservation (IPaC, USFWS 2020) and Calflora Project (Calflora, 2020) for the USGS Blocksburg 7-quad area. Animals on the CNDDB list were primarily included based on state or federal listing status or CDFW designation. Native pollinators found in the area were also included based on the state rarity and their potential to be affected by cannabis cultivation.

Aside from the creation of a target list of special-status species, the Regional Dominate Alliances for the Study Area was downloaded, mapped, and assessed from The U.S. Forest Services' Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) (Map 6). The CALVEG system was developed to classify California's existing vegetation communities for use in statewide resource planning considerations. This was originally accomplished with the use of color infrared satellite imagery and field verification of types by current soil-vegetation mapping efforts as well as professional guidance through a network of contacts throughout the state. It is a hierarchical classification originally based on "formation" categories: forest, woodland, chaparral, shrubs and herbaceous in addition to non-vegetated units. They were originally identified by distinctions calculated among canopy reflectance values used in the LANDSAT satellite. Since then, the classification has been expanded from an initial 129 types occurring throughout the eight regions of the state to the current 213 occurring in nine regions, and image resolution has been enhanced.

Precipitation data was gathered from the PRISM Climate Group[6] online 4km data sets. PRISM Climate Group obtains precipitation data from a variety of sources, including government agencies, meteorological organizations, and academic institutions. They also utilize remote sensing technologies, such as satellite imagery and radar, to gather precipitation data. The data is then analyzed and processed using statistical methods to create accurate and reliable precipitation estimates for the areas of interest.

The special-status species query in the 7.5-minute USGS Blocksburg quadrangle, and the eight (8) adjacent, resulted in thirty-three (33) special-status animal species (4 amphibians, 12 birds, 6 fishes, 3 insects, 5 mammals, 1 reptile) (Table 1), fifty-eight (58) special-status plant (2 bryophytes, 2 lichens, 54 Vascular) (Table 2) and two (2) special status habitat communities (North Central Coast Summer Steelhead Stream and Upland Douglas Fir Forest).

For special-status plant species, prior to the site visit and field survey, the list of potentially occurring species was assessed based on evaluation, habitat, and mico-habitat requirements. Suitable habitat for some of the species in the generated list were therefore determined to not exist within the project site or surrounding area (Table 2).

3.2 Biological Resource and Habitat Investigation

A biological resource and habitat investigation was conducted within the Study Area between 1:00 PM and 2:30 PM on April 7th, 2022 by Mason London (Map 3).

[6] https://prism.oregonstate.edu/explorer/

The primary objective of the site investigation and field survey was to identify suitable habitat for special-status species and evaluate the potential impact of the proposed project activities, with a specific focus on the designated project area within the Study Area. The assessment considered the likelihood of the project and related activities to result in take or incidental take of the identified special-status species (as outlined in Tables 1 and 2). Take, as defined by the Federal Endangered Species Act (FESA), encompasses actions that may harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect wildlife, or engage in any such conduct (16 U.S.C., §1532 (19)[7]). The investigation and assessment of the Study Area habitat was conducted within this framework.

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

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

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

3.2.1 Floristic Survey

Since ground disturbance was predetermined to occur in conjunction with the proposed cannabis project, protocol-level botanical surveys were recommended at the time of the site visit and will be conducted during the 2023 bloom season as a measure to inventory and assess the potential impacts to listed and special-status plant species that may occur within the project area.

This botanical field survey will follow protocols recommended by CDFW, and are in accordance with the guidelines established by CNPS, from the document Protocols for Surveying and Evaluating Impacts to Specie Status Native Plant Populations and Sensitive Natural Communities[8] (CDFW, 2018). Plants should be identified onsite and a census of species be recorded. Specimens not readily identifiable are to be collected and keyed out later with the use of The Jepson Manual of the California Flora and other field guides. The survey should occur within an area determined to be potential impacted by the proposed project within the Study Area. This survey will document all occurring species within the habitats surveyed.

The survey is to be floristic in nature, meaning that all plant taxon encountered during the botanical field survey of the Study Area are identified to the taxonomic level necessary to determine rarity and listing status. The field visits will be planned to coincide with the blooming period for the listed species assumed to have a potential presence within the Study Area, specifically within the boundaries of the project site and surrounding area.

[7] **California Endangered Species Act to the Federal Endangered Species Act Definitions:** https://wildlife.ca.gov/Conservation/CESA/FESA

[8] **Specie Status Native Plant Populations and Sensitive Natural Communities**: file:///C:/Users/Masonslondon/Downloads/2018%20Protocols%2013%20rev1.pdf

3.2.2 Wetlands, Soils and Streamside Management Areas Assessment and Determination

Prior to the site investigation, the Study Area was assessed for the presence of wetlands utilizing several digital databases and resources including the USFWS National Wetland Inventory (NWI), NRCS Web Soil Survey, USGS topographic maps, and inundation or saturation visible on aerial imagery (Map 5). Data regarding the Study Area's soil type was obtained from the Natural Resource Conservation (NRCS) Service Web Soil Survey (Map 5; Appendix E).

Observed field conditions were utilized to determine the potential presence of wetland features, aiding in the determination of potential presence of wetland and/or other aquatic resource habitats. The US Army Corps of Engineers (USACE) and California North Coast Regional Water Quality Board regulates wetlands and other waters under section 404 of the Clean Water Act (CWA). The USACE defines "wetlands" as those areas that exhibit hydric soils, hydrophytic vegetation, and wetland hydrology. No soil test pits were dug for evaluating the presence of hydric soil since other wetland indicators such as hydrophytic vegetation and wetland hydrology were able to be visibly detected during the time of the site visit. The "err on the side of caution" approach to determining potential wetland habitats was implemented when visually assessing the site and determining potential presence, encroachment, or impact to setbacks. Field observations of identifiable plant communities were used to assist interpretation of aerial imagery in defining potential wetland areas and their boundaries. If potential wetland features were determined to be present, based on field observations of vegetation and hydrology, it would be recommended that test pits be dug to ascertain hydric soil presence and therefore confirm or deny the determinations of wetland features existing within the Study Area.

Watercourses and their associated classes are determined based on the Forest Practice Rules Water Course and Lake Protection Zone definitions, by use of visual observation when conducing the reconnaissance survey.

3.2.3 Occurrence of Special-Status Species

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

1. ***"None."*** Species listed as having "none" potential of occurrence are those species for which there is no suitable habitat within the project area (elevation, hydrology, plant community, disturbance regime, etc.)

2. ***"Low."*** Species listed as having a "low" potential of occurrence are those species for which there is no known occurrence of the species within the project area and there is limited or marginal suitable habitat present at the project area.

3. ***"Moderate."*** Species listed as having "moderate" potential of occurrence within the project area are those species for which there is a known record of occurrence within or in the vicinity of the project area and/or there is suitable habitat present within the project area.

4. ***"High."*** Species listed as having "high" potential of occurrence within the project area are those species for which there is a known record of occurrence within or in the vicinity of the project area and/or there is highly suitable habitat present within the project area.

5. ***"Present."*** Species listed as having "present" potential of occurrence within the project area are those species for which the species was observed during the field survey.

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

Section 4 Results and Discussion

4.1 Study Area's Regional Alliances

The Regional Dominate Alliances within the Study Area, according to the CALVEG database, consist of: Annual Grasses and Forbs Alliance, Pacific Douglas-Fir Alliance, Oregon White Oak Alliance (Map 6). Other mapped Alliances surrounding the Study Area include Interior Mixed Hardwood Alliance, and Scrub Oak Alliance (Map 6). The Alliance definitions below are from CALVEG and do not represent actual observations made, or necessarily species identified during the site visit investigation.

4.1.1 Annual Grasses and Forbs Alliance

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

4.1.2 Pacific Douglas-Fir Alliance

Douglas-fir (*Pseudotsuga menziesii*) is the dominant overstory conifer over a large area in the Mountains, Coast, and Ranges Sections. This alliance has been mapped at various densities in most subsections of this zone at elevations usually below 5600 feet (1708 m). Sugar Pine (*Pinus lambertiana*) is a common conifer associate in some areas. Tanoak (*Lithocarpus densiflorus var. densiflorus*) is the most common hardwood associate on mesic sites towards the west. Along western edges of the Mountains Section, a scattered overstory of Douglas-fir often exists over a continuous Tanoak understory with occasional Madrones (*Arbutus menziesii*). When Douglas-fir develops a closed-crown overstory, Tanoak may occur in its shrub form (*Lithocarpus densiflorus var. echinoides*). Canyon Live Oak (*Quercus chrysolepis*) becomes an important hardwood associate on steeper or drier slopes and those underlain by shallow soils. Black Oak (*Q. kelloggii*) may often associate with this conifer but usually is not abundant. In addition, any of the following tree species may be sparsely present in Douglas-fir stands: Redwood (*Sequoia sempervirens*), Ponderosa Pine (*P. ponderosa*), Incense Cedar (*Calocedrus decurrens*), White Fir (*Abies concolor*), Oregon White Oak (*Q. garryana*), Bigleaf Maple (*Acer macrophyllum*), California Bay (*Umbellifera californica*), and Tree Chinquapin (*Chrysolepis chrysophylla*). The shrub understory may also be quite diverse, including Huckleberry Oak (*Q. vaccinifolia*), Salal (*Gaultheria shallon*), California Huckleberry (*Vaccinium ovatum*), California Hazelnut (*Corylus cornuta var. californica*), Poison Oak (*Toxicodendron diversilobum*), Oceanspray (*Holodiscus discolor*), Hairy Honeysuckle (*Lonicera hispidula*) and a wide range of other shrubs and forbs.

4.1.3 Oregon White Oak Alliance

Oregon White Oak (*Quercus garryana*) is widely distributed from British Columbia to this zone, with outlying scattered populations further east and south to the Sierra Nevada Mountains and southern California. The tree form (*Q. g. var. garryana*) becomes a local canopy dominant in woodlands of the three sections of this zone across thirty-one subsections, becoming especially prominent in seven of

them. Mapped elevations of this type are usually below about 5800 feet (1768 m). Often developing on poor, exposed or droughty soils in inland valleys, foothills or rocky ridges, the Oregon White Oak type also is found in poorly drained areas having occasional standing water or next to stream terraces. On better sites, it is usually out-competed by species such as Douglas-fir (*Pseudotsuga menziesii*) and California Black Oak (*Q. kelloggii*), often becoming a minor element in mixed hardwood types. Other associated species include other conifers such as Ponderosa Pine (*Pinus ponderosa*), Gray Pine (*P. sabiniana*) and Western Juniper (*Juniperus occidentalis var. occidentalis*), various Oaks (*Quercus spp*.), Wedgeleaf Ceanothus (*Ceanothus cuneatus*), Chamise (*Adenostoma fasciculatum*), and especially in recently burned areas, Deerbrush (*Ceanothus integerrimus*). Open sites often have a grass understory. The shrub form, Brewer Oak (*Quercus garryana var. breweri*), usually occupies higher elevations on shallow soils (see Brewer Oak Alliance).

4.1.4 Interior Mixed Hardwood Alliance

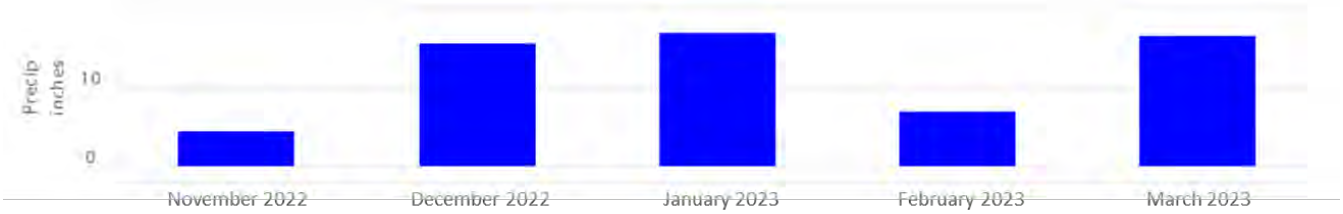
No single species is dominant in the Interior Mixed Hardwood Alliance, a mixture that has been mapped most extensively in the Central Franciscan and Ultrabasic Complex Subsections of the Mountains Section and the Mount St. Helena Flows and Valleys, Coast Franciscan and Marin Hills and Valleys Subsections of the Coast Section. It also occurs with less abundance in thirteen other subsections in all three sections. The mixture in this area includes diverse proportions of Oregon White (*Quercus garryana*), Canyon Live (*Q. chrysolepis*) and Blue (*Q. douglasii*) Oaks, with lesser amounts of California Bay (*Umbellifera californica*) and Coast Live Oak (*Q. agrifolia*). Conifer associates are mainly Douglas-fir (*Pseudotsuga menziesii*) and in western areas, Redwood (*Sequoia sempervirens*). This alliance has been mapped at elevations generally below about 4000 feet (1220 m). Annual grasses and forbs typically occur in these open sites.

4.1.5 Scrub Oak Alliance

Scattered areas dominated by shrubby oak species (*Quercus spp*.) have been mapped at elevations generally below about 5000 feet (1524 m) where soils are sufficiently deep or shaded in this zone. On serpentine soils, patchy stands of Leather Oak (*Quercus durata*) may develop in chaparral sites of the Eastern and Central Franciscan and Ultrabasic Complex Subsections of the Ranges Section such as in the Frenzel Creek area. Sadler Oak (*Quercus sadleriana*) may become established after fire and logging in montane areas of the Mountains Section such as in the Upper Salmon Mountains, Siskiyou Mountains and Eastern Klamath Mountains Subsections. Other scrubby oaks such as Canyon Live Oak (*Quercus chrysolepis var. nana*) and Interior Live Oak (*Quercus wislizenii var. frutescens*) may also occur in this type. The Scrub Oak type has also been identified in interior, scattered locations of the Coast Section (Mount St. Helena Flows and Valleys and Coastal and Central Franciscan Subsections). This type has been mapped widely and abudantly across this zone in twenty-one subsections. True Scrub Oak (*Quercus berberidifolia*) is rare in the northern part of this Province, reaching its northern limit in eastern Tehama County. Associated species of the Scrub Oak type may also include minor amounts of Brewer Oak (*Quercus garryana var. breweri*), Chamise (*Adenostoma fasciculatum*), Manzanita (*Arctostaphylos spp*.) and other chaparral species.

4.2 Observed Study Area Habitat, Existing Site Conditions and Project Location Feasibility

During the April 7th, 2023 site visit and field survey, the weather was sunny and clear with a temperature of 54° F when the survey began and a windspeed of approximately 2.5 mph. Precipitation values for the months leading up to the site visit were higher than had been in recent years:



Latitude: 40.2879 Longitude: -123.6679 Elevation: 1775ft (541m): 4km PRISM cells / not interpolated
Precipitation, Mean temp: English units / Monthly values
November 2022 - March 2023 (the PRISM day spans 24 hours ending at 1200 UTC on the day shown): Data stability: provisional

There was a projected total of 4.52 inches of rain at the Study Area for the entire month of November 2022, 15.71 inches in December 2022, 17.18 inches in January 2023, 7.10 inches in February 2023, 16.74 inches in March 2023, and 1.66 inches in April 2023 leading up to the site visit (PRISM Climate Group, 2023). Precipitation values displayed for December, January and March are above average for this region.

The main habitats investigated within the Study Area consists of the parcel's residence and surrounding residentially used area, upland grasslands, oak woodlands, mixed hardwood and coniferous forest, riparian corridors, and watercourses. These habitats were assessed based on habitat quality parameters in relationship to previous habitat modification. These habitats were also assessed based on the potential to harbor special-status species. The riparian corridors and watercourses within the Study Area, were investigated and adequately buffered with setbacks to the proposed project area (Map 4).

4.2.1 Study Area Habitat

The upland portion of the Study Area is dominated by open upland grassland with scattered patches of chaparral shrub features, oak woodlands, and mixed hardwood and coniferous forest (Map 2 & 3). Cannabis cultivation, outside of the Area Assessed for Project Feasibility, has occurred within the Study Area prior to 2012 within the locations marked as existing cultivation in Map 2 – 4.

Due to the seasonal timing of this site visit, the majority of the species within the upland grassland habitat were unidentifiable, however, based on current site conditions from past land practices, it is apparent that this area is dominated by many nonnative and invasive forb and grass species, as well as other common native forb and grass species (Photo 1 & 2). Species that were identifiable during the site include: velvet grass (*Holcus lanatus*), slender oat (*Avena barbata*), dogtail grass (*Cynosurus echinatus*), annual bluegrass (*Poa annua*), sweet vernal grass (*Anthoxanthum odoratum*), sheep sorell (*Rumex acetosella*), Queen Anne's lace (*Daucus carota*), rough cat's ear (*Hypochaeris radicata*), scarlet pimpernel (*Lysimachia arvensis*), English plantain (*Plantago lanceolata*), spring vetch (*Vicia sativa*), Western bracken fern (*Pteridium aquilinum*), Scotch broom (*Cytisus scoparius*), Italian thistle (*Cardus pycnocephalus*), soap plant (*Chlorogalum pomeridiaum*), fennel (*Foeniculum vulgare*), coyote brush (*Baccharis pilularis*), and others. Species mentioned here do not represent a protocol-level botanical survey, which is being recommended for this project. Species are mentioned here are to

present a general overview of the habitat type and quality of the upland grassland habitat located within the Study Area.

The oak woodlands habitat occurs on the outskirts of the upland grassland habitat, along the slopped hillsides to the south west of the parcels and surrounds the riparian corridors of the Class II watercourses (Photo 1 & 3). This habitat type surrounds the lower Area Assessed for Project Feasibility on the north, west, and south sides (Photo 1). Species within this habitat Oregon white oak (*Quercus garryana*), Pacifica madrone (*Arbutus menziesii*), Douglas-fir (*Pseudotsuga menziesii*), manzanita (*Arctostaphylos spp.*), poison oak (*Toxicodendron diversilobum*), dogtail grass (*Cynosurus echinatus*), rattlesnake grass (*Briza maxima*) and others. Species mentioned here do not represent a protocol-level botanical survey, which is being recommended for this project. Species are mentioned here are to present a general overview of the habitat type and quality of the oak woodlands habitat within the Study Area.

The mixed hardwood and coniferous forest occurs to the north of the parcel of the. This habitat type surrounding the upper Area Assessed for Project Feasibility, as well as the well and water storage tanks (Photo 4 – 7; Map 2). Species within this habitat include Douglas-fir (*Pseudotsuga menziesii*), tan oak (*Notholithocarpus densiflorus*), Oregon white oak (*Quercus garryana*), California buckeye (*Aesculus californica*), whitebark raspberry (*Rubus leucodermis*), Himalayan blackberry (*Rubus armeniacus*), poison oak (*Toxicodendron diversilobum*), deer brush (*Ceanothus integerrimus*), and others. Species mentioned here do not represent a protocol-level botanical survey, which is being recommended for this project. Species are mentioned here are to present a general overview of the habitat type and quality of the mixed hardwood and coniferous forest habitat within the Study Area.

Species observed within the riparian corridor were willow (*Salix spp.*), Pacifica madrone (*Arbutus menziesii*), California Bay laurel (*Umbellularia californica*), poison oak (*Toxicodendron diversilobum*), and others (Photo 8; Map 4). Species mentioned here do not represent a protocol-level botanical survey, which is being recommended for this project. Species are mentioned here are to present a general overview of the habitat type and quality of the riparian corridor habitat within the Study Area.

A pond also exists within the Study Area but is not currently being utilized for this cannabis project.

4.2.2 Area Assessed for Project Feasibility

The two Areas Assessed for Project Feasibility have similar habitat types, mainly consisting of upland grassland habitat. The lower area is surrounded by oak woodland habitat on three sides and an Existing Cultivation Area on the northeastern side (Photo 1 & 2; Map 2), while the upper area is within a previously cleared flat surrounded by mixed hardwood and coniferous forest (Photo 4 & 5; Map 2). The cleared habitat of the upper area shares similar plant species with other parts of the upland grassland habitat.

Based on the habitat quality, location, and setback from sensitive habitats, cultivating cannabis in these areas is not expected to have negative impacts on the environment or biological resources. However, it is recommended to conduct pre-construction surveys and protocol-level botanical surveys to further investigate and ensure due diligence.

Developing a cultivation site in these areas would require minimal habitat alteration, as there is no need to clear brushy vegetation or perform extensive grading due to existing disturbance and site features. Access to the sites is already available and drivable, allowing minimal disturbance to surrounding habitats. The cannabis operation is transitioning to solar power with generator backup, reducing the need

for noise-producing generators during cultivation. Mitigation measures for potential disturbances associated with cannabis cultivation are discussed further in Section 5 Conclusion.

4.3 Watercourses, Aquatic Habitats, and Streamside Management Areas

Watercourses near the lower Area Assessed for Project Feasibility were identified as Class IIIs transitioning to Class IIs based on observed habitat features and watercourse classification definitions. The riparian dripline and edge of the bank were delineated in the field and using LiDAR for Class II watercourses, which exhibited riparian areas. (Photo 8; Map 4). The buffers applied to the aquatic habitats, and presented in Map 4, adhere to both state and county setback requirements (Map 4). These buffers have been established as the Streamside Management Areas (SMA) as per Section 1, Requirement 37 of the California State Water Resource Control Board's *Cannabis Cultivation Policy Attachment A: Definitions and Requirements for Cannabis Cultivation*[2] (Map 4). The determination of the watercourse classes is based upon the Forest Practice Rules Water Course and Lake Protection Zone definitions (California Code of Regulation, title 14, Chapter 4. Forest Practice Rules, Subchapters 4, 5, and 6 forest District Rules, Article 6 Water Course and Lake Protection[9]). Per County of Humboldt setback rules, the Class II watercourses (intermittent) were buffered 50 ft from the edge of the riparian dripline, where ass the Class III (ephemeral) have no buffer. Per California State Water Resource Control Board's setback rules, the Class II watercourse were buffered 100 ft from the top of bank and the Class III were buffered 50 ft from top of bank (Map 2).

Another aquatic habitat observed within the Study Area is a man-made rain catchment pond proposed for irrigation of the cannabis project. This habitat has the potential to harbor native, non-native, special-status and invasive species. Due to the prolonged existence of this aquatic habitat, it is unlikely that the project activities would have any impact to this resource feature that are not already occurring. Furthermore, any potential impacts to the aquatic habitats within the Study Area can be minimized if best management practices (BMP) are implemented and mitigation for impact to special-status species can be achieved (Appendix F). Recommendations for mitigation are presented in *Section 5.1.3*.

The location within the Study Area that was determined to be feasible for cannabis cultivation is not anticipated to cause any negative interface with the Eel River, or its tributaries, since the necessary buffered setbacks will be followed. Furthermore, any potential impacts to the aquatic habitats within the Study Area can be minimized if best management practices (BMPs) are used during the construction and development of the project site (Appendix F).

There is no anticipated impact to these watercourses, or any aquatic habitat in association with this project, if these buffers and setbacks are adhered to and if the project development and construction follows the recommendations presented in *Section 5.1.3*.

4.3.1 Wetland Habitats

A protocol-level delineation did not occur in conjunction with the biological reconnaissance survey conducted and described in this Report. However, with the use of visual observations of the project area, its surrounding habitat, mapped wetland occurrences from the NWI, current hydrology, and vegetation communities, a conservative approach was followed when assessing whether or not the extent in which potential wetland features occur. Federal regulations define wetlands as "[t]hose areas that are inundated

[9] **Forest Practice Rules Water Course and Lake Protection Zone definitions:** https://www.law.cornell.edu/regulations/california/title-14/division-1-5/chapter-4/subchapter-6/article-6

or *saturated by surface or ground water* at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of *vegetation* typically adapted for life in *saturated soil*" (33CFR328.3(b)[10]). This definition expresses that, under normal conditions, three parameters must be met to classify a site as a jurisdictional wetland, which includes hydrophytic vegetation, hydric soils, and wetland hydrology.

Based on remote data analysis and onsite investigation, it appears that no three parameter wetlands occur within any proximity of impact to the project area (Map 5). A protocol-level wetland determination may be required within the proximity of the project site for project approval by local agencies, but is not recommended based on field and satellite imagery observations.

4.3.2 Study Area Soils

The general soil types presented as Soil Map Units on Map 5, were obtained from the Web Soil Survey and presented in further detail in Appendix E.

The majority of the Study Area, including the entire portion of the upper Area Assessed for Project Feasibility and approximately half of the lower Area Assessed for Project Feasibility, occurs within the Map Unit 668: Dryfield-Yorknnorth-Witherell (Map 5). Map Unit 673: Coolyork-Yorknorth occurs in the southwestern portion of the Study Area, comprising half of the soil map unit of lower Area Assessed for Project Feasibility (Map 5). A small portion of Map Unit 451: Burgsblock-Coolyork-Tannin occurs in the top upper northeastern corner (Map 5).

Map Unit 668: Dryfield-Yorknnorth-Witherell complex complex is a map unit characterized by mountain slopes with slopes ranging from 30 to 50 percent. It has an elevation ranging from 200 to 2,490 feet and receives an average annual precipitation of 49 to 90 inches. The mean annual air temperature is between 52- and 59-degrees Fahrenheit, with a frost-free period lasting 240 to 280 days. The complex consists of different soil types, with Dryfield and similar soils comprising 40 percent, Yorknorth and similar soils comprising 30 percent, Witherell and similar soils comprising 15 percent, and minor components making up the remaining 15 percent. Dryfield soils have a profile consisting of loam layers at various depths, while Yorknorth soils have silt loam and clay layers. Witherell soils have a profile with loam and gravelly loam layers. The complex exhibits characteristics such as well-drained drainage class, moderately high to high water transmission capacity, and a depth to the water table greater than 80 inches. It is classified as non-prime farmland and has high available water supply in the top 60 inches. The hydrologic soil group varies between B and C. The complex is associated with specific ecological sites, such as Thermic Mountains for Dryfield and Thermic Hills for Yorknorth and Witherell. None of the soil components within the complex have a hydric soil rating. Additionally, the complex includes minor components like Coolyork, Tannin, Burgsblock, and Rock outcrop, each occupying a small percentage of the map unit.

Map Unit 668: Dryfield-Yorknnorth-Witherell complex is a mountain slope map unit with slopes ranging from 30 to 50 percent. It has an elevation of 200 to 2,490 feet and receives an average annual precipitation of 49 to 90 inches. The mean annual air temperature is between 52- and 59-degrees Fahrenheit, with a frost-free period lasting 240 to 280 days. The complex consists of Dryfield, Yorknorth, and Witherell soils, along with minor components. Dryfield soils have loam layers, Yorknorth soils have silt loam and clay layers, and Witherell soils have loam and gravelly loam layers. The complex is well-drained and has a high available water supply. It is not prime farmland and is associated with specific ecological sites. None of the soil components within the complex have a hydric soil rating. Minor

[10] **Definition of Waters of the United States:** https://www.nap.usace.army.mil/Portals/39/docs/regulatory/regs/33cfr328.pdf

components include Coolyork, Tannin, Burgsblock, and Rock outcrop, each occupying a small percentage of the map unit.

Map Unit 673: Coolyork-Yorknorth complex is a mountain slope map unit with slopes ranging from 30 to 50 percent. It has an elevation of 200 to 2,490 feet and receives an average annual precipitation of 49 to 90 inches. The mean annual air temperature is between 52- and 59-degrees Fahrenheit, with a frost-free period lasting 240 to 280 days. It is not classified as prime farmland and consists of Coolyork and Yorknorth soils, along with minor components. Coolyork soils have a concave, linear shape and are associated with colluvium derived from mudstone and/or sandstone. Yorknorth soils have a concave, linear shape and are associated with colluvium derived from sandstone and/or schist. Both soils have layers of loam, clay loam, clay, and gravelly clay loam. They are moderately well-drained with a high available water supply. Minor components include Witherell, Dryfield, Burgsblock, Tannin, and Rock outcrop, each representing a small percentage of the unit.

Map Unit 451: Burgsblock-Coolyork-Tannin complex is a map unit characterized by slopes ranging from 15 to 30 percent. It is found at elevations between 200 and 4,000 feet and receives an average annual precipitation of 49 to 90 inches. The mean annual air temperature is between 52 and 59 degrees Fahrenheit, with a frost-free period lasting 240 to 280 days. It is classified as non-prime farmland and consists of Burgsblock, Coolyork, Tannin, and minor components. Burgsblock soils have slightly decomposed plant material, gravelly loam, and very gravelly loam layers. Coolyork soils have loam, clay loam, and gravelly loam layers. Tannin soils have slightly decomposed plant material, loam, sandy clay loam, and sandy clay loam layers. All three soils are associated with mountain slopes and have different drainage classes and water transmission capacities. The complex also includes minor components such as Rockyglen, Wohly, Chalkmountain, Yorknorth, and rock outcrop, each with their own characteristics and distribution within the map unit.Full soil type descriptions can be found in Appendix E.

4.4 Special-Status Plant Species and Communities

4.4.1 Definitions

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

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

4.4.2 Special-Status Plant Species and Communities Observed

All habitats encountered during this survey were assessed to determine the potential to harbor certain species (Table 2- Potential of Occurrence). The entire Study Area was not surveyed for special-status plant species with equal effort. The habitats investigated for potential presence of special-status plant species consist of the Area Assessed for Project Feasibility, and a 200 ft buffer around its perimeter, since this is the area with the potential to be impacted by proposed project activities. All species derived from the CNDDB list were assessed for potential occurrence within the Study Area, both within the potential project locations, and within the surrounding habitats (Table 2).

No special-status plant species were encountered during the initial survey site visit, even though this initial site visits occurred outside of the bloom period of listed species with potential to occur within the Study Area. No special-status plant species have known recorded occurrences within the Study Area according to the CNDDB (Map 7).

As previously mentioned, many species observed were unidentifiable during this initial site visit due to the bloom period of the individual species. However, a protocol-level botanical survey is being conducted in conjunction with this project and will be floristic in nature, meaning all species will be identified since the Study Area will be visited during multiple times to capture blooming periods of all special-status species with the potential of occurrence.

If the findings from the protocol-level botanical survey render no special-status species, and the recommendations presented in Section 5.1.3 are followed for the development and utilization of the project site, as well as project construction follows the Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMPs) presented in Appendix F, no further foreseeable impacts to the surrounding vegetative environment or floristic biological resources are likely to occur at the Area Assessed for Project Feasibility.

4.5 Special-Status Animals Species

Not all previously mentioned habitats within the Study Area were surveyed for special-status animal species potential utilization with equal effort. The habitats investigated for presence and habitat requirements of special-status animal species consist primarily of the habitats that could be impacted by the project development and its associated activities. It is assumed that disturbance of special-status animal species habitat could result in take, or incidental take, of the species determined to utilize these habitats. Regardless of the habitats investigated, all species derived from the CNDDB list were assessed for potential occurrence within the Study Area, both within the potential project area (the Area Assessed for Project Feasibility), and within the surrounding habitats (the Study Area) (Table 1).

Wildlife species observed during the initial reconnaissance site survey were: Western bluebird (*Sialia Mexicana*), Stellar's jay (*Cyanocitta stelleri*), turkey vulture (*Cathartes aura*), Red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), song sparrow (*Melospiza melodia*), and dark-eyed junco (*Junco hyemalis*). Species listed here do not represent a protocol-level survey for wildlife.

4.5.1 Special-Status Animals Species with Potential for Occurrence

The Study Area contains moderate potential habitat for various special-species, many of them being birds and bats (Table 1). However, these species would primarily use the proposed project site for hunting and foraging, and not for nesting or shelter due to the lack of canopy cover and suitable structures. The habitat necessary for these species is abundant throughout the Study Area, ensuring ample foraging

opportunities even after project development. To minimize potential disturbances, it is advised to mitigate noise and light pollution associated with the project, as this could indirectly impact species in the surrounding habitats. Conducting preconstruction surveys for migratory nesting birds and raptors is still recommended to prevent any harm to these species. Overall, if the recommendations presented in Section 5.1.3 are followed, the project can proceed without causing harm or significant impact to these wildlife species in the area.

The other species that are not birds or bats that have a moderate potential of occurring within the Study Area with a potential of being directly impacted by the proposed project, include Northern red-legged frog (*Rana aurora*), foothill yellow-legged frog (*Rana boylii*), Western bumble bee (*Bombus occidentalis*), obscure bumble bee (*Bombus caliginosus*), North American porcupine (*Erethizon dorsatum*), and American badger (*Taxidea taxus*) (Table 1).

Northern red-legged frog (*Rana aurora*) inhabits quiet pools of streams, marshes, and occasionally ponds. They can generally be found along the Coast Ranges from Del Norte County to Mendocino County, usually below 1200 m (3936 ft). The presence of a pond feature within the Study Area renders it moderately likely that this species could occur. However, there are no activities associated with the cultivation that would harm this species if it recruited within the habitat, since the applicant does not allow this pond to ever run dry. Furthermore, the continued maintenance of this pond feature retaining water during the drier months of the year is creating refuge for this species to utilize and therefore this aspect of the project is beneficial to Northern red-legged frogs. Predators that the pond my harbor, such as American bullfrogs, my also utilize this habitat feature and may impact the ability for Northern red-legged frogs to reside within the pond. Recommendations to combat the presence of American bullfrogs is listed in *Section 5.1.3*. Following the Bullfrog Management Plan would likely aid in the establishment of native amphibian species within the pond feature.

The **foothill yellow-legged frog** is known to inhabit a wide range of habitats, including the foothills and lower elevation areas near rivers, streams, and creeks. They can be found in various water bodies, such as fast-flowing sections, as well as slower-moving areas like pools, eddies, and riffles. The surrounding landscape often consists of mixed forests, woodlands, and shrublands, which provide important shade and cover for the frogs. These habitats offer a combination of aquatic and terrestrial environments, enabling the foothill yellow-legged frogs to breed in the water and find food on land. It is crucial to preserve the quality of these habitats, including maintaining water quality and protecting riparian vegetation, in order to ensure the survival and conservation of this species.

Considering the close proximity of the lower Area Assessed for Project Feasibility, there is a moderate likelihood that these frogs could be utilizing this habitat or habitats that may be directly affected by project-related activities. Conducting preconstruction surveys specifically targeting amphibians prior to any project construction or development is strongly recommended to prevent any harm to these species. By adhering to the recommendations outlined in Section 5.1.3, the project can proceed without causing detrimental effects or significant impacts to the foothill yellow-legged frog and other amphibian species that may be present in the area.

The **Western bumble bee** is widely distributed in California and plays a crucial role as a pollinator for a diverse range of flowering plants. These bees are known to establish their nests in abandoned burrows and cavities, and it is possible that suitable nesting locations may exist within the project areas under consideration. However, the habitat quality within the project areas, as well as the presence of abundant suitable habitat throughout the Study Area, make it unlikely that there would be a significant loss of

nesting habitat resulting from project development. Moreover, the potential project development is not expected to cause a significant decrease in forage material for the Western bumble bee. The presence of similar homogeneous habitat throughout the broader Study Area, like that found within the Area Assessed for Project Feasibility, ensures the availability of ample food sources for the bees. Considering these factors, it is not anticipated that the proposed project will have a negative impact on the Western bumble bee population.

Similar to the Western bumble bee, the **obscure bumble bee** may utilize portions of the Areas Assessed for Project Feasibility for various stages of its life cycle. However, the overall habitat quality within the project areas, coupled with the abundance of suitable habitat throughout the Study Area, suggests that there is unlikely to be a significant loss of nesting habitat as a result of the proposed project. Additionally, the potential development is not expected to cause a substantial reduction in forage resources available this species either. The presence of comparable homogeneous habitat across the broader Study Area, ensures the availability of abundant food sources for these bees. Taking these factors into consideration, it is not anticipated that the proposed project will have a detrimental impact on the obscure bumble bee population.

The **North American Porcupine** can be found in forested habitats in broadleaf upland forest, cismontane woodland, and lower and upper montane conifer forest. Even though this species may reside nearby and could pass through the project site while foraging, the lack of cover within the project area makes it unlikely that this species would utilize open field habitat. This species relies on the availability of dense vegetation and trees for protection from predators and to create their den sites. Without adequate cover, the project site is less conducive to supporting porcupine populations. Furthermore, the frequent human activity that occurs within the Study Area, likely including the project site, can discourage porcupines from utilizing the area. These nocturnal and generally shy creatures tend to avoid areas with high human presence and disturbance. The noise, movement, and alteration of their habitat caused by human activities can deter them from establishing their home ranges in such locations.

Considering these factors, it is not anticipated that the proposed project will have a negative impact on the North American porcupine population. However, it is important to continue monitoring and assessing the potential effects on this species and its habitat during and after project development to ensure the preservation and conservation of the North American porcupine. To minimize potential disturbances, it is advised to mitigate noise and light pollution associated with the project, as this could indirectly impact this species in the surrounding habitats.

The **American badger** inhabits drier open stages of shrub, forest, and herbaceous habitats. They rely on specific conditions including ample food sources, friable soils, and open, uncultivated ground. Pocket gophers are a primary prey species, and their densities are higher in grazed meadows. Even though, the Study Area currently lacks grazing animals, the proposed conversion of upland grassland to cannabis cultivation is not expected to significantly impact the American badger's suitable habitat. The remaining adjacent habitat will continue to provide foraging opportunities. However, the project's development may discourage badgers from utilizing the site for burrowing and hunting if already present. Recommendations to avoid disturbance are provided in the report. Preserving the undisturbed surrounding habitat is crucial to support the American badger population. Mitigation measures should also address noise and light pollution to protect the badger's nocturnal behavior.

By implementing BMPs and specific mitigations outlined in Section 5.1.3, the project is expected to have no adverse impact on the terrestrial and aquatic species, as well as the riverine habitat associated with

this project. Following these recommendations will ensure the preservation and conservation of these ecosystems and their inhabitants, mitigating any potential harm caused by project activities.

4.5.2 Other Special-Status Animal Species

The nearest known **northern spotted owl (*Strix occidentalis caurina*)** Activity Centers (AC), according to the most up to date CNDDB Spotted Owl Viewer, are approximately 1.50 air miles (HUM1095) north of the nearest boundary of Area Assessed for Project Feasibility (Map 8; Occurrence Report 1).

It is stated in the County of Humboldt's 2018 resolution certifying the EIR for the CCLUO, in *Mitigation Measure 3.4-1e: Northern spotted owl preconstruction habitat suitability surveys and determination of presence or absence*[11],

> "[i]f the area of proposed new development activities 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, 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, 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."

The County of Humboldt's 2018 resolution certifying the EIR for the CCLUO goes on to state that "[i]f northern spotted owls are determined to be absent 1.3 miles from the site, then further mitigation is not required." Since the nearest known AC is further than 1.3 miles away from the Area Assessed for Project Feasibility, a disturbance and habitat modification assessment to determine the presence of the species is not necessary.

Furthermore, northern spotted owl resides in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 2300 meters. They usually nest in trees or snag cavities, or in broken tops of large trees (Polite C. 1990). Roost selection for northern spotted owl is "… related closely to thermoregulatory needs [since they are] intolerant of high temperatures." Because of this, northern spotted owl "[r]oost in dense overhead canopy on north-facing slopes in the summer," (Zeiner, D.C. et al, 1988-1990. The Study Area does not exhibit this species' preferable forest type, due to the size, structure, and species of the trees within the Study Area, and is therefore not likely utilized for nesting, roosting, or foraging/hunting by northern spotted owl. The Area Assessed for Project Feasibility is entirely open, with no habitat or vegetation for nesting or roosting and all habitat modification associated with this project is determined to have no impact to any aspect of northern spotted owl's life history. Because of this, the Area Assessed for Project Feasibility would not be utilized by this species for foraging and/or hunting.

Surrounding the Study Area (off site of the parcel), there is moderate suitable habitat for northern spotted owl, but if the recommendations made in *Section 5.1.3* are followed, all potential direct or indirect impacts to this species can be mitigated. The Area Assessed for Project Feasibility is outside of any area of disturbance to potential northern spotted owl residing in this nearby habitat to be affected.

[11] **County of Humboldt's 2018 resolution certifying the EIR for the CCLUO:** https://humboldtgov.org/DocumentCenter/View/63736/Resolution-18-40-Certifying-Final-EIR-PDF

Even though this project will not "...remove or modify spotted owl nesting, roosting or foraging habitat…", according to the *USFWS Northern Spotted Owl Survey protocol: Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls*, the "… protocol should also be applied to activities that disrupt essential breeding activities and to activities that may injure or otherwise harm spotted owl other than through habitat modification (e.g., noise disturbance, smoke from prescribed fire)," (USFWS, 2012). It is noted that in general, noise levels of 70 dB or less, would not generate a significant disturbance unless within very close proximity (<25 m) to an active nest (USFWS 2006). Since all activities associated with the development of the proposed cultivation area will have cultivation methods that will mitigate all noise and light pollution, there is no expected disruptions towards essential breeding activities or any activates that may injure or harm this species, or any other species, related to this project. There will be no need for generators (except for backup power) since the parcel will be utilizing grid and solar power, and the applicant can avoid light pollution by completely covering greenhouses when artificially lit, if this method of cultivation is to be pursued.

4.6 Special Status Habitat Communities

The two (2) special-status habitat communities identified in the CNDDB BIOS search in the 7.5-minute USGS Blocksburg quadrangle, and the 8 adjacent quadrangles, are the North Central Coast Summer Steelhead Stream habitat and Upland Douglas Fir Forest habitat.

The **North Central Coast Summer Steelhead Stream** habitat consists of freshwater streams and rivers in the North Central Coast region of California, specifically supporting populations of summer steelhead (*Oncorhynchus mykiss*). These streams typically have cool, clear waters with suitable flow rates and depths for steelhead migration and reproduction. The habitat features a mix of deep pools, riffles, and runs, providing diverse aquatic habitats for the fish. The streambanks are often lined with vegetation, such as trees, shrubs, and grasses, which provide shade, stabilize the banks, and offer cover for the fish. The presence of suitable spawning gravels and adequate food sources, including insects, small fish, and aquatic invertebrates, are vital components of the habitat. No aquatic habitat meeting this description occurs within the Study Area. Furthermore, by implementing BMPs and specific mitigations outlined in Section 5.1.3, the project is expected to have no adverse impact on any onsite or offsite riverine habitats.

All of the occurrence reports that identify **Upland Douglas Fir Forest** throughout California describe, in the Ecological Comments section, Douglas fir individuals in this community are either "mature" or "old-growth." No Douglas fir trees within the Study Area fit this description. However, according to the California Native Plant Society (CNPS), a Douglas fir forest is comprised of "*Pseudotsuga menziesii* > 50% relative cover in the tree canopy and reproducing successfully, though hardwoods may dominate or co-dominate in the subcanopy and regeneration layer; *Abies concolor, Chamaecyparis lawsoniana, Pinus contorta, P. ponderosa*, and *Sequoia sempervirens* <20% relative cover; and *Notholithocarpus densiflorus* <10% relative cover in the tree canopy" (Jimerson et al. 1996). The forested habitat observed within the Study Area maybe dominated by more than 50% of Douglas fir relative cover in the tree canopy. However, this forest habitat appears to be entirely second growth and therefore does not meet the description of being mature or old-growth. Even if this habitat community exists within the Study Area, the Area Assessed for Project Feasibility does not have any forested habitats and therefore there are anticipated impacts to any forested habitat community.

Section 5 Conclusion

5.1 Potential Impacts and Recommended Mitigation

5.1.1 Potential Direct Impacts

Direct impacts refer to the effects that may occur to the environment through direct interaction with the proposed project. The Biological Reconnaissance and Project Feasibility Assessment conducted in the Study Area have identified suitable sites for cannabis cultivation based on existing habitat type and quality, observed species, and setbacks from sensitive habitats. These designated locations aim to minimize or eliminate potential direct impacts resulting from the project's development.

If project activities take place within the designated sites depicted in Map 2 - 4, it is unlikely that there will be negative impacts on sensitive habitats or significant alteration of the already disturbed habitat quality on the site beyond historical land utilization. Considering the existing disturbances and the commitment to not remove any sensitive vegetation within and around the Study Area, the project's effects on the environment can be mitigated. By adhering to the recommendations outlined in Section 5.1.3, adverse effects on biological resources can be avoided.

Furthermore, the Area Assessed for Project Feasibility shows an abundance of invasive and nonnative species. The proposed project has the potential to contribute to environmental improvement by removing these invasive species during the site development process, thus preventing their further spread. This highlights the project's positive role in enhancing the surrounding environment and habitat.

Disturbance-based impacts commonly associated with cannabis cultivation include noise and light pollution. However, the proposed project ensures that no continuous noise exceeding 70 dB near tree lines will be generated. Additionally, the project will utilize solar power, eliminating the need for noisy generators. If artificial lighting is required for greenhouse cultivation, it will be fully covered to prevent any potential light pollution. As a result, there are no expected disturbance-based impacts on the surrounding wildlife or habitats.

Overall, by following the recommended actions and mitigating potential impacts, the proposed project can be carried out with minimal adverse effects on the environment and its resources.

5.1.2 Potential Indirect Impacts

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

5.1.3 Recommendations

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

- During the development and construction of this project, best management practices (BMPs) should be used to prevent sediment, fuels or contaminates from entering the surrounding terrestrial and aquatic environments/habitats. A complete list of BMPs can be found at Humboldt County: Title III – Land Use and Development - Division 3 - Building Regulations (Ch. 7 § 337-13)[12]. The implementation of BMPs will be dependent on the project construction methods. Best Practicable Treatment or Control (BPTC) and BMPs have been listed in Appendix F for the client's reference when proceeding with any land development associated with the project assessed in this Report.
    - BMPs for this project should include the installation of waddles, silt fences, and berms to combat and prevent erosion and to eliminated contaminates and sediment movement towards the nearby watercourses, if major ground disturbances is proposed. Construction equipment fueling and greasing should occur within one location at the project site, at least 200 ft away from the river, watercourse, or wetland habitat. This location should be clear of brush, flat and contain fuel mats in case of accidental spillage. Development should only occur during daylight hours. Every morning, and throughout the day, during construction the equipment should be inspected for hydraulic fluid, oil or fuel leaks. If leaks are detected, they should be repaired immediately and before any further work in completed in order to prevent excess spillage entering the watercourse.
- The protocol-level botanical survey, which has been initiated in conjunction with this biological assessment, is required to be completed within, and around, the locations defined as being feasible for project activities to occur within this Report. This will be conducted to assure that the proposed project will not impact any special-status plant species. The survey should follow procedures recommended by CDFW, and are in accordance with the guidelines established by CNPS, from the document *Protocols for Surveying and Evaluating Impacts to Specie Status Native Plant Populations and Sensitive Natural Communities*[7] (CDFW, 2018).
- It is recommended that during the time of project site development, the applicant follow the procedures for eradicating the invasive species which will be identified in the projects associated Invasive Species Control Plan document required under the County of Humboldt *Application Requirements Cannabis 2.0*.
- Migratory bird nesting season occurs between February 1 and August 31. If project construction methods result in a sufficient amount of noise from the use of machinery, it is recommended that this construction occur between September 1 and January 31 in order to avoid disturbance to migratory nesting birds. This is also dependent on the location of project development and the project's proximity to nesting bird habitat, such as the riparian corridors identified within the Study Area. Project development proximity to habitat will is to be determined based upon specific project construction methodology. If construction is proposed to occur within the migratory bird nesting season (February 1 and August 31), it is recommended that a biologist survey for nesting birds within the proximity of the project area within a couple weeks (approximately 14 days) prior to the project construction and prior to any vegetation removal. This should be done as a measure to investigate if any migratory, or nonmigratory, birds have constructed nests in any of the trees within a proximity to the project that may be impacted by noise disturbance.

[12] **Best Management Practices for Humboldt Co. can be located at: https:** //humboldt.county.codes/Code/337-13

- It is recommended to conduct preconstruction amphibian surveys in order to effectively avoid any potential impact on species due to the project area's proximity to wetland habitats. These surveys should be carried out within 48 hours prior to any construction activities to assess the presence and distribution of amphibian populations in the area. By identifying the species and their breeding sites, appropriate mitigation measures can be implemented to minimize disturbance and protect their habitats. The surveys should include various methods such as visual surveys and acoustic monitoring to gather comprehensive data on amphibian species. The information obtained from these surveys will guide the project's planning and design, enabling the implementation of targeted measures to avoid or minimize any adverse effects on amphibians during the construction phase. By proactively addressing potential impacts, the project can ensure the conservation and preservation of amphibian species and their vital wetland habitats.
- When the cultivation operation is in process, there is to be no cultivation material outside of the project area, and trash within and outside of the project site, will be regularly removed to avoid interfacing with the surrounding habitat, environment and/or wildlife.
- The applicant should survey the site before any ground disturbance for burrows which may indicate American badger presence. If burrows are observed, pre-construction surveys should be completed by a qualified biologist, before site development occurs. Ground disturbance of the project site, with the use of construction equipment, may result in the potential to injure or kill American badgers by crushing them in their dens or crushing den entrances, which would prevent badgers from escaping. The survey should be conducted to determine if the site location contains active dens and determine if avoidance of these active dens can occur. If active dens are determined to be present, badger relocation should occur to other onsite suitable habitat. The client can avoid the need for a pre-construction survey if above ground pots are utilized for cultivation and no ground disturbance will occur.
- A Bullfrog Management Plan, that complies with CDFW requirements, should be implemented due to the existence of a pond on site.
- If additional activities are proposed that may result in take of a listed species, agency personnel from CDFW and USFWS can further analyze the potential impacts and provide technical assistance for any listed species. If required, guidelines for these reconnaissance surveys should be followed in accordance to the Humboldt County Cannabis Program EIR, CDFW Survey and Monitoring Protocols and Guidelines, which can be located here: https://www.wildlife.ca.gov/conservation/survey-protocols

5.2 Statement of Limitation

The data and findings presented in this Report are valid to the extent that they represent habitat analysis and/or actual sightings of the wildlife and special-status species described. These findings outlined in this Report are based on one (1) Biological Assessment site visit and may not be seasonally appropriate for all conclusive results.

Deficiencies in these findings may result from the following:

- The assessment of habitat utilization within the Study Area, by special-status animal species, was based upon the observations made during a single site visit and further studies and surveys may be required for project approval by local, state or federal agencies as well.

- A floristic survey was not conducted at the time of the site visit investigation described in this report and therefore this document does not represent a completed protocol-level survey. Botanical surveys, at the seasonally appropriate times, following the CDFW floristic survey protocol, are required before the survey can be considered complete.
- The parcel boundaries displayed in the maps created for this Report do not represent a boundary survey. Parcel and property lines shown within these maps are approximated and were acquired from Humboldt County Web GIS, and any errors within these boundaries are a result of errors in Humboldt County's GIS database.
- This Report is not intended to represent a protocol-level wetland delineation. Further wetland investigations of the site may be requested by local agencies.
- This Report is not intended to be a complete biological survey report for all species generated from the CNDDB, but rather an initial reconnaissance and feasibility assessment based on present biological conditions.
- It has been assumed that prior to implementation of this project, protocol-level surveys (pre-construction) will be conducted to verify field and data-based observations documented in this Report, if recommendations established in this Report are not followed.
- The biological resource buffers and setbacks defined in this Report, and presented in Map 4, only represent buffers to biological resources and do not include cultural resources (e.g. historical landmarks and/or cemeteries). Additional buffers and setbacks may be required for cultural resources which may alter the size of the potential cultivation areas defined in this Report.

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

Section 6 Regulatory Framework

6.1 Regulatory Framework Guidelines

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

6.1.1 Federal Endangered Species Act

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

6.1.2 California Endangered Species Act

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

6.1.3 California Environmental Quality Act

Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Wildlife Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts, if it finds that the species meets the criteria of a threatened or endangered species.

6.1.4 Clean Water Act

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

6.1.5 California Water Quality Regulatory Programs

Pursuant to Section 401 of the federal Clean Water Act and the state's Porter-Cologne Act, projects that are regulated by the Corps must obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification ensures that the project will uphold state water quality standards. The RWQCB sometimes asserts jurisdiction over wetlands that the Corps does not (e.g. certain isolated wetlands) and may impose mitigation requirements even if the Corps does not. The CDFW also exerts jurisdiction over the bed and banks of watercourses and water bodies according to provisions of Section 1601to1603 of the Fish and Wildlife Code. The Fish and Wildlife Code requires a Stream Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body.

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Appendix A

Photo Documentation

Naiad Biological Consulting

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Whipsawson LLC

2555 Sunset Ridge Rd
Blocksburg, CA 95514

Assessor Parcel Number (APN):
APN: 217 – 391 – 012

June 2023

Photo 1. Upland grassland habitat where the lower Area Assessed for Project Feasibility occurs (Proposed Site #5). Photo taken north of the site facing south towards the woodland habitat.

Photo 2. Upland grassland habitat where the lower Area Assessed for Project Feasibility occurs (Proposed Site #5). Photo taken within the site facing northeast showing the rolling sloped landscape of the upland grassland habitat.

Photo 3. The oak woodland habitat located on the outskirts of the upland grassland habitat, along the slopped hillsides to the south west of the parcels and surrounds the riparian corridors of the Class II watercourses.

Photo 4. The upper Area Assessed for Project Feasibility (Proposed Site #6) surrounded by the mixed hardwood and coniferous forest.

Photo 5. The upper Area Assessed for Project Feasibility (Proposed Site #6) surrounded by the mixed hardwood and coniferous forest.

Photo 6. The well surrounded by the mixed hardwood and coniferous forest.

Photo 7. The water storage tanks surrounded by the mixed hardwood and coniferous forest.

Photo 6. The Class II watercourse north of the lower Area Assessed for Project Feasibility.

Appendix B

Tables

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Whipsawson LLC

2555 Sunset Ridge Rd
Blocksburg, CA 95514

Assessor Parcel Number (APN):
APN: 217 – 391 – 012

June 2023

Table 1 – Special-Status Animal Species – June 2023 – APN 217-391-012 – Blocksburg and surrounding 7.5 min quadrangles

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	Habitat	Potential of Occurrence within Study Area
Amphibians						
Ascaphus truei	Pacific tailed frog	None	None	SSC	*Ascaphus truei,* commonly known as the Coastal Tailed Frog, is primarily found in cold, clear, and fast-flowing streams and rivers with rocky substrates in the Pacific Northwest of North America. They require cool water temperatures and are often associated with dense vegetation along the water's edge.	None due to lack of suitable stream habitat within Study Area. Watercourses within Study Area do not match this species desired habitat criteria.
Rana aurora	northern red-legged frog	None	None	SSC	*Rana aurora*, also known as the Northern Red-legged Frog, inhabits a variety of aquatic habitats including ponds, lakes, marshes, and slow-moving streams. They prefer habitats with abundant aquatic vegetation and ample cover such as fallen logs and rocks. They are typically found in forested regions of the Pacific Northwest and California.	Moderate due to moderately suitable habitat in the rain catchment pond within Study Area.
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	None	None	SSC	*Rana boylii*, commonly called the Foothill Yellow-legged Frog, is a stream-dwelling amphibian found in California. They inhabit rocky streams and rivers in foothill and mountainous regions. They require clear, cool water with moderate to fast flow rates. They are often found in areas with a mix of vegetation and exposed boulders for basking and shelter.	Moderate due to moderately suitable habitat in the watercourse features within Study Area.
Rhyacotriton variegatus	southern torrent salamander	None	None	SSC	*Rhyacotriton variegatus*, known as the southern torrent salamander, is a small salamander species found in the Pacific Northwest of North America. They inhabit small, cold, and clear mountain streams with dense vegetation and rocky substrates. They are often associated with old-growth forests and are mainly nocturnal, seeking cover under rocks and logs during the day.	Low due to lack of suitable habitat in the watercourse features within Study Area. Watercourses within Study Area do not match this species

					growth forests and are mainly nocturnal, seeking cover under rocks and logs during the day.	match this species desired habitat criteria.
Birds						
Accipiter cooperii	Coopers hawk	None	None	WL	*Accipiter cooperii*, commonly known as the Cooper's Hawk, occupies a variety of forested habitats across North America. They can be found in dense woodlands, forest edges, and riparian areas. They require a mix of trees for nesting and perching, as well as open spaces for hunting. They are adaptable and can also be found in urban and suburban environments.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.
Accipiter gentilis	northern goshawk	None	None	SSC	The northern goshawk (*Accipiter gentilis*) is a large bird of prey found in diverse forest habitats across the Northern Hemisphere. It prefers mature forests with a mix of coniferous and deciduous trees, especially those with tall trees and a dense understory. They build nests high in the canopy and hunt medium-sized to large birds and mammals. Conservation focuses on preserving suitable forest habitats for nesting and hunting.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.
Aquila chrysaetos	golden eagle	None	None	FP | WL	The golden eagle (*Aquila chrysaetos*) inhabits a wide range of habitats across the Northern Hemisphere, including mountains, cliffs, and open landscapes. It is often found in rugged and remote areas with expansive views, such as alpine meadows, grasslands, and deserts. These eagles prefer areas with open spaces for hunting, as they primarily feed on small to medium-sized mammals and birds. They construct large nests on cliffs or in tall trees for breeding. Conservation efforts focus on protecting their nesting sites and preserving their vast hunting territories.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.
Chaetura vauxi	Vauxs swift	None	None	SSC	*Chaetura vauxi*, or Vaux's Swift, can be found in various forested habitats, particularly coniferous forests, where they nest in tree cavities or	Moderate due to suitable habitat in the Study Area.

					chimneys. They are highly aerial and often forage for insects over open areas.	
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP	*Falco peregrinus anatum*, commonly known as the Peregrine Falcon, can be found in a range of habitats, including coastal cliffs, mountainous regions, and tall buildings in urban areas. They nest on ledges or in tree cavities and prey on birds and small mammals.	Moderate due to suitable habitat in the Study Area. This species would only utilize the study area for foraging but and not likely roosting.
Icteria virens	yellow-breasted chat	None	None	SSC	The *Icteria virens*, commonly known as the yellow-breasted chat, inhabits a variety of habitats across North America, including thickets, shrubby areas, and woodland edges. It is commonly found in areas with dense vegetation such as overgrown fields, regenerating forests, and riparian zones. The yellow-breasted chat prefers habitats with a mix of shrubs, small trees, and tall grasses, providing ample cover for nesting and foraging. It is often associated with wetlands, brushy thickets, and shrub-dominated areas near water sources. This species is known for its secretive behavior and complex song, often heard before it is seen. Conservation efforts aim to protect and restore its preferred habitat, ensuring the availability of suitable nesting sites and food sources.	Moderate due to suitable habitat in the Study Area. This species would only utilize the study area for foraging but and not likely roosting.
Pandion haliaetus	osprey	None	None	WL	*Pandion haliaetus*, known as the Osprey, is found near water bodies, including coastal areas, lakes, and rivers. They build large stick nests on high structures, such as trees or man-made platforms. They feed almost exclusively on fish.	Low due to lack of suitable habitat within proximity of the Study Area.
Setophaga petechia	yellow warbler	None	None	SSC	*Setophaga petechia*, commonly known as the yellow warbler, is a small migratory songbird found in North and Central America. It inhabits a wide range of habitats, including forests, woodlands, wetlands, shrublands, and gardens. The yellow warbler is particularly associated with riparian areas, marshes, and wet meadows where it can find a mix of shrubs, small trees, and open spaces. It prefers habitats near water sources such as streams, rivers, lakes, and swamps. The species is	Low due to lack suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.

					known for its vibrant yellow plumage, which helps it blend into the dense foliage of its preferred habitat. Yellow warblers build their cup-shaped nests in shrubs and trees, often near water, and feed on insects and spiders. The availability of suitable nesting sites and a diverse insect population are important for the survival and reproduction of this species. Conservation efforts aim to protect and restore its preferred habitats, ensuring the preservation of nesting areas and food resources.	
Psiloscops flammeolus	flammulated owl	None	None	-	*Psiloscops flammeolus*, commonly known as the flammeous pygmy-owl, is a small owl species found in parts of North and Central America. It inhabits a variety of habitats, including open woodlands, forests, scrublands, and riparian areas. The flammeous pygmy-owl prefers habitats with a mix of trees, shrubs, and open spaces, where it can find suitable perches and hunting opportunities. It is often associated with areas that have a dense understory and abundant vegetation. This owl species is adaptable and can be found in both humid and arid environments. It primarily hunts at dawn and dusk, preying on small birds, mammals, and insects. The flammeous pygmy-owl nests in tree cavities, abandoned woodpecker holes, or nest boxes, and it is known for its territorial behavior during the breeding season. Conserving and protecting its habitat, including maintaining suitable nesting sites and ensuring a diverse prey base, are crucial for the survival and well-being of the flammeous pygmy-owl population.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.
Strix occidentalis caurina	Northern Spotted Owl	Threatened	Threatened	-	Strix occidentalis caurina, known as the Northern Spotted Owl, is found in mature coniferous forests with dense canopy cover. They require old-growth trees for nesting and forage on small mammals, birds, and insects found in their forest habitat.	None due to no suitable forest habitat within Study Area.
Empidonax traillii	willow flycatcher	None	Endangered	-	Empidonax traillii, known as the Willow Flycatcher, is found in riparian habitats, wetlands, and shrubby areas near water bodies. They nest in shrubs and	Low due to lack suitable habitat in the Study Area. Study Area's riparian habitat

					forage on insects, primarily targeting flying insects and those found near water.	is not as thick as this species prefers
Empidonax traillii brewsteri	little willow flycatcher	None	Endangered	-	*Empidonax traillii brewsteri*, commonly known as the Willow Flycatcher, is a small migratory bird species found in North America. It inhabits a range of riparian and wetland habitats, including marshes, swamps, and shrubby areas near water bodies such as streams, rivers, and lakeshores. The Willow Flycatcher prefers areas with dense vegetation, particularly willow thickets, alder groves, and other shrubby plants. These habitats provide suitable perching and nesting sites, as well as abundant insect prey. The bird's breeding range extends across western North America, while it migrates to Mexico, Central America, and South America during the winter. The Willow Flycatcher is known for its distinctive song, which it uses to establish and defend its territory. Conservation efforts focus on preserving and restoring riparian habitats, including maintaining a diverse mix of shrubs and trees, to ensure the availability of suitable nesting and foraging areas for the Willow Flycatcher and other associated wildlife species.	Low due to lack suitable habitat in the Study Area. Study Area's riparian habitat is not as thick as this species prefers
Fishes						
Acipenser medirostris pop. 2	green sturgeon - northern DPS	None	None	SSC	*Acipenser medirostris* pop. 2, commonly known as the Green Sturgeon, is found in coastal and estuarine waters. They require deepwater habitats and migrate up rivers for spawning. They primarily feed on bottom-dwelling organisms, such as crustaceans and small fish.	None due to no deepwater habitats within the Study Area.
Entosphenus tridentatus	Pacific lamprey	None	None	SSC	*Entosphenus tridentatus,* known as the Pacific Lamprey, inhabits rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They are parasitic, feeding on the body fluids of other fish species during their adult stage.	None due to no river habitats that meet this species habitat needs.

Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	-	*Oncorhynchus kisutch* pop. 2, commonly called the Coho Salmon, inhabits coastal marine waters and enters freshwater rivers and streams for spawning. They require well-oxygenated rivers with suitable gravelly substrates. They feed on zooplankton, insects, and small fish during their marine phase.	None due to no river habitats that meet this species habitat needs
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	Threatened	Endangered	-	*Oncorhynchus mykiss irideus* pop. 48, known as steelhead or the Coastal Rainbow Trout, is found in coastal rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They primarily feed on aquatic insects, crustaceans, and small fish found in their habitat.	None due to no river habitats that meet this species habitat needs
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	Threatened	None	-	*Oncorhynchus mykiss irideus* pop. 49, commonly called steelhead or the Coastal Rainbow Trout, inhabits coastal rivers, streams, and estuaries. They require clean, well-oxygenated waters with suitable substrates for spawning. They primarily feed on aquatic insects, crustaceans, and small fish found in their habitat.	None due to no river habitats that meet this species habitat needs
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	Threatened	None	-	*Oncorhynchus tshawytscha* pop. 17, known as the Chinook Salmon, is found in coastal marine waters and migrates to freshwater rivers and streams for spawning. They require well-oxygenated rivers with suitable gravelly substrates. They feed on zooplankton, insects, and small fish during their marine phase.	None due to no river habitats that meet this species habitat needs
Insects						
Bombus caliginosus	obscure bumble bee	None	None	-	*Bombus caliginosus* can be found in a variety of habitats, including grasslands, meadows, and forest edges. They require abundant flowers for nectar and pollen sources and often nest underground or in grass clumps.	Moderate due to suitable habitat.
Bombus occidentalis	western bumble bee	None	Candidate Endangered	-	*Bombus occidentalis*, commonly called the Western Bumblebee, is found in a variety of habitats, including meadows, grasslands, and open woodlands. They require abundant flowers for	Moderate due to suitable habitat

					nectar and pollen sources and often nest underground or in grass clumps.	
Atractelmis wawona	Wawona riffle beetle	None	None	-	*Atractelmis wawona* is a species of aquatic beetle that is typically found in riffle habitats within freshwater streams and rivers. These beetles prefer fast-flowing, shallow areas of the water where the current is strong and creates riffles or small rapids. They are often found clinging to rocks or submerged vegetation in these riffle zones.	None due to no river habitats that meet this species habitat needs
Mammals						
Arborimus pomo	Sonoma tree vole	None	None	SSC	*Arborimus pomo*, known as the Sonoma Tree Vole, is found in mature and old-growth forests with a dense canopy cover. They require areas with dense vegetation for cover and feed on grasses, herbs, seeds, and bark found in their habitat.	Low due to lack of mature forest habitat
Erethizon dorsatum	North American porcupine	None	None	-	*Erethizon dorsatum*, commonly known as the North American Porcupine, inhabits a variety of habitats, including forests, woodlands, and grasslands. They require trees for shelter and feed on bark, twigs, leaves, and vegetation found in their habitat.	Moderate due to suitable habitat
Pekania pennanti	Fisher	None	None	SSC	*Pekania pennanti*, commonly known as the Fisher, is found in forests, including coniferous and mixed forests. They require mature trees for denning and feed on a variety of small mammals, birds, and insects found in their habitat.	Low due to forest type within parcel not being mature.
Taxidea taxus	American badger	None	None	SSC	The American badger (*Taxidea taxus*) is commonly found in open grasslands, prairies, and meadows across North America. It prefers habitats with loose, well-drained soils such as sandy or loamy areas, which facilitate its digging and burrowing behavior. These adaptable mammals are known for their extensive burrow systems, which they use for shelter, nesting, and hunting. American badgers primarily feed on burrowing rodents such as ground squirrels, gophers, and prairie dogs. They are predominantly nocturnal and have a wide-ranging hunting behavior, covering large areas in search of prey.	Moderate due to suitable habitat

Corynorhinus townsendii	Townsends big-eared bat	None	None	SSC	*Corynorhinus townsendii*, known as Townsend's Big-eared Bat, inhabits a variety of habitats, including forests, woodlands, and caves. They require roosting sites in caves, buildings, or trees and feed on flying insects found in their habitat.	Moderate due to suitable habitat in the Study Area. More likely the species would utilize the study area for foraging but could be found roosting in portions of the Study Area.
Mollusks						
Noyo intersessa	Ten Mile shoulderband	None	None	-	*Noyo intersessa* is typically found in moist and shaded areas, such as forested regions and along riverbanks. It is often associated with dense vegetation and leaf litter, which provide shelter and food sources. The Ten Mile shoulderband prefers habitats with a high humidity level and a moderate temperature range. It is commonly observed in areas with rich organic soil and a diverse plant community. These snails play an important role in the ecosystem by contributing to nutrient cycling and serving as a food source for certain predators.	low due to no suitable habitat.
Anodonta californiensis	California floater	None	None	-	*Anodonta californiensis*, commonly called the California Floater, is found in freshwater habitats such as lakes, ponds, and slow-moving rivers. They require sandy or muddy substrates and are filter feeders, extracting microscopic organic particles from the water.	None due to no suitable habitat.
Reptiles						
Emys marmorata	Western pond turtle	None	None	SSC	*Emys marmorata* are commonly found in slow-moving or still waters such as ponds, lakes, marshes, and streams with abundant aquatic vegetation. They prefer areas with ample basking sites, such as logs or rocks, where they can thermoregulate and soak up sunlight. Western pond turtles require access to both aquatic and terrestrial environments, as they spend time both in the water and on land. They rely on a diverse diet that includes aquatic plants, insects, small fish, and	Low since the stream habitat on the parcel does not exhibit features suitable for this species.

					amphibians. Suitable nesting sites with sandy or gravelly soils near the water are essential for their reproduction. It's important for their habitats to have clean water and undisturbed shorelines to ensure the survival and conservation of this species.	

Definitions of CDFW statuses:

FP

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

SS

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

WL

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

Definitions of Federal Statuses (Federal Endangered Species Act):

Endangered species:

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

Threatened species:

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

Candidate Species:

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

Definitions of State Statuses (California Endangered Species Act):

Endangered species:

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

Threatened species:

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

Candidate Species:

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

Table 2 – Special-Status Plant Species – June 2023 – APN 217-391-012 – Blocksburg and surrounding 7.5 min quadrangles

Scientific Name	Common Name	CRPR	Blooming Period	Habitat	Microhabitat	Elevation (meters)	Potential of Occurrence within Study Area
Allium hoffmanii	Beegum onion	4.3	Jun-Jul	Lower montane coniferous forest (serpentinite)	NA	1100-1800	Low due to lack of serpentinite habitat
Anisocarpus scabridus	scabrid alpine tarplant	1B.3	Jul-Aug(Sep)	Upper montane coniferous forest (metamorphic, rocky)	NA	1650-2300	Low
Arctostaphylos hispidula	Howell's manzanita	4.2	Mar-Apr	Chaparral (sandstone, serpentinite)	NA	120-1250	Low due to lack of serpentinite habitat
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	1B.3	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest	Volcanic	395-1615	Low/moderate
Arnica spathulata	Klamath arnica	4.3	May-Aug	Lower montane coniferous forest (serpentinite)	NA	640-1800	Low due to lack of serpentinite habitat
Astragalus agnicidus	Humboldt County milk-vetch	1B.1	Apr-Sep	Broadleafed upland forest, North Coast coniferous forest	Disturbed areas, Openings, Roadsides (sometimes)	120-800	Moderate
Astragalus rattanii var. rattanii	Rattan's milk-vetch	4.3	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest	Gravelly, Streambanks	30-825	Moderate
Carex praticola	northern meadow sedge	2B.2	May-Jul	Meadows and seeps (mesic)	NA	0-3200	Moderate

Carex scabriuscula	Siskiyou sedge	4.3	May-Jul	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	Mesic, Seeps (sometimes), Serpentinite (sometimes)	710-2345	Low due to lack of serpentinite habitat
Claytonia serpenticola	serpentine spring beauty	4.3	Apr-Jun(Jul)	Subalpine coniferous forest, Upper montane coniferous forest	Openings (usually), Rocky, Serpentinite (usually)	1000-2450	Low due to lack of serpentinite habitat
Collomia tracyi	Tracy's collomia	4.3	Jun-Jul	Broadleafed upland forest, Lower montane coniferous forest	Rocky, Serpentinite (sometimes)	300-2100	Low due to lack of serpentinite habitat
Coptis laciniata	Oregon goldthread	4.2	(Feb)Mar-May(Sep-Nov)	Meadows and seeps, North Coast coniferous forest (streambanks)	Mesic	0-1000	Moderate
Cypripedium fasciculatum	clustered lady's-slipper	4.2	Mar-Aug	Lower montane coniferous forest, North Coast coniferous forest	Seeps (usually), Serpentinite (usually), Streambanks	100-2435	Low due to lack of serpentinite habitat
Cypripedium montanum	mountain lady's-slipper	4.2	Mar-Aug	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest	NA	185-2225	Moderate
Epilobium septentrionale	Humboldt County fuchsia	4.3	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest	Rocky (sometimes), Sandy (sometimes)	45-1800	Moderate
Erigeron biolettii	streamside daisy	3	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest	Mesic, Rocky	30-1100	Moderate
Erigeron maniopotamicus	Mad River fleabane daisy	1B.2	May-Aug	Lower montane coniferous forest, Meadows and seeps (openings, dry)	Disturbed areas, Openings, Roadsides, Rocky	1275-1500	Moderate

Erigeron robustior	robust daisy	4.3	Jun-Jul	Lower montane coniferous forest, Meadows and seeps	Serpentinite (sometimes)	200-610	Moderate to Low due to no serpentinite habitat
Erythronium oregonum	giant fawn lily	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	Openings, Rocky, Serpentinite (sometimes)	100-1150	Low due to no serpentinite habitat
Erythronium revolutum	coast fawn lily	2B.2	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Mesic, Streambanks	0-1600	Moderate/Low
Fritillaria glauca	Siskiyou fritillaria	4.2	(Apr-May)Jun-Jul	Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest	Serpentinite, Slopes, Talus	1735-2440	None due to elevation range
Fritillaria purdyi	Purdy's fritillary	4.3	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest	Serpentinite (usually)	175-2255	Low due to no serpentinite habitat
Gilia capitata ssp. pacifica	Pacific gilia	1B.2	Apr-Aug	Chaparral (openings), Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	NA	5-1665	Moderate
Hemizonia congesta ssp. tracyi	Tracy's tarplant	4.3	(Mar-Apr)May-Oct	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest	Openings, Serpentinite (sometimes)	120-1200	Low due to no serpentinite habitat
Hosackia yollabolliensis	Yolla Bolly Mtns. bird's-foot trefoil	1B.2	Jun-Aug	Meadows and seeps, Upper montane coniferous forest (openings)	Dry, Gravelly (often), Slopes; dry barren exposed slopes	1645-2135	None due to elevation range
Howellia aquatilis	water howellia	2B.2	Jun	Marshes and swamps (freshwater)	NA	1085-1290	None due to elevation range
Kopsiopsis hookeri	small groundcone	2B.3	Apr-Aug	North Coast coniferous forest	NA	90-885	Moderate
Lathyrus biflorus	two-flowered pea	1B.1	Jun-Aug	Lower montane coniferous forest (serpentinite)	NA	1370-1385	Low due to lack of serpentinite habitat

Lathyrus glandulosus	sticky pea	4.3	Apr-Jun	Cismontane woodland		300-800	Moderate
Leptosiphon aureus	bristly leptosiphon	4.2	Apr-Jul	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland	NA	55-1500	Moderate
Leptosiphon latisectus	broad-lobed leptosiphon	4.3	Apr-Jun	Broadleafed upland forest, Cismontane woodland	NA	170-1500	Moderate
Lilium rubescens	redwood lily	4.2	(Mar)Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Roadsides (sometimes), Serpentinite (sometimes)	30-1910	Moderate to Low due to lack of serpentinite habitat
Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	4.3	Jun-Aug	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest	Serpentinite (often)	70-2750	Low due to lack of serpentinite habitat
Listera cordata	heart-leaved twayblade	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	NA	5-1370	Low to moderate
Lupinus constancei	Lassics lupine	1B.1	Jul	Lower montane coniferous forest (serpentinite)	NA	1500-2000	Low due to lack of serpentinite habitat
Lycopodium clavatum	running-pine	4.1	Jun-Aug(Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	Edges (often), Openings, Roadsides	45-1225	Low to moderate
Lycopus uniflorus	northern bugleweed	4.3	Jul-Sep	Bogs and fens, Marshes and swamps		5-2000	Moderate
Meesia triquetra	three-ranked hump moss	4.2	Jul	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic)	soil	1300-2953	None due to elevation range

Mitellastra caulescens	leafy-stemmed mitrewort	4.2	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Mesic, Roadsides (sometimes)	5-1700	Moderate
Montia howellii	Howell's montia	2B.2	(Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	Roadsides (sometimes), Vernally Mesic	0-835	Moderate
Navarretia leucocephala ssp. bakeri	Baker's navarretia	1B.1	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic	5-1740	Moderate
Packera bolanderi var. bolanderi	seacoast ragwort	2B.2	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	Roadsides (sometimes)	30-650	Moderate
Piperia candida	white-flowered rein orchid	1B.2	(Mar-Apr)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Serpentinite (sometimes)	30-1310	Moderate to low due to lack of serpentinite habitat
Pityopus californicus	California pinefoot	4.2	(Mar-Apr)May-Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Mesic	15-2225	Moderate
Pleuropogon refractus	nodding semaphore grass	4.2	(Feb-Mar)Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	Mesic	0-1600	Moderate
Ptilidium californicum	Pacific fuzzwort	4.3	May-Aug	Lower montane coniferous forest, Upper montane coniferous forest	Usually epiphytic on trees, fallen and decaying logs, and stumps; rarely on humus over boulders	1140-1800	None due to elevation range
Sabulina decumbens	Lassics sandwort	1B.2	Jul	Lower montane coniferous forest, Upper montane coniferous forest	Serpentinite	1500-1675	Low due to lack of

							serpentinite habitat
Sanicula tracyi	Tracy's sanicle	4.2	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	Openings	100-1585	Moderate
Scytinium siskiyouense	Siskiyou jellyskin lichen	1B.1		Lower montane coniferous forest, North Coast coniferous forest	Epiphytic, usually on the bark of Fagaceae, such as Quercus or Chrysolepis spp.	635-1460	Moderate
Sedum flavidum	pale yellow stonecrop	4.3	May-Jul	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, Upper montane coniferous forest	Openings, Rocky, Serpentinite, Talus, Volcanic	355-2155	Low due to lack of serpentinite habitat
Sedum laxum ssp. heckneri	Heckner's stonecrop	4.3	Jun-Jul	Lower montane coniferous forest, Upper montane coniferous forest	Gabbroic (sometimes), Serpentinite (sometimes)	100-2100	Moderate to low due to lack of serpentinite habitat
Sidalcea malachroides	maple-leaved checkerbloom	4.2	(Mar)Apr-Aug	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	Disturbed areas (often)	0-730	Moderate
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	1B.2	(Mar)May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	Roadsides (often); often roadcuts	15-1230	Moderate

Silene bolanderi	Bolander's catchfly	1B.2	May-Jun	Chaparral (edges), Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Grassy openings (usually), Roadsides (sometimes), Rocky (sometimes), Serpentinite (sometimes); sometimes dry rocky slopes, canyons or roadsides	420-1150	Moderate to Low due to lack of serpentinite habitat
Tracyina rostrata	beaked tracyina	1B.2	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	NA	90-1270	Moderate
Usnea longissima	Methuselah's beard lichen	4.2		Broadleafed upland forest, North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers	50-1460	Moderate
Veratrum insolitum	Siskiyou false-hellebore	4.3	Jun-Aug	Chaparral, Lower montane coniferous forest	Clay	45-1635	Moderate
Wyethia longicaulis	Humboldt County wyethia	4.3	May-Jul	Broadleafed upland forest, Coastal prairie, Lower montane coniferous forest	Roadsides (sometimes)	750-1525	None due to elevation range

California Rare Plant Ranks (CRPR):

1A: Plants with a California Rare Plant Rank of 1A are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years.

1B: Plants with a California Rare Plant Rank of 1B are rare throughout their range with the majority of them endemic to California.

2A: Plants with a California Rare Plant Rank of 2A are presumed extirpated because they have not been observed or documented in California for many years.

2B: Except for being common beyond the boundaries of California, plants with a California Rare Plant Rank of 2B would have been ranked 1B.

3: Plants with a California Rare Plant Rank of 3 are united by one common theme – we lack the necessary information to assign them to one of the other ranks or to reject them.

4: Plants with a California Rare Plant Rank of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

Threat Ranks

Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are determined as follows:

- **0.1**-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- **0.2**-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- **0.3**-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Appendix C

Maps

Naiad Biological Consulting

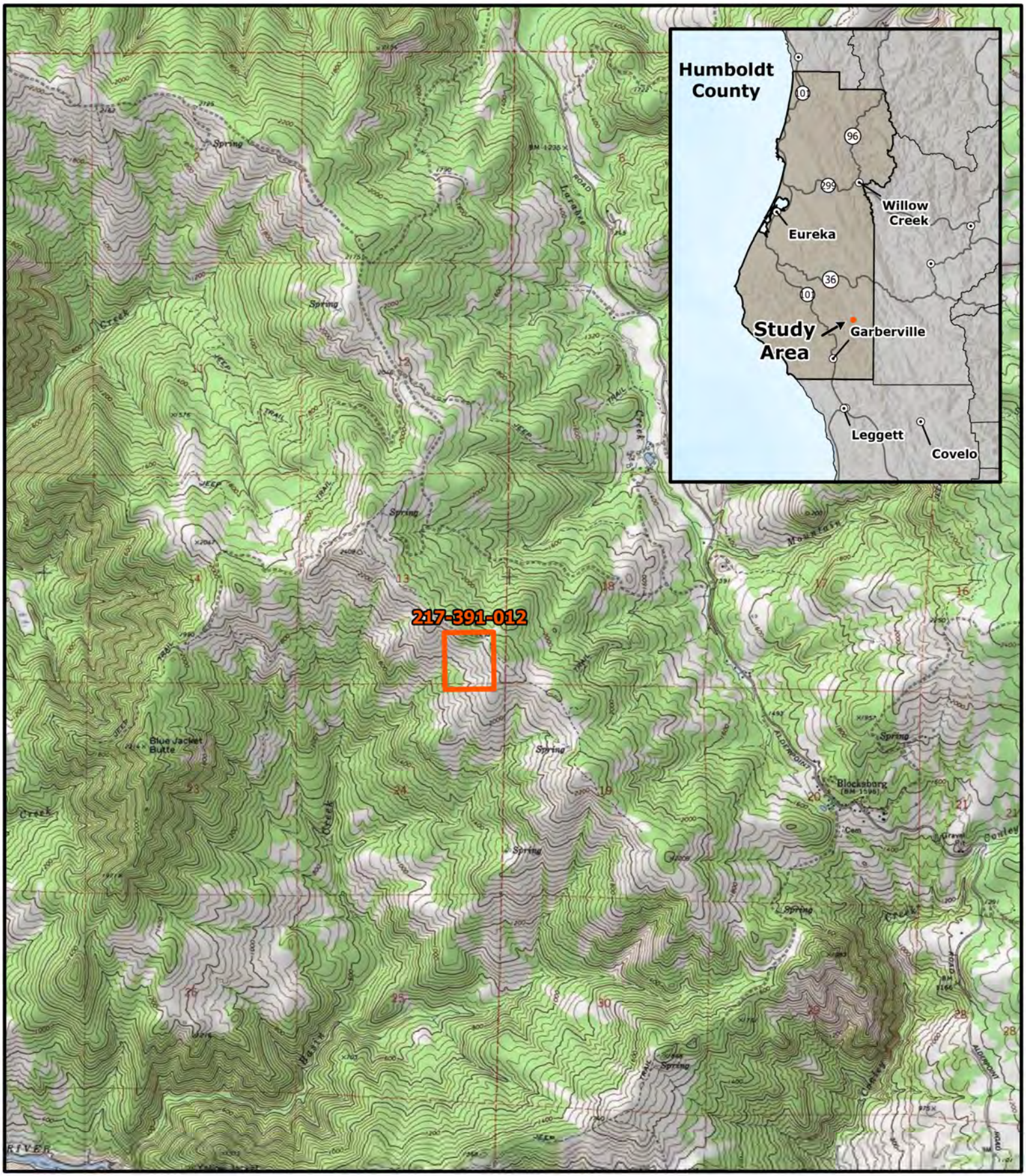
BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Whipsawson LLC

2555 Sunset Ridge Rd
Blocksburg, CA 95514

Assessor Parcel Number (APN):
APN: 217 – 391 – 012

June 2023



Whipsawason LLC
2555 Sunset Ridge Rd
Blocksburg, CA
95514
APN: 217-391-012

Map 1: Site Location Map

Scale: 1:37,500 — Study Area

0 1,500 3,000 6,000 Feet

Source: Blocksburg 7.5-Minute USGS Quadrangle

Naiad Biological Consulting

Map 2: Area Assessed for Project Feasibility

Scale: 1:2,041

0 100 200 400 Feet

Source: Blocksburg 7.5-Minute USGS Quadrangle

- Study Area
- Area Assessed for Project Feasibility
- Existing Cultivation
- Existing Pond
- Existing Water Tank Storage
- Existing Well

Naiad Biological Consulting

Map 3: Biological Survey Path

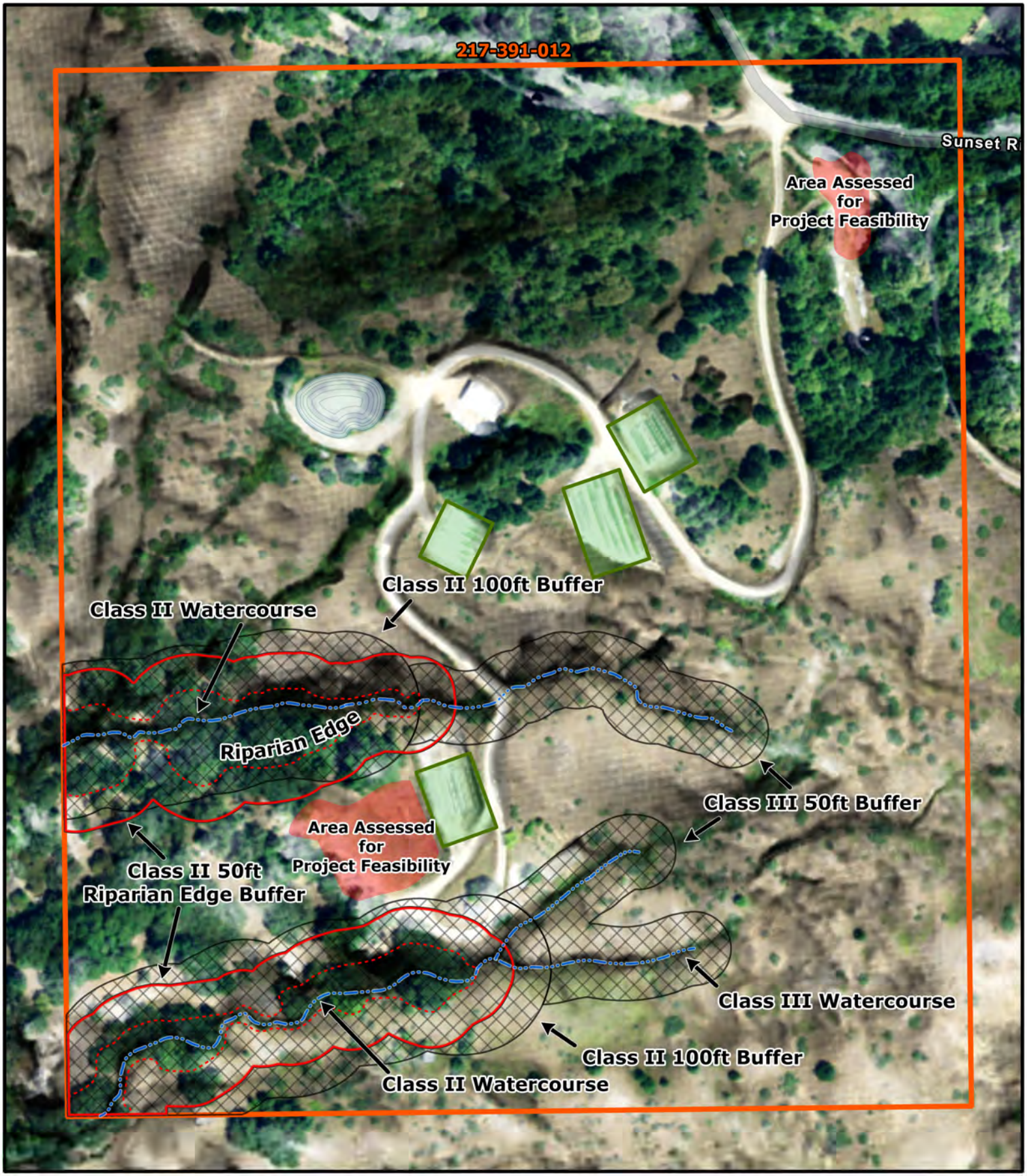
Scale: 1:2,041

0 100 200 400 Feet

Source: Blocksburg 7.5-Minute USGS Quadrangle

- Study Area
- Biological Survey Path (4/7/23)
- Area Assessed for Project Feasibility
- Existing Cultivation
- Existing Pond
- Existing Water Tank Storage
- Existing Well

Naiad Biological Consulting



Map 4: Biological Setbacks

Scale: 1:2,041

0 100 200 400 Feet

Source: Blocksburg 7.5-Minute USGS Quadrangle

- Study Area
- Area Assessed for Project Feasibility
- Existing Cultivation
- Class II Watercourse
- Class III Watercourse
- Class II Watercourse Riparian Edge
- State Watercourse Buffer
- County Watercourse Buffer

Naiad Biological Consulting

Map 5: Web Soil Survey and NWI

Scale: 1:2,041

0 100 200 400 Feet

Source: Blocksburg 7.5-Minute USGS Quadrangle

Area Assessed for Project Feasibility

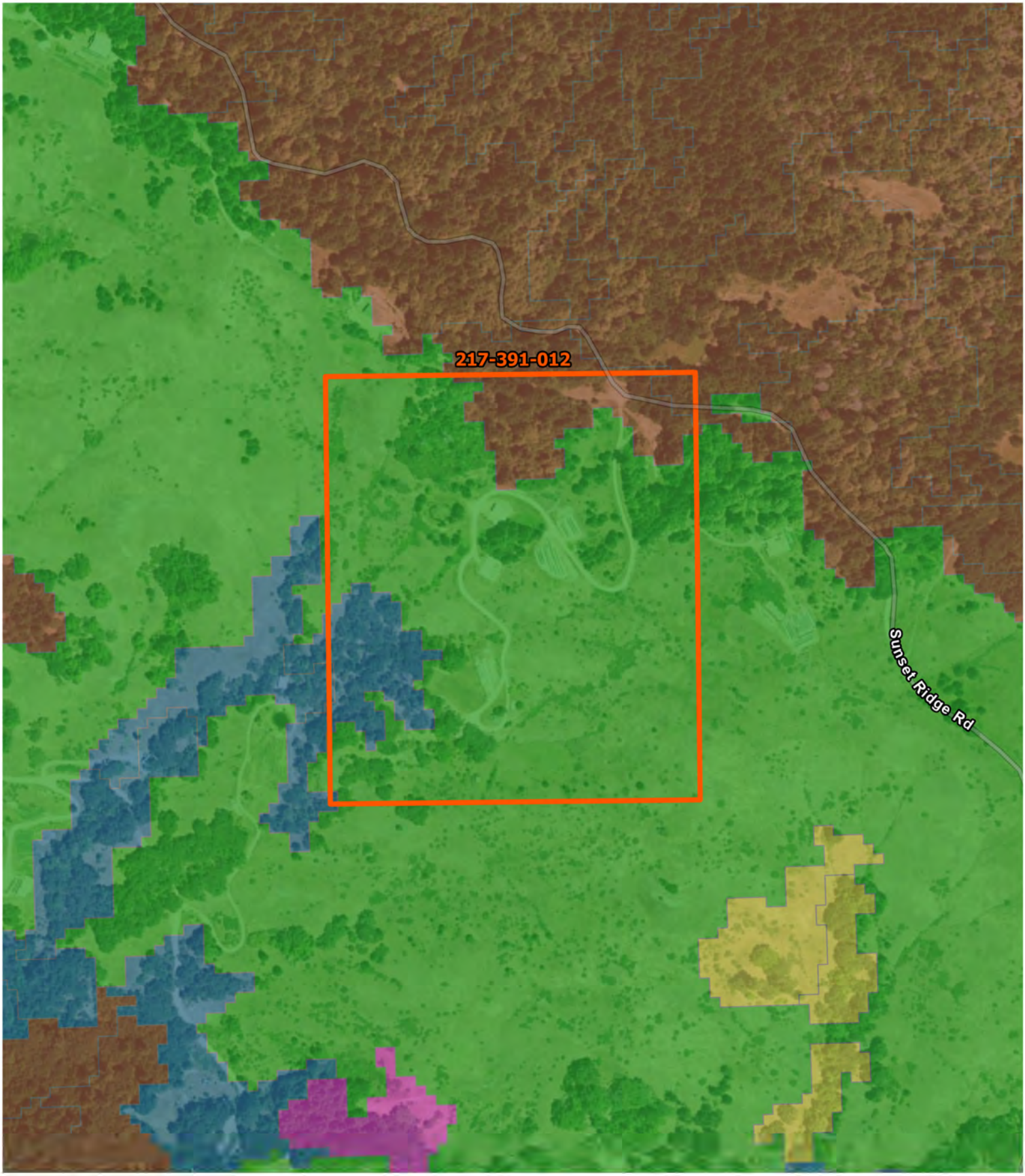
NRCS Web Soil Survey

Soil Map Units Within Study Area

USFS National Wetlands Inventory (NWI)

Riverine

Naiad Biological Consulting



Map 6: CalVeg Dominant Alliances

Scale: 1:5,000

0 250 500 1,000 Feet

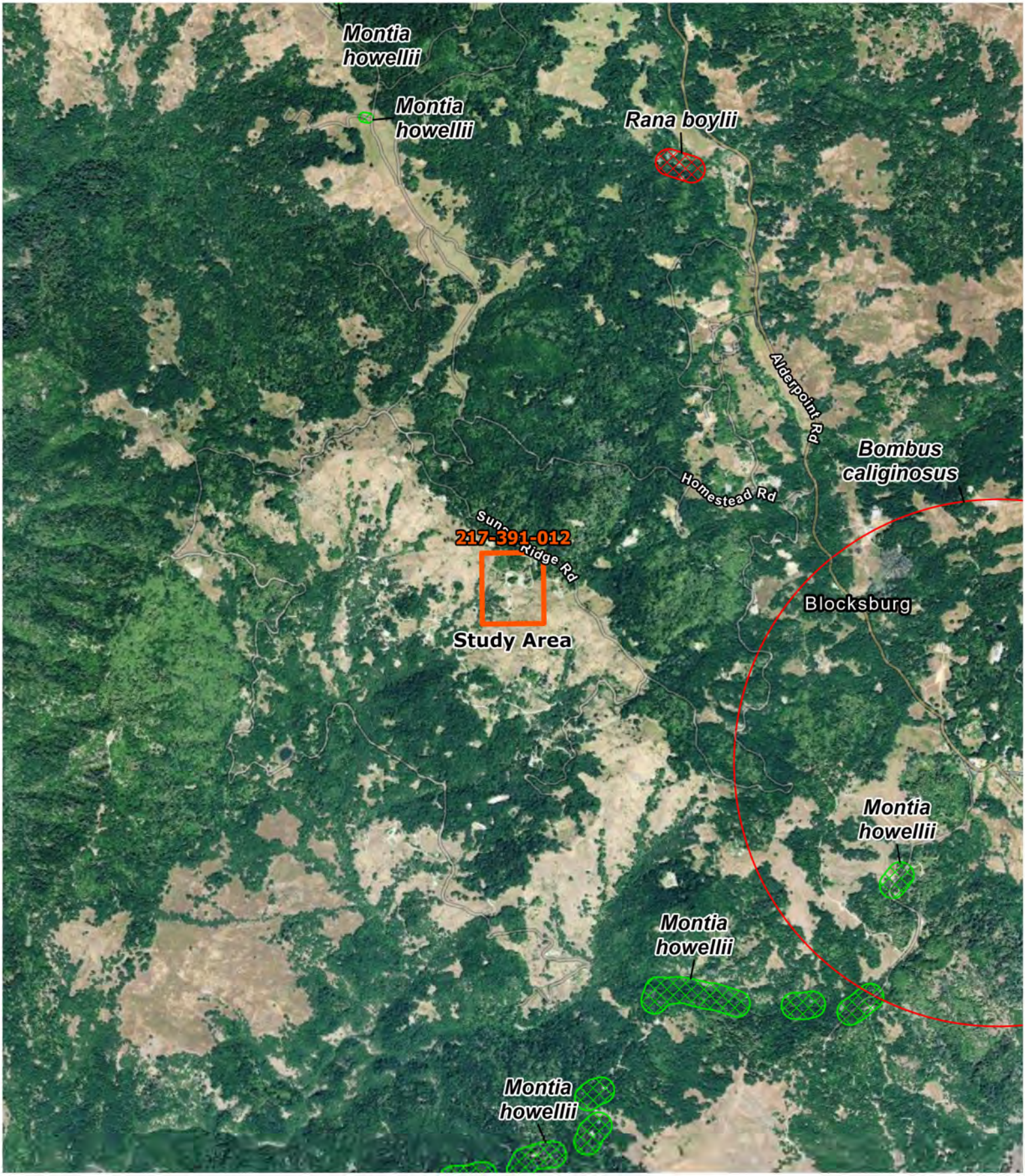
Source: Blocksburg 7.5-Minute USGS Quadrangle

Study Area

Regional Dominant Alliances

- Scrub Oak
- Pacific Douglas-Fir
- Annual Grasses and Forbs
- Interior Mixed Hardwood
- Oregon White Oak

Naiad Biological Consulting



Map 7: CNDDB Special Status Species

Scale: 1:30,000

0 1,500 3,000 6,000 Feet

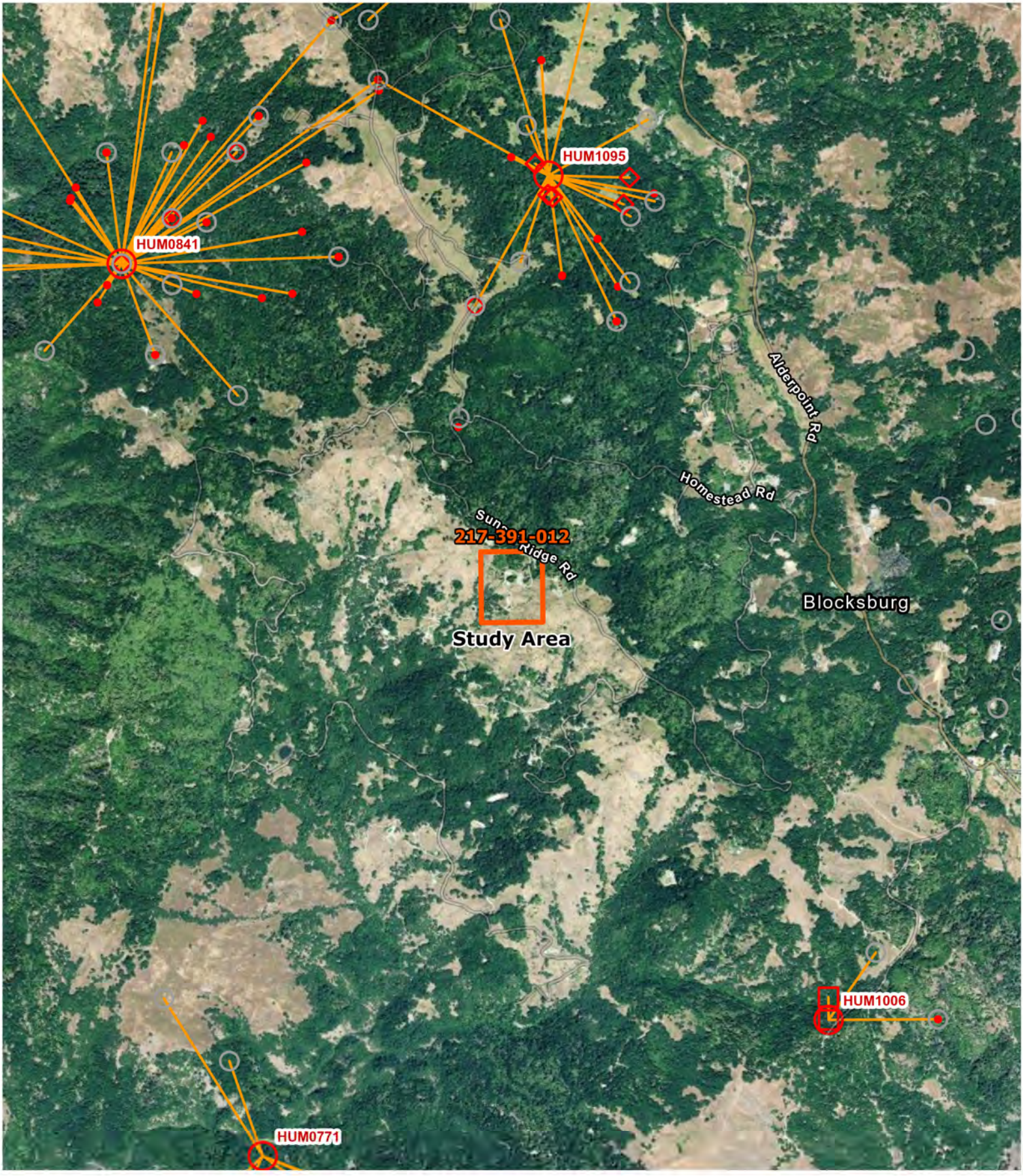
Source: Blocksburg 7.5-Minute USGS Quadrangle

Study Area

CNDDB Symbology

- Plant (specific)
- Animal (specific)
- Animal (circular)

Naiad Biological Consulting



Map 8: Spotted Owl Observations

Scale: 1:30,000

0 1,500 3,000 6,000 Feet

Source: Blocksburg 7.5-Minute USGS Quadrangle

Study Area
Spotted Owl Spider Diagram

Spotted Owl Observations
- Nest
- Pair
- Other Positive Observation
- Negative Observation
- Activity Center

Naiad Biological Consulting

Appendix D

Special-Status Species Occurrence Reports

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Whipsawson LLC

2555 Sunset Ridge Rd
Blocksburg, CA 95514

Assessor Parcel Number (APN):
APN: 217 – 391 – 012

June 2023

Data Version Date:
06/01/2023

Report Generation Date:
6/29/2023

Report #2 - Observations Reported

List of observations reported by site.

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

H_02S_04E Sections(01,12);

H_02S_05E Sections(06,07,08);

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
Masterowl: HUM0514 Subspecies: NORTHERN											
NEG	2003-04-30	0017	0					40.337506	-123.671357	H 01S 04E 36	Quarter-section centroid
NEG	2003-05-12	2220	0					40.337506	-123.671357	H 01S 04E 36	Quarter-section centroid
POS	2003-06-10	2355	1	UM				40.338390	-123.677276	H 01S 04E 36	Contributor
POS	2003-06-11	0900	1	UU				40.330808	-123.671973	H 01S 04E 36	Quarter-section centroid
NEG	2003-06-12	1000	0					40.333669	-123.675780	H 01S 04E 36	Section centroid
NEG	2004-04-05	2314	0					40.333499	-123.695286	H 01S 04E 35	Section centroid
NEG	2004-05-03	2207	0					40.333499	-123.695286	H 01S 04E 35	Section centroid
NEG	2004-05-23	2031	0					40.333499	-123.695286	H 01S 04E 35	Section centroid
NEG	2005-04-11	2227	0					40.333499	-123.695286	H 01S 04E 35	Section centroid
NEG	2005-04-19	2357	0					40.333499	-123.695286	H 01S 04E 35	Section centroid
NEG	2005-06-28	2352	0					40.333499	-123.695286	H 01S 04E 35	Section centroid
NEG	2013	2400	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2013-05-07	2144-2154	0					40.324540	-123.689290	H 02S 04E 02	Contributor
AC	2013-05-07	2018	2	UMUF				40.320133	-123.676798	H 02S 04E 01	Contributor
NEG	2013-05-07	0132-0142	0					40.336370	-123.691545	H 01S 04E 35	Contributor
NEG	2013-05-22	0206-0216	0					40.336370	-123.691545	H 01S 04E 35	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2013-06-14	0011-0021	0					40.336370	-123.691545	H 01S 04E 35	Contributor
NEG	2013-06-14	2025-2035	0					40.323187	-123.670489	H 02S 04E 01	Contributor
NEG	2013-06-14	2057-2107	0					40.320524	-123.675964	H 02S 04E 01	Contributor
NEG	2013-06-20	2032-2042	0					40.324540	-123.689290	H 02S 04E 02	Contributor
NEG	2013-06-20	2107-2117	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2013-06-20	2053-2103	0					40.322113	-123.682853	H 02S 04E 01	Contributor
NEG	2013-07-10	2355-0005	0					40.323187	-123.670489	H 02S 04E 01	Contributor
NEG	2013-07-10	0020-0030	0					40.336370	-123.691545	H 01S 04E 35	Contributor
NEG	2013-07-10	1800-2040	0					40.320263	-123.677123	H 02S 04E 01	Section centroid
POS	2013-07-10	2303	1	UU				40.321666	-123.678145	H 02S 04E 01	Contributor
NEG	2013-07-12	2154-2204	0					40.322113	-123.682853	H 02S 04E 01	Contributor
NEG	2013-07-12	2132-2142	0					40.324540	-123.689290	H 02S 04E 02	Contributor
NEG	2013-07-12	2207-2214	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2013-08-06	0025-0035	0					40.323187	-123.670489	H 02S 04E 01	Contributor
POS	2013-08-06	2316	1	UU				40.329956	-123.685006	H 01S 04E 36	Contributor
NEG	2013-08-06	0011-0021	0					40.320524	-123.675964	H 02S 04E 01	Contributor
POS	2013-08-06	2309	1	UU				40.324932	-123.685592	H 02S 04E 01	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2013-08-08	1630	0					40.323823	-123.681832	H 02S 04E 01	Quarter-section centroid
NEG	2013-08-08	0028-0038	0					40.336370	-123.691545	H 01S 04E 35	Contributor
NEG	2013-08-20	2238-2248	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2013-08-20	2344-2354	0					40.320524	-123.675964	H 02S 04E 01	Contributor
NEG	2013-08-20	2222-2232	0					40.322113	-123.682853	H 02S 04E 01	Contributor
POS	2013-08-20	0020	1	UU				40.318707	-123.665726	H 02S 05E 06	Contributor
NEG	2013-08-20	2114-2124	0					40.323187	-123.670489	H 02S 04E 01	Contributor
NEG	2013-08-23	2038-2048	0					40.324540	-123.689290	H 02S 04E 02	Contributor
POS	2013-08-23	0030	1	UU				40.330837	-123.687594	H 01S 04E 35	Contributor
NEG	2014	2400	0					40.336310	-123.681103	H 01S 04E 36	Contributor
NEG	2014	2400	0					40.336370	-123.691545	H 01S 04E 35	Contributor
NEG	2014	2400	0					40.322113	-123.682853	H 02S 04E 01	Contributor
NEG	2014	2400	0					40.324540	-123.689290	H 02S 04E 02	Contributor
NEG	2014	2400	0					40.320524	-123.675964	H 02S 04E 01	Contributor
NEG	2014-03-21	2128-2138	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-03-21	2249-2259	0					40.323187	-123.670489	H 02S 04E 01	Contributor
POS	2014-03-23	0029	2	UMUF	Y			40.318707	-123.665726	H 02S 05E 06	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2014-03-23	2242-2252	0					40.327750	-123.679924	H 01S 04E 36	Contributor
POS	2014-04-19	0058	1	UU				40.321557	-123.675440	H 02S 04E 01	Contributor
NEG	2014-04-19	2233-2243	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2014-05-16	2149-2159	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2014-05-16	2257-2307	0					40.323187	-123.670489	H 02S 04E 01	Contributor
POS	2014-05-16	2227	1	UM				40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-05-17	0630	0					40.316611	-123.681861	H 02S 04E 01	Quarter-section centroid
POS	2014-06-08	2352	1	UM	Y			40.326367	-123.671622	H 02S 04E 01	Contributor
POS	2014-06-08	2353	1	UF	Y			40.325232	-123.670707	H 02S 04E 01	Contributor
NEG	2014-06-09	0845-1030	0					40.323905	-123.672371	H 02S 04E 01	Quarter-section centroid
NEG	2014-06-13	2202-2212	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2014-06-13	2030-2040	0					40.323187	-123.670489	H 02S 04E 01	Contributor
NEG	2014-06-13	2120-2130	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-07-08	2306-2316	0					40.323187	-123.670489	H 02S 04E 01	Contributor
NEG	2014-07-11	2124-2134	0					40.316573	-123.684495	H 02S 04E 01	Contributor
POS	2014-07-11	2200	1	UU				40.327214	-123.684753	H 02S 04E 01	Contributor
NEG	2014-07-12	0750-1005	0					40.323823	-123.681832	H 02S 04E 01	Quarter-section centroid

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2014-08-01	2143-2153	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-08-01	2254-2304	0					40.327750	-123.679924	H 01S 04E 36	Contributor
NEG	2014-08-01	2044-2054	0					40.323187	-123.670489	H 02S 04E 01	Contributor
Masterowl: HUM0841 Subspecies: NORTHERN											
NEG	1996-04-30	2001	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	1996-06-03	2000	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	1997-03-20	1750	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
POS	1997-04-12		1	UU				40.302293	-123.718617	H 02S 04E 10	Quarter-section centroid
POS	1997-04-14		1	UU				40.302293	-123.718617	H 02S 04E 10	Quarter-section centroid
POS	1997-04-14	2015	1	UM				40.309242	-123.700520	H 02S 04E 11	Quarter-section centroid
POS	1997-04-15		1	UM				40.304951	-123.721205	H 02S 04E 10	Contributor
POS	1997-04-29	0921	1	SM				40.307317	-123.702696	H 02S 04E 11	Contributor
POS	1997-05-07		1	UM				40.304917	-123.719147	H 02S 04E 10	Contributor
POS	1997-06-10	0056	1	UM				40.306735	-123.703040	H 02S 04E 11	Contributor
POS	1997-06-11	0710	1	SM				40.306590	-123.703095	H 02S 04E 11	Contributor
POS	1998-04-15		1	UM				40.309242	-123.700520	H 02S 04E 11	Quarter-section centroid
POS	1999-05-26	0136	1	UM				40.309242	-123.700520	H 02S 04E 11	Quarter-section centroid

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	1999-05-26	0011	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	1999-06-01	2107	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	1999-06-07	0016	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	2000-03-22	0715	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	2000-04-06	2212	0					40.309359	-123.718139	H 02S 04E 10	Quarter-section centroid
NEG	2000-04-18	2000	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	2000-04-23	2010	0					40.309359	-123.718139	H 02S 04E 10	Quarter-section centroid
NEG	2000-05-10	1235	0					40.305676	-123.695812	H 02S 04E 11	Section centroid
NEG	2000-05-15	2028	0					40.309359	-123.718139	H 02S 04E 10	Quarter-section centroid
NEG	2000-06-05	2022	0					40.309359	-123.718139	H 02S 04E 10	Quarter-section centroid
NEG	2000-06-26	2048	0					40.319875	-123.713377	H 02S 04E 03	Section centroid
NEG	2000-06-26	2112	0					40.309359	-123.718139	H 02S 04E 10	Quarter-section centroid
NEG	2000-07-20	2251	0					40.309359	-123.718139	H 02S 04E 10	Quarter-section centroid
NEG	2001-03-23	2153	0					40.302586	-123.727833	H 02S 04E 09	Quarter-section centroid
NEG	2001-04-09	2238	0					40.302586	-123.727833	H 02S 04E 09	Quarter-section centroid
NEG	2001-04-24	2122	0					40.302586	-123.727833	H 02S 04E 09	Quarter-section centroid
NEG	2001-05-11	2044	0					40.302586	-123.727833	H 02S 04E 09	Quarter-section centroid

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2001-05-18	2125	0					40.302586	-123.727833	H 02S 04E 09	Quarter-section centroid
NEG	2002-03-30	1730	0					40.320107	-123.695972	H 02S 04E 02	Section centroid
NEG	2002-04-08	2041	0					40.320107	-123.695972	H 02S 04E 02	Section centroid
POS	2002-05-05	1040	1	UU				40.302017	-123.700399	H 02S 04E 11	Quarter-section centroid
NEG	2002-05-06		0					40.309242	-123.700520	H 02S 04E 11	Quarter-section centroid
POS	2002-06-08	1150	1	UU				40.302293	-123.718617	H 02S 04E 10	Quarter-section centroid
NEG	2002-06-09		0					40.305646	-123.713922	H 02S 04E 10	Section centroid
POS	2002-07-03	2330	1	UU				40.302017	-123.700399	H 02S 04E 11	Quarter-section centroid
POS	2002-07-04		2	UMUF	Y			40.305676	-123.695812	H 02S 04E 11	Section centroid
POS	2003-03-13	0820	1	UU				40.305676	-123.695812	H 02S 04E 11	Section centroid
POS	2003-03-14		2	UMUF	Y			40.309325	-123.691201	H 02S 04E 11	Quarter-section centroid
POS	2003-03-26	1000	1	UU				40.305676	-123.695812	H 02S 04E 11	Section centroid
POS	2003-03-27		2	UUUU				40.305676	-123.695812	H 02S 04E 11	Section centroid
POS	2003-05-01		2	UMUF	Y			40.305676	-123.695812	H 02S 04E 11	Section centroid
NEG	2013	2400	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2013	2400	0					40.296023	-123.691002	H 02S 04E 14	Contributor
NEG	2013	2400	0					40.298392	-123.704833	H 02S 04E 11	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2013	2400	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2013-05-07	2128-2138	0					40.323591	-123.696277	H 02S 04E 02	Contributor
NEG	2013-05-07	2313-2326	0					40.298213	-123.696919	H 02S 04E 14	Contributor
POS	2013-05-07	2241-2246	1	UU				40.303641	-123.683861	H 02S 04E 12	Contributor
POS	2013-05-07	2216-2225	1	UU				40.311025	-123.693659	H 02S 04E 11	Contributor
NEG	2013-05-09	1220-1450	0					40.309281	-123.695864	H 02S 04E 11	Half-section centroid
NEG	2013-05-22	2214-2224	0					40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2013-05-22	2333-2343	0					40.298213	-123.696919	H 02S 04E 14	Contributor
NEG	2013-06-14	2222-2232	0					40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2013-06-20	2231-2241	0					40.303641	-123.683861	H 02S 04E 12	Contributor
NEG	2013-06-20	2214-2224	0					40.303168	-123.699368	H 02S 04E 11	Contributor
NEG	2013-06-20	2314-2324	0					40.298213	-123.696919	H 02S 04E 14	Contributor
NEG	2013-06-20	2340-2350	0					40.298392	-123.704833	H 02S 04E 11	Contributor
NEG	2013-06-20	2200-2210	0					40.305473	-123.693324	H 02S 04E 11	Contributor
POS	2013-06-20	2141-2151	1	UU				40.323591	-123.696277	H 02S 04E 02	Contributor
NEG	2013-07-10	2226-2236	0					40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2013-07-12	2226-2236	0					40.323591	-123.696277	H 02S 04E 02	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2013-07-12	2321-2331	0					40.303641	-123.683861	H 02S 04E 12	Contributor
NEG	2013-07-12	2302-2312	0					40.303168	-123.699368	H 02S 04E 11	Contributor
NEG	2013-07-12	2248-2258	0					40.305473	-123.693324	H 02S 04E 11	Contributor
NEG	2013-07-12	2355-0005	0					40.298213	-123.696919	H 02S 04E 14	Contributor
POS	2013-08-06	2351	1	UU				40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2013-08-06	2246-2256	0					40.323591	-123.696277	H 02S 04E 02	Contributor
AC	2013-08-08	2131	1	UF	Y			40.303168	-123.699368	H 02S 04E 11	Contributor
POS	2013-08-08	2131	1	UM	Y			40.303168	-123.699368	H 02S 04E 11	Contributor
POS	2013-08-08	2155	1	UU				40.305473	-123.693324	H 02S 04E 11	Contributor
POS	2013-08-08	2015-2100	1	UU				40.308785	-123.686220	H 02S 04E 12	Contributor
POS	2013-08-08	2222	1	UU				40.303641	-123.683861	H 02S 04E 12	Contributor
POS	2013-08-08	2255	1					40.298213	-123.696919	H 02S 04E 14	Contributor
POS	2013-08-20	2140	1	UU				40.313349	-123.681144	H 02S 04E 01	Contributor
POS	2013-08-20	2315-2325	1	UU				40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2013-08-20	2206-2216	0					40.323591	-123.696277	H 02S 04E 02	Contributor
NEG	2013-08-23	2104-2114	0					40.298213	-123.696919	H 02S 04E 14	Contributor
POS	2013-08-23	2208	1	UU				40.304986	-123.686488	H 02S 04E 12	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2014	2400	0					40.323591	-123.696277	H 02S 04E 02	Contributor
NEG	2014	2400	0					40.298392	-123.704833	H 02S 04E 11	Contributor
NEG	2014	2400	0					40.296023	-123.691002	H 02S 04E 14	Contributor
NEG	2014-03-21	2141-2151	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-03-21	2128-2138	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-03-23	2216-2226	0					40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2014-03-23	2122-2132	0					40.298213	-123.696919	H 02S 04E 14	Contributor
NEG	2014-03-23	2005-2015	0					40.303641	-123.683861	H 02S 04E 12	Contributor
NEG	2014-03-23	2045-2055	0					40.305473	-123.693324	H 02S 04E 11	Contributor
NEG	2014-03-23	2026-2036	0					40.303168	-123.699368	H 02S 04E 11	Contributor
NEG	2014-04-19	0021-0031	0					40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2014-04-19	2206-2216	0					40.303641	-123.683861	H 02S 04E 12	Contributor
NEG	2014-04-19	2305-2315	0					40.303168	-123.699368	H 02S 04E 11	Contributor
NEG	2014-04-19	2232-2242	0					40.305473	-123.693324	H 02S 04E 11	Contributor
POS	2014-04-19	2138	1	UM				40.301569	-123.694008	H 02S 04E 11	Contributor
POS	2014-04-19	2122	1	UM				40.312755	-123.681076	H 02S 04E 12	Contributor
POS	2014-05-16	0128	1	UU				40.310144	-123.693068	H 02S 04E 11	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2014-05-16	2307-2317	0					40.298213	-123.696919	H 02S 04E 14	Contributor
NEG	2014-05-17	0630	0					40.309325	-123.691201	H 02S 04E 11	Quarter-section centroid
NEG	2014-06-08	2219-2229	0					40.298213	-123.696919	H 02S 04E 14	Contributor
NEG	2014-06-08	2137-2147	0					40.303168	-123.699368	H 02S 04E 11	Contributor
NEG	2014-06-08	2055-2105	0					40.303641	-123.683861	H 02S 04E 12	Contributor
NEG	2014-06-08	2116-2126	0					40.305473	-123.693324	H 02S 04E 11	Contributor
NEG	2014-06-13	2049-2059	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-06-13	2120-2130	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-06-13	2243-2253	0					40.311308	-123.689656	H 02S 04E 11	Contributor
POS	2014-07-08	2200	1	UU				40.301615	-123.687138	H 02S 04E 11	Contributor
POS	2014-07-08	2200	1	UM				40.301371	-123.689322	H 02S 04E 11	Contributor
POS	2014-07-08	2129	1	UM				40.301053	-123.701077	H 02S 04E 11	Contributor
NEG	2014-07-09	0715-1030	0					40.302059	-123.695752	H 02S 04E 11	Half-section centroid
NEG	2014-07-11	2111-2121	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-07-11	2124-2134	0					40.316573	-123.684495	H 02S 04E 01	Contributor
NEG	2014-07-11	2047-2057	0					40.311308	-123.689656	H 02S 04E 11	Contributor
NEG	2014-08-01	2143-2153	0					40.316573	-123.684495	H 02S 04E 01	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2014-08-01	2130-2140	0					40.313349	-123.681144	H 02S 04E 01	Contributor
POS	2014-08-01	2323-2331	1	UU				40.309683	-123.694979	H 02S 04E 11	Contributor
NEG	2014-08-02	2239-2249	0					40.303168	-123.699368	H 02S 04E 11	Contributor
NEG	2014-08-02	2055-2105	0					40.298213	-123.696919	H 02S 04E 14	Contributor
NEG	2014-08-02	2316-2326	0					40.303641	-123.683861	H 02S 04E 12	Contributor
NEG	2014-08-02	2258-2308	0					40.305473	-123.693324	H 02S 04E 11	Contributor
NEG	2014-08-02	1530-1915	0					40.309242	-123.700520	H 02S 04E 11	Quarter-section centroid
Masterowl: HUM1095 Subspecies: NORTHERN											
NEG	2013	2400	0					40.311266	-123.661849	H 02S 05E 07	Contributor
NEG	2013	2400	0					40.303432	-123.670847	H 02S 04E 12	Contributor
NEG	2013	2400	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2013-05-07	0045-0055	0					40.306804	-123.661270	H 02S 05E 07	Contributor
NEG	2013-05-07	0034-0044	0					40.310908	-123.670489	H 02S 04E 12	Contributor
NEG	2013-05-07	0005-0015	0					40.300241	-123.663936	H 02S 05E 07	Contributor
NEG	2013-05-07	2349-2359	0					40.301042	-123.674077	H 02S 04E 12	Contributor
NEG	2013-05-22	2015-2025	0					40.310908	-123.670489	H 02S 04E 12	Contributor
NEG	2013-05-22	0058-0108	0					40.318707	-123.665726	H 02S 05E 06	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2013-05-22	2053-2103	0					40.300241	-123.663936	H 02S 05E 07	Contributor
NEG	2013-05-22	2117-2127	0					40.301042	-123.674077	H 02S 04E 12	Contributor
POS	2013-05-22	0132	1	UM				40.307235	-123.661311	H 02S 05E 07	Contributor
NEG	2013-05-25	1740-1915	0					40.305972	-123.662991	H 02S 05E 07	Half-section centroid
NEG	2013-06-14	2315-2325	0					40.300241	-123.663936	H 02S 05E 07	Contributor
POS	2013-06-14	2148	1	UF				40.309158	-123.671571	H 02S 04E 12	Contributor
NEG	2013-06-14	2117-2127	0					40.318707	-123.665726	H 02S 05E 06	Contributor
NEG	2013-06-14	2245-2255	0					40.301042	-123.674077	H 02S 04E 12	Contributor
POS	2013-06-15	1913-2002	2	UMUF	Y			40.308813	-123.669833	H 02S 04E 12	Contributor
POS	2013-07-10	2140	1	UF				40.302703	-123.667857	H 02S 04E 12	Contributor
NEG	2013-07-10	2050-2100	0					40.310908	-123.670489	H 02S 04E 12	Contributor
NEG	2013-07-10	2152-2202	0					40.301042	-123.674077	H 02S 04E 12	Contributor
NEG	2013-07-10	2313-2323	0					40.318707	-123.665726	H 02S 05E 06	Contributor
NEG	2013-08-06	2043-2053	0					40.318707	-123.665726	H 02S 05E 06	Contributor
NEG	2013-08-06	2059-2109	0					40.311266	-123.661849	H 02S 05E 07	Contributor
POS	2013-08-06	2130	1	UU	Y			40.308095	-123.663090	H 02S 05E 07	Contributor
POS	2013-08-06	2130	1	UU	Y			40.306626	-123.663492	H 02S 05E 07	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
POS	2013-08-08	0000	1	UU	Y			40.301042	-123.674077	H 02S 04E 12	Contributor
POS	2013-08-08	0000	1	UU	Y			40.301042	-123.674077	H 02S 04E 12	Contributor
NEG	2013-08-23	2304-2314	0					40.301042	-123.674077	H 02S 04E 12	Contributor
NEG	2013-08-23	2347-2357	0					40.300241	-123.663936	H 02S 05E 07	Contributor
NEG	2014	2400	0					40.310908	-123.670489	H 02S 04E 12	Contributor
NEG	2014	2400	0					40.301042	-123.674077	H 02S 04E 12	Contributor
NEG	2014	2400	0					40.306804	-123.661270	H 02S 05E 07	Contributor
NEG	2014-03-21	2141-2151	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-03-21	2042-2052	0					40.303432	-123.670847	H 02S 04E 12	Contributor
POS	2014-03-21	2100	1	UF				40.300241	-123.663936	H 02S 05E 07	Contributor
POS	2014-03-23	1951	1	UM				40.304723	-123.665350	H 02S 05E 07	Contributor
NEG	2014-03-23	2349-2359	0					40.311266	-123.661849	H 02S 05E 07	Contributor
NEG	2014-03-24	1445-1935	0					40.302379	-123.663017	H 02S 05E 07	Quarter-section centroid
NEG	2014-03-24	1445-1935	0					40.316687	-123.672437	H 02S 04E 01	Quarter-section centroid
POS	2014-04-03	1612-1637	2	UMUF	Y			40.306996	-123.668588	H 02S 04E 12	Contributor
NEG	2014-04-19	2337-2347	0					40.311266	-123.661849	H 02S 05E 07	Contributor
NEG	2014-04-19	2319-2329	0					40.318707	-123.665726	H 02S 05E 06	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2014-05-16	2346-2356	0					40.318707	-123.665726	H 02S 05E 06	Contributor
POS	2014-05-16	2120	1	UF				40.302143	-123.663862	H 02S 05E 07	Contributor
AC	2014-05-28	1722-1814	2	UMUF	Y			40.308176	-123.668891	H 02S 04E 12	Contributor
NEG	2014-06-13	0015-0025	0					40.318707	-123.665726	H 02S 05E 06	Contributor
NEG	2014-06-13	2320-2336	0					40.300241	-123.663936	H 02S 05E 07	Contributor
NEG	2014-06-13	2049-2059	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-06-13	0029-0039	0					40.311266	-123.661849	H 02S 05E 07	Contributor
POS	2014-07-11	2318	1	UM				40.314484	-123.669463	H 02S 04E 01	Contributor
NEG	2014-07-11	2256-2306	0					40.300241	-123.663936	H 02S 05E 07	Contributor
NEG	2014-07-11	2111-2121	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-08-01	2130-2140	0					40.313349	-123.681144	H 02S 04E 01	Contributor
NEG	2014-08-02	0007-0017	0					40.300241	-123.663936	H 02S 05E 07	Contributor
POS	2014-08-02	1530-1915	2	UMUF	Y			40.307126	-123.668912	H 02S 04E 12	Contributor
Masterowl: HUM1140 Subspecies: NORTHERN											
NEG	2006	2400	0					40.301300	-123.632070	H 02S 05E 08	Contributor
NEG	2007	2400	0					40.301300	-123.632070	H 02S 05E 08	Contributor
NEG	2015	2400	0					40.303668	-123.625683	H 02S 05E 09	Contributor

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
NEG	2015-04-02	1024-1034	0					40.298126	-123.628987	H 02S 05E 16	Contributor
POS	2015-04-28	0027-0107	1	UU				40.298126	-123.628987	H 02S 05E 16	Contributor
POS	2015-05-12	0030-0055	1	UM				40.298126	-123.628987	H 02S 05E 16	Contributor
NEG	2015-06-01	0011-0021	0					40.298126	-123.628987	H 02S 05E 16	Contributor
POS	2015-06-17	0004-0034	1	UU				40.298126	-123.628987	H 02S 05E 16	Contributor
NEG	2015-06-26	0006-0016	0					40.298126	-123.628987	H 02S 05E 16	Contributor
NEG	2018-05-23	1505-1805	0					40.305657	-123.619833	H 02S 05E 09	Section centroid
POS	2018-05-23	2115	1	UU				40.302734	-123.620255	H 02S 05E 09	Contributor
POS	2018-06-12	1845-2019	1	UU				40.303200	-123.620440	H 02S 05E 09	Contributor
AC	2018-06-21	1845-2142	1	UM				40.303810	-123.624190	H 02S 05E 09	Contributor
POS	2019-03-08	1530-1910	1	UM				40.302605	-123.624660	H 02S 05E 09	Contributor

Appendix E

NRCS Web Soil Survey Reports

Naiad Biological Consulting

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Whipsawson LLC

2555 Sunset Ridge Rd
Blocksburg, CA 95514

Assessor Parcel Number (APN):
APN: 217 – 391 – 012

June 2023

Humboldt County, South Part, California

451—Burgsblock-Coolyork-Tannin complex, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: hs7j
Elevation: 200 to 4,000 feet
Mean annual precipitation: 49 to 90 inches
Mean annual air temperature: 52 to 59 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Burgsblock and similar soils: 35 percent
Coolyork and similar soils: 30 percent
Tannin and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burgsblock

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, concave, convex
Parent material: Colluvium derived from sedimentary rock and/or residuum weathered from sedimentary rock

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A1 - 2 to 11 inches: gravelly loam
A2 - 11 to 16 inches: gravelly loam
Bt1 - 16 to 41 inches: very gravelly loam
Bt2 - 41 to 51 inches: very gravelly loam
Bt3 - 51 to 71 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F005XZ022CA - Mesic Mountains >60"ppt
Hydric soil rating: No

Description of Coolyork

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, concave, convex
Parent material: Colluvium derived from mudstone and/or colluvium derived from sandstone and/or residuum weathered from schist

Typical profile

A - 0 to 4 inches: loam
BAt - 4 to 14 inches: clay loam
Bt1 - 14 to 23 inches: clay loam
Bt2 - 23 to 43 inches: clay loam
C1 - 43 to 55 inches: gravelly loam
C2 - 55 to 71 inches: gravelly silt loam

Properties and qualities

Slope: 15 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: F005XZ020CA - Very Deep Mesic Mountains 40-60"ppt

Hydric soil rating: No

Description of Tannin

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from mudstone and/or colluvium derived from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: loam
Bt1 - 3 to 14 inches: loam
Bt2 - 14 to 26 inches: loam
Bt3 - 26 to 49 inches: loam
Bt4 - 49 to 62 inches: sandy clay loam
BCt - 62 to 79 inches: sandy clay loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F005XZ022CA - Mesic Mountains >60"ppt
Hydric soil rating: No

Minor Components

Rockyglen

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope, shoulder
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, concave, convex
Hydric soil rating: No

Wohly

Percent of map unit: 4 percent
Landform: Ridges, mountain slopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Chalkmountain

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, concave, convex
Hydric soil rating: No

Yorknorth

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 12, Sep 2, 2022

Humboldt County, South Part, California

668—Dryfield-Yorknorth-Witherell complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2lgsj
Elevation: 200 to 2,490 feet
Mean annual precipitation: 49 to 90 inches
Mean annual air temperature: 52 to 59 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Dryfield and similar soils: 40 percent
Yorknorth and similar soils: 30 percent
Witherell and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dryfield

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

A - 0 to 9 inches: loam
Bt1 - 9 to 19 inches: loam
Bt2 - 19 to 35 inches: loam
Bt3 - 35 to 49 inches: loam
BCt - 49 to 59 inches: very paragravelly loam
C - 59 to 71 inches: very paragravelly loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F005XZ013CA - Thermic Mountains
Hydric soil rating: No

Description of Yorknorth

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Colluvium derived from sandstone and/or earthflow deposits derived from schist

Typical profile

A1 - 0 to 12 inches: silt loam
A2 - 12 to 22 inches: silt loam
Bt1 - 22 to 33 inches: clay loam
Bt2 - 33 to 39 inches: clay
C1 - 39 to 46 inches: clay loam
C2 - 46 to 49 inches: clay
C3 - 49 to 56 inches: gravelly clay
C4 - 56 to 79 inches: clay

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R005XZ005CA - Thermic Hills
Hydric soil rating: No

Description of Witherell

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

A - 0 to 3 inches: loam
Bw - 3 to 7 inches: gravelly loam
Bt - 7 to 13 inches: gravelly loam
C - 13 to 79 inches: gravel

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 10 to 14 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R005XZ005CA - Thermic Hills
Hydric soil rating: No

Minor Components

Coolyork

Percent of map unit: 8 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Tannin

Percent of map unit: 4 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, shoulder, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Burgsblock

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, shoulder, footslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 12, Sep 2, 2022

Humboldt County, South Part, California

673—Coolyork-Yorknorth complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: v6lj
Elevation: 200 to 2,490 feet
Mean annual precipitation: 49 to 90 inches
Mean annual air temperature: 52 to 59 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Coolyork and similar soils: 45 percent
Yorknorth and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coolyork

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Colluvium derived from mudstone and/or colluvium derived from sandstone and/or residuum weathered from schist

Typical profile

A - 0 to 6 inches: loam
ABt - 6 to 19 inches: clay loam
Bt1 - 19 to 31 inches: clay loam
Bt2 - 31 to 49 inches: clay
C1 - 49 to 63 inches: gravelly clay loam
C2 - 63 to 79 inches: gravelly clay

Properties and qualities

Slope: 30 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F005XZ020CA - Very Deep Mesic Mountains 40-60"ppt
Hydric soil rating: No

Description of Yorknorth

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Colluvium derived from sandstone and/or residuum weathered from schist and/or earthflow deposits derived from mudstone

Typical profile

A - 0 to 2 inches: loam
ABt - 2 to 12 inches: loam
Bt1 - 12 to 29 inches: clay loam
Bt2 - 29 to 33 inches: clay
Bt3 - 33 to 46 inches: clay
Bt4 - 46 to 50 inches: gravelly clay
BCt - 50 to 71 inches: gravelly clay loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R005XZ005CA - Thermic Hills
Hydric soil rating: No

Minor Components

Witherell

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Dryfield

Percent of map unit: 4 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Burgsblock

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, concave, convex
Hydric soil rating: No

Tannin

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, shoulder, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex

Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 12, Sep 2, 2022

Appendix F

Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMP)

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Whipsawson LLC

2555 Sunset Ridge Rd
Blocksburg, CA 95514

Assessor Parcel Number (APN):
APN: 217 – 391 – 012

June 2023

Cannabis Cultivation

Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMP)

Adapted from

State Water Resources Control Board Cannabis General Order WQ 2017-0023-DWQ Attachment A

BBTCs and BMPs are designed to prevent, minimize, and control the discharge of waste and pollutants associated with site operations and maintenance for the aforementioned project. Many of these BMPs are considered enforceable conditions under State Water Resources Control Board *Cannabis* General Order No. WQ 2017-0023-DWQ.

No.	TERM
Land Development and Maintenance, Erosion Control, and Drainage Features	
Limitations on Earthmoving	
1.	Landowners shall not conduct grading activities for land development or alteration on slopes exceeding 50 percent grade, or as restricted by local county or city permits, ordinances, or regulations for grading, or agriculture; whichever is more stringent shall apply. The grading prohibition on slopes exceeding 50 percent does not apply to site mitigation or remediation if the landowner is issued separate WDRs or an enforcement order for the activity by the Regional Water Board Executive Officer.
2.	Finished cut and fill slopes, including side slopes between terraces, shall not exceed slopes of 50 percent and should conform to the natural pre-grade slope whenever possible.
3.	Landowners shall not drive or operate vehicles or equipment within the riparian setbacks or within waters of the state unless authorized under 404/401 CWA permits, a CDFW LSA Agreement, coverage under a water quality certification, or site-specific WDRs issued by the Regional Water Board. This requirement does not prohibit driving on established, maintained access roads that are in compliance with this various agency standards.
4.	Land development and access road construction shall be designed by qualified professionals. Landowners shall conduct all construction or land development activities to minimize grading, soil disturbance, and disturbance to aquatic and terrestrial habitat.
5.	The landowner shall control all dust related to operation activities to ensure dust does not produce sediment-laden runoff. The landowner shall implement dust control measures, including, but not limited to, pre-watering of excavation or grading sites, use of water trucks, track-out prevention, washing down vehicles or equipment before leaving a site, and prohibiting land disturbance activities when instantaneous wind speeds (gusts) exceed 25 miles per hour. Landowners shall grade access roads in dry weather while moisture is still present in soil to minimize dust and to achieve design soil compaction, or when needed use a water truck to control dust and soil moisture.
Construction Equipment Use and Limitations	
6.	Landowners shall employ spill control and containment practices to prevent the discharge of fuels, oils, solvents and other chemicals to soils and waters of the state.

7.	Landowners shall stage and store equipment, materials, fuels, lubricants, solvents, or hazardous or toxic materials in locations that minimize the potential for discharge to waters of the state. At a minimum, the following measures shall be implemented: 1. Designate an area outside the riparian setback for equipment storage, short-term maintenance, and refueling. Landowner shall not conduct any maintenance activity or refuel equipment in any location where the petroleum products or other pollutants may enter waters of the state as per Fish and Game Code section 5650 (a)(1). 2. Frequently inspect equipment and vehicles for leaks. 3. Immediately clean up leaks, drips, and spills. Except for emergency repairs that are necessary for safe transport of equipment or vehicles to an appropriate repair facility, equipment or vehicle repairs, maintenance, and washing onsite is prohibited. 4. If emergency repairs generate waste fluids, ensure they are contained and properly disposed or recycled off-site. 5. Properly dispose of all construction debris off-site. 6. Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. Sweep up, contain, and properly dispose of spilled dry materials.
Erosion Control	
8.	The landowner shall use appropriate erosion control measures to minimize erosion of disturbed areas, potting soil, or bulk soil amendments to prevent discharges of waste. Fill soil shall not be placed where it may discharge into surface water. If used, weed-free straw mulch shall be applied at a rate of two tons per acre of exposed soils and, if warranted by site conditions, shall be secured to the ground.
9.	The landowner shall not plant or seed noxious weeds. Prohibited plant species include those identified in the California Invasive Pest Plant Council's database, available at: www.cal-ipc.org/paf/. Locally native, non-invasive, and non-persistent grass species may be used for temporary erosion control benefits to stabilize disturbed land and prevent exposure of disturbed land to rainfall.
10.	Landowners shall incorporate erosion control and sediment detention devices and materials into the design, work schedule, and implementation of the project activities. The erosion prevention and sediment capture measures shall be effective in protecting water quality. • Interim erosion prevention and sediment capture measures shall be implemented within seven days of completion of grading and land disturbance activities, and shall consist of erosion prevention measures and sediment capture measures including: o Erosion prevention measures are required for any earthwork that uses heavy equipment (e.g., bulldozer, compactor, excavator, etc.). Erosion prevention measures may include surface contouring, slope roughening, and upslope storm water diversion. Other types of erosion prevention measures may include mulching, hydroseeding, tarp placement, revegetation, and rock slope protection. o Sediment capture measures include the implementation of measures such as gravel bag berms, fiber rolls, straw bale barriers, properly installed silt fences, and sediment settling basins. • Long-term erosion prevention and sediment capture measures shall be implemented as soon as possible and prior to the onset of fall and winter precipitation. Long-term measures may include the use of heavy equipment to reconfigure access roads or improve access road drainage, installation of properly-sized culverts, gravel placement on steeper grades, and stabilization of previously disturbed land. • Maintenance of all erosion protection and sediment capture measures is required year round. Early monitoring allows for identification of problem areas or underperforming erosion or sediment control measures. Verification of the effectiveness of all erosion prevention and sediment capture measures is required as part of winterization activities.
11.	Landowners shall only use geotextiles, fiber rolls, and other erosion control measures made of loose-weave mesh (e.g., jute, coconut (coir) fiber, or from other products without welded weaves). To minimize the risk of ensnaring and strangling wildlife, Landowners shall not use synthetic (e.g., plastic or nylon) monofilament netting materials for erosion control for any project activities. This prohibition includes photo- or bio-degradable plastic netting.

12.	Cultivation sites constructed on or near slopes with a slope greater than or equal to 30 percent shall be inspected for indications of instability. Indications of instability include the occurrence of slope failures at nearby similar sites, weak soil layers, geologic bedding parallel to slope surface, hillside creep (trees, fence posts, etc. leaning downslope), tension cracks in the slope surface, bulging soil at the base of the slope, and groundwater discharge from the slope. If indicators of instability are present, the landowner shall consult with a qualified professional to design measures to stabilize the slope to prevent sediment discharge to surface waters.
13.	For areas outside of riparian setbacks or for upland areas, Landowners shall ensure that rock placed for slope protection is the minimum amount necessary and is part of a design that provides for native plant revegetation. If retaining walls or other structures are required to provide slope stability, they shall be designed by a qualified professional.
14.	Landowners shall monitor erosion control measures during and after each storm event that produces at least 0.5 in/day or 1.0 inch/7 days of precipitation, and repair or replace, as needed, ineffective erosion control measures immediately.
Access Road/Land Development and Drainage	
15.	Access roads shall be constructed consistent with the requirements of California Code of Regulations Title 14, Chapter 4. The Road Handbook describes how to implement the regulations and is available at <http://www.pacificwatershed.com/PWA-publications- library>. Existing access roads shall be upgraded to comply with the Road Handbook.
16.	Landowners shall obtain all required permits and approvals prior to the construction of any access road constructed for project activities. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), CDFW LSA Agreement, and county or local agency permits.
17.	Landowners shall ensure that all access roads are hydrologically disconnected to receiving waters to the extent possible by installing disconnecting drainage features, increasing the frequency of (inside) ditch drain relief as needed, constructing out-sloped roads, constructing energy dissipating structures, avoiding concentrating flows in unstable areas, and performing inspection and maintenance as needed to optimize the access road performance.
18.	New access road alignments should be constructed with grades (slopes) of 3- to 8- percent, or less, wherever possible. Forest access roads should generally be kept below 12-percent except for short pitches of 500 feet or less where road slopes may go up to 20- percent. These steeper access road slopes should be paved or rock surfaced and equipped with adequate drainage. Existing access roads that do not comply with these limits shall be inspected by a qualified professional to determine if improvements are needed.
19.	Landowners shall decommission or relocate existing roads away from riparian setbacks whenever possible. Roads that are proposed for decommissioning shall be abandoned and left in a condition that provides for long-term, maintenance-free function of drainage and erosion controls. Abandoned roads shall be blocked to prevent unauthorized vehicle traffic.
20.	If site conditions prohibit drainage structures (including rolling dips and ditch-relief culverts) at adequate intervals to avoid erosion, the landowner shall use bioengineering techniques[12] as the preferred measure to minimize erosion (e.g., live fascines). If bioengineering cannot be used, then engineering fixes such as armoring (e.g., 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) may be used for problem sites. The maximum distance between water breaks shall not exceed those defined in the Road Handbook.
21.	Landowners shall have a qualified professional design the optimal access road alignment, surfacing, drainage, maintenance requirements, and spoils handling procedures.
22.	Landowners shall ensure that access road surfacing, especially within a segment leading to a waterbody, is sufficient to minimize sediment delivery to the wetland or waterbody and maximize access road integrity. Road surfacing may include pavement, chip-seal, lignin, rock, or other material appropriate for timing and nature of use. All access roads that will be used for winter or wet weather hauling/traffic shall be surfaced. Steeper access road grades require higher quality rock (e.g., crushed angular versus river-run) to remain in place. The use of asphalt grindings is prohibited.
23.	Landowners shall install erosion control measures on all access road approaches to surface water diversion sites to reduce the generation and transport of sediment to streams.

24.	Landowners shall ensure that access roads are out-sloped whenever possible to promote even drainage of the access road surface, prevent the concentration of storm water flow within an inboard or inside ditch, and to minimize disruption of the natural sheet flow pattern off a hill slope to a stream.
25.	If unable to eliminate inboard or inside ditches, the landowner shall ensure adequate ditch relief culverts to prevent down-cutting of the ditch and to reduce water runoff concentration, velocity, and erosion. Ditches shall be designed and maintained as recommended by a qualified professional. To avoid point-source discharges, inboard ditches and ditch relief culverts shall be discharged onto vegetated or armored slopes that are designed to dissipate and prevent runoff channelization. Inboard ditches and ditch relief culverts shall be designed to ensure discharges into natural stream channels or watercourses are prevented.
26.	Landowners shall ensure that access roads are not allowed to develop or show evidence of significant surface rutting or gullying. Landowners shall use water bars and rolling dips as designed by a qualified professional to minimize access road surface erosion and dissipate runoff.
27.	Landowners shall only grade ditches when necessary to prevent erosion of the ditch, undermining of the banks, or exposure of the toe of the cut slope to erosion. Landowners shall not remove more vegetation than necessary to keep water moving, as vegetation prevents scour and filters out sediment.
28.	Access road storm water drainage structures shall not discharge onto unstable slopes, earthen fills, or directly to a waterbody. Drainage structures shall discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap.
29.	Sediment control devices (e.g., check dams, sand/gravel bag barriers, etc.) shall be used when it is not practical to disperse storm water before discharge to a waterbody. Where potential discharge to a wetland or waterbody exists (e.g., within 200 feet of a waterbody) access road surface drainage shall be filtered through vegetation, slash, other appropriate material, or settled into a depression with an outlet with adequate drainage. Sediment basins shall be engineered and properly sized to allow sediment settling, spillway stability, and maintenance activities.
Drainage Culverts (See also Watercourse Crossings)	
30.	Landowners shall regularly inspect ditch-relief culverts and clear them of any debris or sediment. To reduce ditch-relief culvert plugging by debris, Landowners shall use 15- to 24-inch diameter pipes, at minimum. In forested areas with a potential for woody debris, a minimum 18-inch diameter pipe shall be used to reduce clogging. Ditch relief culverts shall be designed by a qualified professional based on site-specific conditions.
31.	Landowners shall ensure that all permanent watercourse crossings that are constructed or reconstructed are capable of accommodating the estimated 100-year flood flow, including debris and sediment loads. Watercourse crossings shall be designed and sized by a qualified professional.
Cleanup, Restoration, and Mitigation	
32.	Landowners shall limit disturbance to existing grades and vegetation to the actual site of the cleanup or remediation and any necessary access routes.
33.	Landowners shall avoid damage to native riparian vegetation. All exposed or disturbed land and access points within the stream and riparian setback with damaged vegetation shall be restored with regional native vegetation of similar native species. Riparian trees over four inches diameter at breast height shall be replaced by similar native species at a ratio of three to one (3:1). Restored areas must be mulched, using at least 2 to 4 inches of weed-free, clean straw or similar biodegradable mulch over the seeded area. Mulching shall be completed within 30 days after land disturbance activities in the areas cease. Revegetation planting shall occur at a seasonally appropriate time until vegetation is restored to pre-operation or pre-Legacy condition or better. Landowners shall stabilize and restore any temporary work areas with native vegetation to pre-operation or pre-Legacy conditions or better. Vegetation shall be planted at an adequate density and variety to control surface erosion and re-generate a diverse composition of regional native vegetation of similar native species.
34.	Landowners shall avoid damage to oak woodlands. Landowner shall plant three oak trees for every one oak tree damaged or removed. Trees may be planted in groves in order to maximize wildlife benefits and shall be native to the local county.

35.	Landowners shall develop a revegetation plan for: • All exposed or disturbed riparian vegetation areas, • any oak trees that are damaged or removed, and • temporary work areas. Landowners shall develop a monitoring plan that evaluates the revegetation plan for five years. Landowners shall maintain annual inspections for the purpose of assessing an 85 percent survival and growth of revegetated areas within a five-year period. The presence of exposed soil shall be documented for three years following revegetation work. If the revegetation results in less than an 85 percent success rate, the unsuccessful vegetation areas shall be replanted. Landowners shall identify the location and extent of exposed soil associated with the site; pre- and post-revegetation work photos; diagram of all areas revegetated, the planting methods, and plants used; and an assessment of the success of the revegetation program. Landowners shall maintain a copy of the revegetation plan and monitoring results onsite and make them available, upon request, to Water Boards staff or authorized representatives. An electronic copy of monitoring results is acceptable in Portable Document Format (PDF).
36.	Landowners shall revegetate soil exposed as a result of project activities with native vegetation by live planting, seed casting, or hydroseeding within seven days of exposure.
37.	Landowners shall prevent the spread or introduction of exotic plant species to the maximum extent possible by cleaning equipment before delivery to the Site and before removal, restoring land disturbance with appropriate native species, and post-project activities monitoring and control of exotic species.
Stream Crossing Installation and Maintenance	
Limitations on Work in Watercourses and Permanently Ponded Areas	
38.	Landowners shall obtain all applicable permits and approvals prior to doing any work in or around waterbodies or within the riparian setbacks. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), and a CDFW LSA Agreement.
39.	Landowners shall avoid or minimize temporary stream crossings. When necessary, temporary stream crossings shall be located in areas where erosion potential and damage to the existing habitat is low. Landowners shall avoid areas where runoff from access roadway side slopes and natural hillsides will drain and flow into the temporary crossing. Temporary stream crossings that impede fish passage are strictly prohibited on permanent or seasonal fish-bearing streams.
40.	Landowners shall avoid or minimize use of heavy equipment[13] in a watercourse. If use is unavoidable, heavy equipment may only travel or work in a waterbody with a rocky or cobbled channel. Wood, rubber, or clean native rock temporary work pads shall be used on the channel bottom prior to use of heavy equipment to protect channel bed and preserve channel morphology. Temporary work pads and other channel protection shall be removed as soon as possible once the use of heavy equipment is complete.
41.	Landowners shall avoid or minimize work in or near a stream, creek, river, lake, pond, or other waterbody. If work in a waterbody cannot be avoided, activities and associated workspace shall be isolated from flowing water by directing the water around the work site. If water is present, then the landowner shall develop a site-specific plan prepared by a qualified professional. The plan shall consider partial or full stream diversion and dewatering. The plan shall consider the use of coffer dams upstream and downstream of the work site and the diversion of all flow from upstream of the upstream dam to downstream of the downstream dam, through a suitably sized pipe with intake screens that protect and prevent impacts to fish and wildlife. Project activities and associated work shall be performed outside the waterbody from the top of the bank to the maximum extent possible.
Temporary Watercourse Diversion and Dewatering: All Live Watercourses	
42.	Landowners shall ensure that coffer dams are constructed prior to commencing work and as close as practicable upstream and downstream of the work area. Cofferdam construction using offsite materials, such as clean gravel bags or inflatable dams, is preferred. Thick plastic may be used to minimize leakage but shall be completely removed and properly disposed of upon work completion. If the coffer dams or stream diversion fail, the landowner shall repair them immediately.

43.	When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, the landowner shall allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937.
44.	If possible, gravity flow is the preferred method of water diversion. If a pump is used, the landowner shall ensure that the pump is operated at the rate of flow that passes through the site. Pumping rates shall not dewater or impound water on the upstream side of the coffer dam. When diversion pipe is used it shall be protected from project activities and maintained to prevent debris blockage.
45.	Landowners shall only divert water such that water does not scour the channel bed or banks at the downstream end. Landowner shall divert flow in a manner that prevents turbidity, siltation, and pollution and provides flows to downstream reaches. Landowners shall provide flows to downstream reaches during all times that the natural flow would have supported aquatic life. Flows shall be of sufficient quality and quantity, and of appropriate temperature to support fish and other aquatic life both above and below the diversion. Block netting and intake screens shall be sized to protect and prevent impacts to fish and wildlife.
46.	Once water has been diverted around the work area, Landowners may dewater the site to provide an adequately dry work area. Any muddy or otherwise contaminated water shall be pumped to a settling tank, dewatering filter bag, or upland area, or to another location approved by CDFW or the appropriate Regional Water Board Executive Officer prior to re-entering the watercourse.
47.	Upon completion of work, Landowners shall immediately remove the flow diversion structure in a manner that allows flow to resume with a minimum of disturbance to the channel substrate and that minimizes the generation of turbidity.
Watercourse Crossings	
48.	Landowners shall ensure that watercourse crossings are designed by a qualified professional.
49.	Landowners shall ensure that all access road watercourse crossing structures allow for the unrestricted passage of water and shall be designed to accommodate the estimated 100-year flood flow and associated debris (based upon an assessment of the streams potential to generate debris during high flow events). Consult CAL FIRE 100-year Watercourse Crossings document for examples and design calculations, available at: http://calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20(final-a).pdf.
50.	Landowners shall ensure that watercourse crossings allow migration of aquatic life during all life stages supported or potentially supported by that stream reach. Design measures shall be incorporated to ensure water depth and velocity does not inhibit migration of aquatic life. Any access road crossing structure on watercourses that supports fish shall be constructed for the unrestricted passage of fish at all life stages, and should use the following design guidelines: • CDFW's *Culvert Criteria for Fish Passage;* • CDFW's *Salmonid Stream Habitat Restoration Manual, Volume 2, Part IX: Fish Passage Evaluation at Stream Crossings; and* • National Marine Fisheries Service, Southwest Region *Guidelines for Salmonid Passage at Stream Crossings.*
51.	Landowners shall conduct regular inspection and maintenance of stream crossings to ensure crossings are not blocked by debris. Refer to California Board of Forestry Technical Rule No. 5 available at: http://www.calforests.org/wp- content/uploads/2013/10/Adopted-TRA5.pdf.
52.	Landowners shall only use rock fords for temporary seasonal crossings on small watercourses where aquatic life passage is not required during the time period of use. Rock fords shall be oriented perpendicular to the flow of the watercourse and designed to maintain the range of surface flows that occur in the watercourse. When constructed, rock shall be sized to withstand the range of flow events that occur at the crossing and rock shall be maintained at the rock ford to completely cover the channel bed and bank surfaces to minimize soil compaction, rutting, and erosion. Rock must extend on either side of the ford up to the break in slope. The use of rock fords as watercourse crossings for all-weather access road use is prohibited.
53.	Landowners shall ensure that culverts used at watercourse crossings are designed to direct flow and debris toward the inlet (e.g., use of wing-walls, pipe beveling, rock armoring, etc.) to prevent erosion of road fill, debris blocking the culvert, and watercourses from eroding a new channel.

54.	Landowners shall regularly inspect and maintain the condition of access roads, access road drainage features, and watercourse crossings. At a minimum, Landowners shall perform inspections prior to the onset of fall and winter precipitation and following storm events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation. Landowners are required to perform all of the following maintenance: • Remove any wood debris that may restrict flow in a culvert. • Remove sediment that impacts access road or drainage feature performance. • Place any removed sediment in a location outside the riparian setbacks and stabilize the sediment. • Maintain records of access road and drainage feature maintenance and consider redesigning the access road to improve performance and reduce maintenance needs.
55.	Landowners shall compact access road crossing approaches and fill slopes during installation and shall stabilize them with rock or other appropriate surface protection to minimize surface erosion. When possible, Landowners shall ensure that access roads over culverts are equipped with a critical dip to ensure that, if the culvert becomes blocked or plugged, water can flow over the access road surface without washing away the fill prism. Access road crossings where specific conditions do not allow for a critical dip or in areas with potential for significant debris accumulation, shall include additional measures such as emergency overflow culverts or oversized culverts that are designed by a qualified professional.
56.	Landowners shall ensure that culverts used at watercourse crossings are: 1) installed parallel to the watercourse alignment to the extent possible, 2) of sufficient length to extend beyond stabilized fill/sidecast material, and 3) embedded or installed at the same level and gradient of the streambed in which they are being placed to prevent erosion.
Soil Disposal and Spoils Management	
57.	Landowners shall store soil, construction, and waste materials outside the riparian setback except as needed for immediate construction needs. Such materials shall not be stored in locations of known slope instability or where the storage of construction or waste material could reduce slope stability.
58.	Landowners shall separate large organic material (e.g., roots, woody debris, etc.) from soil materials. Landowners shall either place the large organic material in long-term, upland storage sites, or properly dispose of these materials offsite.
59.	Landowners shall store erodible soil, soil amendments, and spoil piles to prevent sediment discharges in storm water. Storage practices may include use of tarps, upslope land contouring to divert surface flow around the material, or use of sediment control devices (e.g., silt fences, straw wattles, etc.).
60.	Landowners shall contour and stabilize stored spoils to mimic natural slope contours and drainage patterns (as appropriate) to reduce the potential for fill saturation and slope failure.
61.	For soil disposal sites Landowners shall: • revegetate soil disposal sites with a mix of native plant species, • cover the seeded and planted areas with mulched straw at a rate of two tons per acre, and • apply non-synthetic netting or similar erosion control fabric (e.g., jute) on slopes greater than 2:1 if the site is erodible.
62.	Landowners shall haul away and properly dispose of excess soil and other debris as needed to prevent discharge to waters of the state.
Riparian and Wetland Protection and Management	
63.	Landowners shall not disturb aquatic or riparian habitat, such as pools, spawning sites, large wood, or shading vegetation unless authorized under a CWA section 404 permit, CWA section 401 certification, Regional Water Board WDRs (when applicable), or a CDFW LSA Agreement.
64.	Landowners shall maintain existing, naturally occurring, riparian vegetative cover (e.g., trees, shrubs, and grasses) in aquatic habitat areas to the maximum extent possible to maintain riparian areas for streambank stabilization, erosion control, stream shading and temperature control, sediment and chemical filtration, aquatic life support, wildlife support, and to minimize waste discharge.
Water Storage and Use	
Water Supply, Diversion, and Storage	

65.	Landowners shall only install, maintain, and destroy wells in compliance with county, city, and local ordinances and with California Well Standards as stipulated in California Department of Water Resources Bulletins 74-90 and 74-81.
66.	All water diversions for project activities from a surface stream, subterranean stream flowing through a known and definite channel (e.g., groundwater well diversions from subsurface stream flows), or other surface waterbody are subject to the surface water Numeric and Narrative Instream Flow Requirements. This includes lakes, ponds, and springs (unless the spring is deemed exempt by the Deputy Director). See Section 3. Numeric and Narrative Instream Flow Requirements of this Attachment A for more information.
67.	Groundwater diversions may be subject to additional requirements, such as a forbearance period, if the State Water Board determines those requirements are reasonably necessary.
68.	Landowners are encouraged to use appropriate rainwater catchment systems to collect from impermeable surfaces (e.g., roof tops, etc.) during the wet season and store storm water in tanks, bladders, or off-stream engineered reservoirs to reduce the need for surface water or groundwater diversions.
69.	Landowners shall not divert surface water unless it is diverted in accordance with an existing water right that specifies, as appropriate, the source, location of the point of diversion, purpose of use, place of use, and quantity and season of diversion. Landowners shall maintain documentation of the water right at the project site. Documentation of the water right shall be available for review and inspection by the Water Boards, CDFW, and any other authorized representatives of the Water Boards or CDFW.
70.	Landowners shall ensure that all water diversion facilities are designed, constructed, and maintained so they do not prevent, impede, or tend to prevent the passing of fish, as defined by Fish and Game Code section 45, upstream or downstream, as required by Fish and Game Code section 5901. This includes but is not limited to the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream aquatic life movement and migration. Landowners shall allow sufficient water at all times to pass past the point of diversion to keep in good condition any fish that may be planted or exist below the point of diversion as defined by Fish and Game Code section 5937. Landowners shall not divert water in a manner contrary to or inconsistent with these Requirements.
71.	Landowners issued an SIUR by the State Water Board shall not divert surface water unless in compliance with all additional SIUR conditions required by CDFW.
72.	Water diversion facilities shall include satisfactory means for bypassing water to satisfy downstream prior rights and any requirements of policies for water quality control, water quality control plans, water quality certifications, waste discharge requirements, or other local, state or federal instream flow requirements. Landowners shall not divert in a manner that results in injury to holders of legal downstream senior rights. Landowners may be required to curtail diversions should diversion result in injury to holders of legal downstream senior water rights or interfere with maintenance of downstream instream flow requirements.
73.	Fuel powered (e.g., gas, diesel, etc.) diversion pumps shall be located in a stable and secure location outside of the riparian setbacks unless authorized under a 404/401 CWA permits, a CDFW LSA Agreement, coverage under a water quality certification, or site-specific WDRs issued by the Regional Water Board. Use of non-fuel powered diversion pumps (solar, electric, gravity, etc.) is encouraged. In all cases, all pumps shall: 1. be properly maintained, 2. have suitable containment to ensure any spills or leaks do not enter surface waterbodies or groundwater, and 3. have sufficient overhead cover to prevent exposure of equipment to precipitation.
74.	No water shall be diverted unless the landowner is operating the water diversion facility with a CDFW-approved water-intake screen (e.g. fish screen). The water intake screen shall be designed and maintained in accordance with screening criteria approved by CDFW. The screen shall prevent wildlife from entering the diversion intake and becoming entrapped. The landowner shall contact the regional CDFW Office, LSA Program for information on screening criteria for diversion(s).[15] The landowner shall provide evidence that demonstrates that the water intake screen is in good condition whenever requested by the Water Boards or CDFW. Points of re-diversion from off-stream storage facilities that are open to the environment shall have a water intake screen, as required by CDFW.
75.	Landowners shall inspect, maintain, and clean water intake screens and bypass appurtenances as directed by CDFW to ensure proper operation for the protection of fish and wildlife.

76.	Landowners shall not obstruct, alter, dam, or divert all or any portion of a natural watercourse prior to obtaining all applicable permits and approvals. Permits may include a valid water right, 404/401 CWA permits, a CDFW LSA Agreement, coverage under a water quality certification, or site-specific WDRs issued by the Regional Water Board.
77.	Landowners shall plug, block, cap, disconnect, or remove the diversion intake associated with project activities during the surface water forbearance period, unless the diversion intake is used for other beneficial uses, to ensure no water is diverted during that time.
78.	Landowners shall not divert from a surface water or from a subterranean stream for the project site at a rate more than a maximum instantaneous diversion rate of 10 gallons per minute, unless authorized under an existing appropriative water right.
82.	Onstream storage reservoirs are prohibited unless either: · The landowner has an existing water right with irrigation as a designated use, issued prior to October 31, 2017, that authorizes the onstream storage reservoir, or · The landowner obtains an appropriative water right permit with irrigation as a designated use prior to diverting water from an onstream storage reservoir for the project site. Landowners with a pending application or an unpermitted onstream storage reservoir shall not divert for project activities until the landowner has obtain a valid water right.
83.	Landowners are encouraged to install separate storage systems for water diverted for irrigation and water diverted for any other beneficial uses,[16] or otherwise shall install separate measuring devices to quantify diversion to and from each storage facility, including the quantity of water diverted and the quantity, place, and purpose of use (e.g., crop irrigation, domestic, etc.) for the stored water.
84.	The landowner shall install and maintain a measuring device(s) for surface water or subterranean stream diversions. The measuring device shall be, at a minimum equivalent to the requirements for direct diversions greater than 10 acre-feet per year in California Code of Regulations, Title 23, Division 3, Chapter 2.7. The measuring device(s) shall be located as close to the point of diversion as reasonable. Landowners shall maintain daily diversion records for water diverted. Landowners shall maintain separate records that document the amount of water used for project activities separated out from the amount of water used for other irrigation purposes and other beneficial uses of water (e.g., domestic, fire protection, etc.). Landowners shall maintain daily diversion records at the site and shall make the records available for review or by request by the Water Boards CDFW, or any other authorized representatives of the Water Boards or CDFW. Daily diversion records shall be retained for a minimum of five years. Compliance with this term is required for any surface water diversion, even those under 10 acre-feet per year.
85.	The State Water Board intends to develop and implement a basin-wide program for real- time electronic monitoring and reporting of diversions, withdrawals, releases and streamflow in a standardized format if and when resources become available. Such real- time reporting will be required upon a showing by the State Water Board that the program and the infrastructure are in place to accept real-time electronic reports. Implementation of the reporting requirements shall not necessitate amendment to this Requirement.
86.	Landowners shall not use off-stream storage reservoirs and ponds to store water for irrigation unless they are sited and designed or approved by a qualified professional in compliance with Division of Safety of Dams (DSOD), county, and/or city requirements, as applicable. If the DSOD, county, and/or city do not have established requirements they shall be designed consistent with the Natural Resource Conservation Service National Engineering Manual. Reservoirs shall be designed with an adequate overflow outlet that is protected and promotes the dispersal and infiltration of flow and prevents channelization. All off-stream storage reservoirs and ponds shall be designed, managed, and maintained to accommodate average annual winter period precipitation and storm water inputs to reduce the potential for overflow. Landowners shall plant native vegetation along the perimeter of the reservoir in locations where it does not impact the structural integrity of the reservoir berm or spillway. The landowner shall control vegetation around the reservoir berm and spillway to allow for visual inspection of berm and spillway condition and control burrowing animals as necessary.

87.	Landowners shall implement an invasive species management plan prepared by a Qualified Biologist for any existing or proposed water storage facilities that are open to the environment. The plan shall include, at a minimum, an annual survey for bullfrogs and other invasive aquatic species. If bullfrogs or other invasive aquatic species are identified, eradication measures shall be implemented under the direction of a qualified biologist, if appropriate after consultation with CDFW (pursuant to Fish and Game Code section 6400). Eradication methods can be direct or indirect. Direct methods may include hand- held dip net, hook and line, lights, spears, gigs, or fish tackle under a fishing license (pursuant to Fish and Game Code section 6855). An indirect method may involve seasonally timed complete dewatering and a drying period of the off-stream storage facility under a Permit to Destroy Harmful Species (pursuant to Fish and Game Code section 5501) issued by CDFW.
88.	Water storage bladders are not encouraged for long-term use. If bladders are used, the landowner shall ensure that the bladder is designed and properly installed to store water and that the bladder is sited to minimize the potential for water to flow into a watercourse in the event of a catastrophic failure. If a storage bladder has been previously used, the landowner shall carefully inspect the bladder to confirm its integrity and confirm the absence of any interior residual chemicals prior to resuming use. Landowners shall periodically inspect water storage bladders and containment features to ensure integrity. Water storage bladders shall be properly disposed of or recycled and not resold when assurance of structural integrity is no longer guaranteed.
89.	Landowners shall not use water storage bladders unless the bladder is safely contained within a secondary containment system with sufficient capacity to capture 110 percent of a bladder's maximum possible contents in the event of bladder failure (i.e., 110 percent of bladder's capacity). Secondary containment systems shall be of sufficient strength and stability to withstand the forces of released contents in the event of catastrophic bladder failure. In addition, secondary containment systems that are open to the environment shall be designed and maintained with sufficient capacity to accommodate precipitation and storm water inputs from a 25-year, 24-hour storm event.
90.	Landowners shall not cause or allow any overflow from off-stream water storage facilities that are closed to the environment (e.g., tanks and bladders) if the off-stream facilities are served by a diversion from surface water or groundwater. Landowners shall regularly inspect for and repair all leaks of the diversion and storage system.
91.	Water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment shall not be located in a riparian setback or next to equipment that generates heat. Landowners shall place water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment in areas that allow for ease of installation, access, maintenance, and minimize road development.
92.	Landowners shall install vertical and horizontal tanks according to manufacturer's specifications and shall place tanks on properly compacted soil that is free of rocks and sharp objects and capable of bearing the weight of the tank and its maximum contents with minimal settlement. Tanks shall not be located in areas of slope instability. Landowners shall install water storage tanks capable of containing more than 8,000 gallons only 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) per the recommendations of a qualified professional.
93.	To prevent rupture or overflow and runoff, Landowners shall only use water storage tanks and bladders equipped with a float valve, or equivalent device, to shut off diversion when storage systems are full. Landowners shall install any other measures necessary to prevent overflow of storage systems to prevent runoff and the diversion of more water than can be used and/or stored.
94.	Landowners shall ensure that all vents and other openings on water storage tanks are designed to prevent the entry and/or entrapment of wildlife.
95.	Landowners shall retain, for a minimum of five years, appropriate documentation for any hauled water[18] used for irrigation. Documentation for hauled water shall include, for each delivery, all of the following: 1. A receipt that shows the date of delivery and the name, address, license plate number, and license plate issuing state for the water hauler, 2. A copy of the Water Hauler's License (California Health and Safety Code section 111120), 3. A copy of proof of the Water Hauler's water right, groundwater well, or other authorization to take water, and the location of the water source, and 4. The quantity of water delivered or picked up from a water source, in gallons. Documentation shall be made available, upon request, to Water Boards or CDFW staff and any other authorized representatives of the Water Boards or CDFW.

Water Conservation and Use	
96.	Landowners shall regularly inspect their entire water delivery system for leaks and immediately repair any leaky faucets, pipes, connectors, or other leaks.
97.	Landowners shall use weed-free mulch in cultivation areas that do not have ground cover to conserve soil moisture and minimize evaporative loss.
98.	Landowners shall implement water conserving irrigation methods (e.g., drip or trickle irrigation, micro-spray, or hydroponics).
99.	Landowners shall maintain daily records of all water used for irrigation. Daily records may be calculated by the use of a measuring device or, if known, by calculating the irrigation system rates and duration of time watered (e.g., irrigating for one hour twice per day using 50 half-gallon drips equates to 50 gallons per day (1*2*50*0.5) of water used for irrigation). Landowners shall retain, for a minimum of 5 years, irrigation records at the site and shall make all irrigation records available for review by the Water Boards, CDFW and any other authorized representatives of the Water Boards or CDFW.
Irrigation Runoff	
100.	Landowners shall regularly inspect for leaks in mainlines[19], laterals[20], in irrigation connections, sprinkler heads, or at the ends of drip tape and feeder lines and immediately repair any leaks found upon detection.
101.	The irrigation system shall be designed to include redundancy (e.g., safety valves) in the event that leaks occur, so that waste of water and runoff is prevented and minimized.
102.	Landowners shall regularly replace worn, outdated, or inefficient irrigation system components and equipment to ensure a properly functioning, leak-free irrigation system at all times.
103.	Landowners shall minimize irrigation deep percolation[21] by applying irrigation water at agronomic rates.
Fertilizers, Pesticides, and Petroleum Products	
104.	Landowners shall not mix, prepare, over apply, or dispose of agricultural chemicals/products (e.g., fertilizers, pesticides, and other chemicals as defined in the applicable water quality control plan) in any location where they could enter the riparian setback or waters of the state. The use of agricultural chemicals inconsistently with product labeling, storage instructions, or DPR requirements for pesticide applications is prohibited. Disposal of unused product and containers shall be consistent with labels.
105.	Landowners shall keep and use absorbent materials designated for spill containment and spill cleanup equipment on-site for use in an accidental spill of fertilizers, petroleum products, hazardous materials, and other substances which may degrade waters of the state. The landowner shall immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills that could enter a waterbody or degrade groundwater.
106.	Landowners shall establish and use a separate storage area for pesticides, and fertilizers, and another storage area for petroleum or other liquid chemicals (including diesel, gasoline, oils, etc.). All such storage areas shall comply with the riparian setback Requirements, be in a secured location in compliance with label instructions, outside of areas of known slope instability, and be protected from accidental ignition, weather, and wildlife. All storage areas shall have appropriate secondary containment structures, as necessary, to protect water quality and prevent spillage, mixing, discharge, or seepage. Storage tanks and containers must be of suitable material and construction to be compatible with the substances stored and conditions of storage, such as pressure and temperature.
107.	Throughout the wet season, Landowners shall ensure that any temporary storage areas have a permanent cover and side-wind protection or be covered during non-working days and prior to and during rain events.
108.	Landowners shall only use hazardous materials in a manner consistent with the product's label.
109.	Landowners shall only keep hazardous materials in their original containers with labels intact and shall store hazardous materials to prevent exposure to sunlight, excessive heat, and precipitation. Landowners shall provide secondary containment for hazardous materials to prevent possible exposure to the environment. Disposal of unused hazardous materials and containers shall be consistent with the label.

110.	Landowners shall only mix, prepare, apply, or load hazardous materials outside of the riparian setbacks.
111.	Landowners shall not apply agricultural chemicals within 48 hours of a predicted rainfall event of 0.25 inches or greater with a probability greater than 50-percent. In the Lake Tahoe Hydrologic Unit, Landowners shall not apply agricultural chemicals within 48 hours of any weather pattern that is forecast to have a 30 percent or greater chance of precipitation greater than 0.1 inch per 24 hours. This requirement may be updated based on amendments to the Lahontan Regional Water Board construction storm water general order.
Fertilizers and Soils	
112.	To minimize infiltration and water quality degradation, Landowners shall irrigate and apply fertilizer to consistent with the crop need (i.e., agronomic rate).
113.	When used, Landowners shall apply nitrogen to cultivation areas consistent with crop need (i.e., agronomic rate). Landowners shall not apply nitrogen at a rate that may result in a discharge to surface water or groundwater that causes or contributes to exceedance of water quality objectives, and no greater than 319 pounds/acre/year unless plant tissue analysis performed by a qualified individual demonstrates the need for additional nitrogen application. The analysis shall be performed by an agricultural laboratory certified by the State Water Board's Environmental Laboratory Accreditation Program.
114.	Landowners shall ensure that potting soil or soil amendments, when not in use, are placed and stored with covers, when needed, to protect from rainfall and erosion, to prevent discharge to waters of the state, and to minimize leaching of waste constituents into groundwater.
Pesticides and Herbicides	
115.	Landowners shall not apply restricted materials, including restricted pesticides, or allow restricted materials to be stored at the site.
116.	Landowners shall implement integrated pest management strategies where possible to reduce the need and use of pesticides and the potential for discharges to waters of the state.
Petroleum Products and Other Chemicals	
117.	Landowners shall only refuel vehicles or equipment outside of riparian setbacks. Landowners shall inspect all equipment using oil, hydraulic fluid, or petroleum products for leaks prior to use and shall monitor equipment for leakage. Stationary equipment (e.g., motors, pumps, generators, etc.) and vehicles not in use shall be located outside of riparian setbacks. Spill and containment equipment (e.g., oil spill booms, sorbent pads, etc.) shall be stored onsite at all locations where equipment is used or staged.
118.	Landowners shall store petroleum, petroleum products, and similar fluids in a manner that provides chemical compatibility, provides secondary containment, and protection from accidental ignition, the sun, wind, and rain.
119.	Use of an underground storage tank(s) for the storage of petroleum products is allowed if compliant with all applicable federal, state, and local laws; regulations; and permitting requirements.
Cultivation-Related Waste	
120.	Landowners shall contain and regularly remove all debris and trash associated with cultivation activities from the cultivation site. Landowners shall only dispose of debris and trash at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Landowners shall not allow litter, plastic, or similar debris to enter the riparian setback or waters of the state. Plant material may be disposed of onsite in compliance with any applicable CDFA license conditions.
121.	Landowners shall only dispose or reuse spent growth medium (e.g., soil and other organic media) in a manner that prevents discharge of soil and residual nutrients and chemicals to the riparian setback or waters of the state. Spent growth medium shall be covered with plastic sheeting or stored in water tight dumpsters prior to proper disposal or reuse. Spent growth medium should be disposed of at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Proper reuse of spent growth medium may include incorporation into garden beds or spreading on a stable surface and revegetating the surface with native plants. Landowners shall use erosion control techniques, as needed, for any reused or stored spent growth medium to prevent polluted runoff.

Refuse and Domestic Waste	
122.	Landowners shall ensure that debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement and concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to any life stage of fish and wildlife or their habitat (includes food sources) does not contaminate soil or enter the riparian setback or waters of the state.
123.	Landowners shall not dispose of domestic wastewater unless it meets applicable local agency and/or Regional Water Board requirements. Landowners shall ensure that human or animal waste is disposed of properly. Landowners shall ensure onsite wastewater treatment systems (e.g., septic system) are permitted by the local agency or applicable Regional Water Board.
124.	If used, chemical toilets or holding tanks shall be maintained in a manner appropriate for the frequency and conditions of usage, sited in stable locations, and comply with the riparian setback Requirements.
Winterization	
125.	Landowners shall implement all applicable Erosion Control and Soil Disposal and Spoils Management Requirements in addition to the Winterization Requirements below by the onset of the winter period.
126.	Landowners shall block or otherwise close any temporary access roads to all motorized vehicles no later than the onset of the winter period each year.
127.	Landowners shall not operate heavy equipment of any kind at the site during the winter period, unless authorized for emergency repairs contained in an enforcement order issued by the State Water Board, Regional Water Board, or other agency having jurisdiction.
128.	Landowners shall apply linear sediment controls (e.g., silt fences, wattles, etc.) along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow length at the frequency specified below.

Slope (percent)	Sheet Flow Length Not to Exceed (feet)
0 – 25	20
25 – 50	15
>50	10

129.	Landowners shall maintain all culverts, drop inlets, trash racks and similar devices to ensure they are not blocked by debris or sediment. The outflow of culverts shall be inspected to ensure erosion is not undermining the culvert. Culverts shall be inspected prior to the onset of fall and winter precipitation and following precipitation events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation to determine if maintenance or cleaning is required.
130.	Landowners shall stabilize all disturbed areas and construction entrances and exits to control erosion and sediment discharges from land disturbance.
131.	Landowners shall cover and berm all loose stockpiled construction materials (e.g., soil, spoils, aggregate, etc.) that are not actively (scheduled for use within 48 hours) being used as needed to prevent erosion by storm water. The landowner shall have adequate cover and berm materials available onsite if the weather forecast indicates a probability of precipitation.
132.	Landowners shall apply erosion repair and control measures to the bare ground (e.g., cultivation area, access paths, etc.) to prevent discharge of sediment to waters of the state.
133.	As part of the winterization plan approval process, the Regional Water Board may require Landowners to implement additional site-specific erosion and sediment control requirements if the implementation of the Requirements in this section do not adequately protect water quality.