

CONFIDENTIAL

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Assessor Parcel Number (APN):
107 – 106 – 006



Prepared For:

Nava Ranch, Inc.

844 Wilder Ridge Rd
Honeydew, CA 95545

Prepared By:

Naiad
Biological
Consulting



www.naiadbiological.com
PO Box 121
Samoa, CA 95564

Date Prepared:

April 7th, 2021

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*

Mason London, MS Biology
Naiad Biological Consulting Principal Biologist

Table of Contents

SECTION 1 SUMMARY OF FINDINGS AND CONCLUSIONS	3
SECTION 2 INTRODUCTION, BACKGROUND, AND PROJECT UNDERSTANDING	4
2.1 PURPOSE AND NEED	4
2.2 BIOLOGIST'S QUALIFICATIONS.....	5
2.3 STUDY AREA DESCRIPTION AND GEOGRAPHIC SETTING	5
SECTION 3 METHODS	7
3.1 PRE-SITE VISIT DATA COMPILATION AND PREPARATION.....	7
3.2 BIOLOGICAL RESOURCE AND HABITAT INVESTIGATION	7
3.2.1 Floristic Survey	8
3.2.2 Wetland Assessment and Determination	9
3.2.3 Occurrence of Special-Status Species	9
SECTION 4 RESULTS AND DISCUSSION.....	11
4.1 STUDY AREA HABITAT, EXISTING SITE CONDITIONS AND PROJECT LOCATION FEASIBILITY.....	11
4.1.1 Mixed Evergreen and Oak Forest.....	11
4.1.2 Open Chaparral Habitat.....	11
4.1.3 Area Assessed for Project Feasibility	11
4.2 SPECIAL-STATUS PLANT SPECIES.....	13
4.3 SPECIAL-STATUS ANIMALS SPECIES.....	14
4.3.1 Other Special-Status Animal Species	16
4.4 SPECIAL STATUS HABITAT COMMUNITIES.....	16
SECTION 5 CONCLUSION	18
5.1 POTENTIAL IMPACTS AND RECOMMENDED MITIGATION	18
5.1.1 Potential Direct Impacts	18
5.1.2 Potential Indirect Impacts	18
5.1.3 Recommendations	19
5.2 STATEMENT OF LIMITATION	20
SECTION 6 REGULATORY FRAMEWORK	22
6.1 REGULATORY FRAMEWORK GUIDELINES	22
6.1.1 Federal Endangered Species Act.....	22
6.1.2 California Endangered Species Act.....	22
6.1.3 California Environmental Quality Act.....	23
6.1.4 Clean Water Act.....	23
6.1.5 California Water Quality Regulatory Programs	23
SECTION 7 REFERENCES.....	24
APPENDICES:	
Appendix A – Photo Documentation	
Appendix B – Tables	
Appendix C – Maps	
Appendix D – Special-Status Species Occurrence Reports	
Appendix E – NRCS Web Soil Survey Reports	
Appendix F – Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMP)	

Section 1 Summary of Findings and Conclusions

A Biological Reconnaissance and Project Feasibility Assessment was completed for Nava Ranch, Inc. as a preliminary measure to investigate the potential impacts of cannabis cultivation within the established Study Area.

The Study Area defined in this Report is located in near Honeydew, California in Humboldt County. Although the seasonal timing of the field visit did not fall within the blooming period of all rare and special-status plant species, the preexisting habitat quality observed within the areas assessed for project feasibility, suggests it unlikely that special-status plant species, not in bloom during the field survey, are present within the potential site location. However, an initial floristic survey, following recommended protocols, was conducted within the Area Assessed for Project Feasibility, and will be completed at the seasonally appropriate times at the location defined to be suitable for project development (and 200 ft surrounding any area that is to be disturbed) before any project related activities take place. No sensitive or special-status vegetation (not planted as an ornamental) was observed during the site visit nor shall will be removed within the project area.

With the proposed recommendations observed, the potential development of this project is not anticipated to cause any direct or indirect impacts to the surrounding wildlife, environment and/or habitats. However, it has been assumed that prior to implementation of this project, protocol-level surveys (i.e. botanical) will be completed to verify field and data-based observations documented in this Report.

Section 2 Introduction, Background, and Project Understanding

2.1 Purpose and Need

This Biological Reconnaissance and Project Feasibility 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 the initial reconnaissance survey to assess potential presence of biological resources and sensitive habitat(s). This Report has been prepared as a preliminary measure to investigate the impacts of the development and cultivation of cannabis sites within one (1) parcel, referred to throughout this Report as the Study Area. This assessment gives special focus to predetermined areas of known environmental superiority for cultivation, based on terrain, slope, habitat, and preexisting disturbance, referred to as the Area Assessed for Project Feasibility in Map 2-4. 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 Reconnaissance Survey for this project is being treated as a biological assessment. A biological assessment, as defined by the United States Fish and Wildlife Service’s (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 (CNDDDB) list of *Special-Status Plants, Animals and Natural Communities*.

The locations and presence of aquatic resources and other sensitive habitats, within the proximity of the proposed cultivation site(s) 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 cultivation areas 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

2.2 Biologist's Qualifications

The biological assessment for this Report was conducted by Mason London. Mason is the primary biological consultant of Naiad Biological Consulting. Mason holds a Master of Science Degree in Biology with a concentration in aquatic ecology from Humboldt State University. Mason has 11 years of experience working professionally as a botanist, wildlife biologist, aquatic ecological research scientist, and has instructed ecological field and classroom courses at the university level.

The botanical field survey for this project was conducted by Sarah Mason. Sarah is a contracted botanist who holds a bachelor's degree in Botany with a minor in Wildland Soil Science from Humboldt State University. She is currently working towards receiving her MSc in Biology with a concentration in pollination ecology. Sarah has worked as an assistant botanist and biologist with Caltrans, as well as a botanical technician for the Klamath National Forest and Bitterroot National Forest. She has experience in bumblebee identification and teaching plant taxonomy at the university level.

2.3 Study Area Description and Geographic Setting

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

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

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 within one (1) parcel, based on available spatial data, habitat requirements, and observations made during a single site visit. A proposed 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. In this regard, habitat quality directly relates to the distribution of individuals in space and influences the potential for resource acquisition. Habitat modification, both positive and/or negative, refers to the changes in habitat quality, which can induce changes in species acquisition of resources. Other proposed project related aspects, such as irrigation source, site location and cultivation methods were assessed in terms of ecological and biological impact.

The parcel assessed for the feasibility of cannabis cultivation, referred to as the Study Area, in this Report has an Assessor's Parcel Number (APN) of 107-106-006 (Map 1- 4).

APN: 107-106-006 is 39.14 acres (per Humboldt WebGIS) with a high elevation of approximately 770 ft (approx. 235 meters) and a low elevation of approximately 450 ft (approx. 137 meters) (Google Earth Pro, 2020). The approximate center location of this parcel is 40°13'25.3"N 124°06'56.9"W and located approximately 1.40 air miles south to southeast east of Honeydew, California in Humboldt County (Map 1). The Study Area occurs within the Honeydew 7.5-minute USGS quadrangle (Quad code: 4012421) within both the Bear Trap Creek and Honeydew Creek watershed. Bear Trap Creek is a tributary of Honeydew Creek which is a tributary of the Mattole River which is a coastal river draining into the Pacific Ocean near Petrolia, California, approximately 13.60 air miles west to northwest of the center location of the Study Area (CDFW Region: 1).

APN: 107-106-006 is zoned as Agriculture Exclusive (AE) which has a conditionally permitted use that requires that "[t]he proposed use will not impair the continued agricultural use on the subject property or on adjacent lands of the economic viability of agricultural operations on the site," (Humboldt County Code Zoning Regulations: Title III Land Use and Development - Section 314-7.3³). The current general plan for this parcel is Agricultural Grazing (AG) and according to the Humboldt County General Plan, "[r]esidential uses must support agricultural operation" (Chapter 4 Land Use Element: Section 4.8 Land Use Designations, Humboldt County General Plan, 2017⁴).

³ Humboldt County Code – Zoning Regulations: <https://humboldt.gov/DocumentCenter/View/4029/Humboldt-County-Zoning-Regulations-PDF?bidId=>

⁴ Humboldt County General Plan: <https://humboldt.gov/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 (CNDDDB 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 Honeydew 8-quad area. Animals on the CNDDDB list were primarily included based on state or federal listing status or CDFW designation. Native pollinators found in the area were also included based on the state rarity and their potential to be affected by cannabis cultivation.

The special status species in the 7.5-minute USGS Honeydew quadrangle, and the seven (7) adjacent quadrangles (generally this search renders eight (8) adjacent quadrangles, but the Honeydew quadrangle is located near the Pacific Ocean and therefore there are no quadrangles to the southwest), resulted in forty-one (41) special-status animal species (5 amphibians, 8 birds, 1 crustacean, 6 fishes, 2 insect, 15 mammals, 3 mollusks, 1 reptile) (Table 1), twenty-eight (28) special-status plant (1 lichen, 27 vascular) (Table 2), and one (1) terrestrial special status habitat community (Upland Douglas Fir Forest) (Table 3).

3.2 Biological Resource and Habitat Investigation

A biological resource and habitat investigation was conducted within the Study Area between 12:30 and 14:00 on March 16, 2021 by Mason London and Sarah Mason (Map 3). The temperature was 54° Fahrenheit and the weather was sunny and clear. There had been heavy rainfall in the weeks prior to the site visit.

The goal of the investigation and field survey was to determine suitable habitat for special-status species, and therefore potential impact to these species, within the Study Area and with special focus to the area determined to be feasible for cultivation development. Impact to potentially occurring special-status species was assessed based on the likelihood for the project, and project related activities, to result in *take*, or *incidental take*, of the previously mentioned species (Table 1 & 2). The Federal Endangered Species Act (FESA) defines *take* as any action that will "...[h]arass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C., §1532 (19)). Whereas *harass* is defined as "[a]n intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns (e.g., breeding, feeding, or sheltering)" (16 U.S.C., §1532 (20); 50 C.F.R. § 17.3) and *harm* is defined as "[a]n act which actually kills or injures wildlife. May include significant habitat modification or degradation that kills or injures wildlife by significantly impairing essential

behavior patterns,” (U.S.C., §1532 (20); 50 C.F.R. § 17.3.1). The Study Area habitat and habitat characteristics were investigated and assessed based on these impact parameters.

As part of the initial reconnaissance of the Study Area’s biological resources, suitable habitat for potential species was inspected during the field survey. A meandering, or wandering transect, approach to the survey was implemented in order to cover all habitats that could potentially be utilized by listed species. This survey path was recorded using Avanza Maps™ (Map 4).

An assessment of potential occurrences of special-status animal species was recorded during the meandering survey throughout the Study Area. All major habitats within the Study Area were investigated in order to determine current quality in context of species acquisition. The assessment of animal habitat within the Study Area is not an official protocol-level survey, which may be required for project approval by local, state, or federal agencies. Specific wildlife surveys may be required based on the specific location and timing of project development.

Dominant species in surrounding habitats, presence of sensitive habitats such as riparian areas and potential wetland features, and project site setbacks from watercourses and other aquatic habitats were observed and recorded. These observations were used to determine the most suitable and environmentally superior location(s) to potentially cultivate cannabis within the Study Area. A TruPulse 200X laser rangefinder was used to make all of the distance and slope measurements and for determining adequate setbacks in the field. True buffers and setbacks, used in all of the maps associated with this Report were generated with GIS software out of the field.

3.2.1 Floristic Survey

During this initial site visit, qualified botanist Sarah Mason, completed the first set of the seasonally appropriate protocol-level botanical field surveys for special-status plants species. More site visits, at the seasonally appropriate time, are needed before this protocol-level botanical field survey can be considered complete.

The botanical field survey followed protocols recommended by CDFW, and are in accordance with the guidelines established by CNPS, from the document *Protocols for Surveying and Evaluating Impacts to Specie Status Native Plant Populations and Sensitive Natural Communities*⁵ (CDFW, 2018). Plants were identified onsite and a census of species was recorded. Specimens not readily identifiable were collected and keyed out later with the use of The Jepson Manual of the California Flora and other field guides by Sarah. Due to the size and shape of the Study Area, a wandering transect approach to survey the Study Area a was implemented in order to cover all potential occurring species within the habitats surveyed, and to make sure to survey the project site, as well as a 200 ft buffer.

⁵ Survey Protocol: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>

The survey was floristic in nature, meaning that all plant taxon encountered during the botanical field survey of the Study Area was identified to the taxonomic level necessary to determine rarity and listing status. The field visit was planned to coincide with the blooming period for the early season sensitive listed species assumed to have a potential presence at the Study Area, specifically within the boundaries of the project site. Ranking for the potential of occurrence for each species within the project site was evaluated based on the criteria presented in *Section 3.2.3 Occurrence of Special-Status Species*.

3.2.2 Wetland 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 but not limited to the USFWS National Wetland Inventory (NWI), NRCS Web Soil Survey, USGS topographic maps, and inundation or saturation visible on aerial imagery (Map 4). Data regarding the Study Area's soil type was obtained from the Natural Resource Conservation (NRCS) Service Web Soil Survey (Map 4; Appendix E). This preliminary assessment aided in the selection of test pit (TP) sampling locations, as well as observed field conditions, to determine the potential presence of wetlands.

Each TP location was evaluated for the presence of hydrophytic vegetation, hydric soil indicators, and wetland hydrology indicators. Due to the seasonal timing of the site visit, the main indicator used for identifying potential wetland areas was hydric soils. Field observations of identifiable plant communities were also used to assist interpretation of aerial imagery in defining potential wetland areas and their boundaries. This preliminary assessment, accompanied by observed field conditions to determine the potential presence of wetland features, aided in the determination of feasibility for the proposed project to occur within the areas assessed. The "err on the side of caution" approach to determining potential wetland habitats was implemented when visually assessing the site and determining setbacks. The assessment of wetlands within the Study Area described in this Report is not an official protocol-level survey, which may be required for project approval by local, state, or federal agencies.

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 Habitat, Existing Site Conditions and Project Location Feasibility

The main habitats investigated within the Study Area consist of mixed evergreen forest, open chaparral habitat, and a few portions of watercourses (Map 6). The Area Assessed for Project Feasibility includes an area that has previously been utilized for cannabis cultivation, but is being proposed to expand (Map 2). These habitats were assessed based on habitat quality parameters in relationship to previous habitat modification. These areas were also assessed based on the potential to harbor special-status species.

4.1.1 Mixed Evergreen Forest

The mixed evergreen forest habitat makes up approximately 30% of the parcel and predominantly surrounds the Study Area (Map 2 - 6). The dominant species observed within this habitat are Douglas fir (*Pseudotsuga menziesii*), tanoaks (*Notholithocarpus densiflorus*) and Canyon live oak (*Quercus chrysolepis*). The dominant understory species consisting of Himalayan blackberry (*Rubus armeniacus*), and poison oak (*Toxicodendron diversilobum*) (Photo 1 - 2). Species mentioned here are to portray the habitat type and are not intended to represent a complete floristic inventory of the habitat's flora.

There are no anticipated impacts to the mixed evergreen forest habitat in association with the proposed project, if the project development and construction follows the recommendations presented in Section 5.1.3.

4.1.2 Open Chaparral Habitat

The open chaparral habitat dominates the parcel and is primarily comprised of immature Douglas fir (*Pseudotsuga menziesii*), coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*) and many native and nonnative forb and grass species (Map 2 - 6; Photo 3). Species mentioned here are to portray the habitat type and are not intended to represent a complete floristic inventory of the habitat's flora.

There are no anticipated major impacts to the open chaparral habitat in association with the proposed project, if the project development and construction follows the recommendations presented in Section 5.1.3.

4.1.3 Area Assessed for Project Feasibility

The Area Assessed for Project Feasibility (Map 2 - 5), consist of two (2) preexisting flats (Map 2) and are clear of trees and other forest vegetation as a result of natural and preexisting circumstances. All cannabis cultivation is proposed to occur within these two (2) areas, referred to as Area 1 and Area 2 in Map 2 - 5 (Photo 4 and 5). A complete list of the flora able to be identified during the initial

reconnaissance survey of the project area is listed in Table 4. The cannabis at these sites will be cultivated following light deprivation methods and will not utilize generators for power. Since cannabis cultivation has been preexisting at this site, it is not likely that any new development will occur that will negatively impact or alter the surrounding environment than already has. The applicant will mitigate all light pollution from the cultivation site by completely covering green houses, or hoop houses, when artificially lit. Since generators will not be utilized for this operation, there is no noise pollution that will be created from this operation, except from the use of greenhouse Snap-Fans, but these will comply with the ambient noise standards set forth by the County of Humboldt.

Due to the level of previous disturbance and degradation that has occurred at these sites, and since all indirect impacts are capable of mitigation, there is no foreseeable impacts associated with the proposed project occurring within the Area Assessed for Project Feasibility, if the project development construction follows the recommendations presented in *Section 5.1.3*.

4.1.4 Watercourses, Aquatic Habitats, and Streamside Management Areas

There is a mapped watercourse (Bear Tap Creek) that bisects the western portion of the Study Area (Map 3). However, as a result of to the proximity this watercourse exists to the proposed project sites, it was not further investigated since there are no anticipated impacts to this habitat associated to the proposed project. As a result of knowledge of the local hydrology, it is expected that this watercourse is likely a Class II and would only require a 100 ft buffer. However, the most conservative buffer for a watercourse is 150 ft 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*⁶, and the Areas Assessed for Project Feasibility occur well outside of this setback, ultimately protecting this aquatic resource within the Study Area.

There is a Class III watercourse that was observed during the site visit that occurs between Area 1 and Area 2 and flows along the parcel's driveway (Photo 6; Map 3). 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 Protection⁷), which defines a Class III watercourse as having "[n]o aquatic life present. Capable of sediment transport to a Class I or Class II under normal water flow conditions. Usually flows only in response to storms." This watercourse flows north and ultimately connects to Honeydew Creek outside of the Study Area. There is a stream crossing that was observed on the boundary of the Study Area, but is not utilized for any project realized activities (Map 3).

⁶ State Water Resources Control Board: *Cannabis Cultivation Policy Principles and Guidelines for Cannabis Cultivation*: https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

⁷ 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>

Located near Area 2 is an irrigation pond within the Study Area (Map 3). Due to ponds abilities to harbor invasive species such as American bullfrogs (*Lithobates catesbeianus*), the applicant will need to comply with the requirements described in CDFW's Bullfrog Management Plan⁸, and with the recommendations presented in *Section 5.1.3*.

There is no anticipated impact to these habitats in association with the proposed 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*.

4.1.5 Potential Wetland Habitats

A protocol-level wetland delineation did not occur in conjunction with this Biological Reconnaissance and Project Feasibility Assessment. However, with the use of visual observations of the potential project sites, and mapped wetland occurrences from the NWI, hydrology and vegetation within site boundaries was assessed (Map 4). Two (2) TPs were dug to in the most suspect areas within a reasonable proximity to the potential project areas, and both TPs rendered no hydric soils (Photo 7 & 8; Map 3). It is unlikely that wetland habitats occur within any proximity of impact of the proposed project site locations. A protocol-level wetland determination may be required within the proximity of these sites for project approval by state and local agencies, but is not recommended based on field and satellite imagery observations.

4.2 Special-Status Plant Species

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 CNDDDB list were assessed for potential occurrence within the Study Area, both within the potential project locations, and within the surrounding habitats (Table 2).

Only one (1) special-status plant species was encountered during the initial botanical survey site visit. This species is Alaska cedar (*Callitropsis nootkatensis*), and was obviously planted in its location as an ornamental. Furthermore, this species has a California Rare Plant Rank (CRPR) of 4.3. Plants with a CRPR of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly, however, the ".3" denotes that this species is not very threatened in California with less than 20% of occurrences threatened or with a low degree and immediacy of threat or no current threats known. Because of this species rank, and the fact that it was obviously planted on purpose, there is no potential impact or take to this resource in association with the proposed project expansion. No naturally occurring special-status plant species were observed within

⁸ California Aquatic Invasive Species Management Plan: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3868>

the Study Area during the biological assessment site visit, nor are there any recorded occurrences within the CNDDDB (Map 7).

Complete results of the early season survey are presented in Table 4. Certain species observed were unidentifiable during this initial site visit due to the bloom period of the individual species, but will be identified and recorded during the next site visit. As previously mentioned, more site visits are required throughout the year, at the seasonally appropriate time, for this protocol-level botanical survey to be considered complete.

If the findings from the protocol-level botanical survey render no special-status species, aside from (*Callitropsis nootkatensis*) occurring within the project site boundaries, and the recommendations presented in *Section 5.1.3* are followed for the development and utilization of these sites, 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 environment or biological resources are likely to occur at Area Assessed for Project Feasibility.

4.3 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 primarily consist of the habitats that were determined to be feasible areas for the development of cultivation and associated project 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 CNDDDB list were assessed for potential occurrence within the Study Area, both within the potential project locations, and within the surrounding habitats (Table 1). No special-status animal species were observed within the Study Area during the biological assessment site visit, nor are there any recorded occurrences within the CNDDDB (Map 7).

There is determined to be moderate potential habitat to harbor three (3) special-status animal species within the areas assessed for project feasibility. Other species, such as birds or bats were determined to likely utilize the project site's air space for flying over and/or the ground area for hunting and foraging. However, none of these species would utilize the project site for nesting or shelter due to the lack of canopy cover and other habitat characteristic. It is not expected that these species will be dramatically impacted by the proposed project if the recommendations in *Section 5.1.3* are observed, and due to the abundance of similar habitat within the Study Area that will not be altered or impacted by the proposed project. Furthermore, the areas surrounding the Area Assessed for Project Feasibility could likely harbor other special-status and listed species, but if the proper mitigation occurs, as recommended in *Section 5.1.3*, impact and/or take of these species can be avoided.

The three (3) special-status species with potential to utilize the proposed project site, and the Area Assessed for Project Feasibility, include western bumblebee (*Bombus occidentalis*), North American porcupine (*Erethizon dorsatum*), and American badger (*Taxidea taxus*).

Western bumblebee (*Bombus occidentalis*) is widely distributed in California and is known to pollinate a wide variety of flowering plants. This species lives in abandoned burrows and cavities and potential nesting locations may exist within the suitable areas for project development. Due to the project area's habitat quality, and due to the abundant suitable habitat within the Study Area that will not be impacted by the project, it is unlikely that there would be a significant loss of nesting habitat as a result of project development. Furthermore, it is unlikely that the potential project development would result in a significant decrease in forage material. It is not anticipated that the project will negatively impact this species.

North American Porcupine (*Erethizon dorsatum*) 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 the open field habitat. Also, the frequent human activity that occurs within the Study Area likely results in *Erethizon dorsatum* not utilizing the site. It is not anticipated that the project will negatively impact this species.

American badger (*Taxidea taxus*) is most abundant in drier open stages of most shrub, forest, and herbaceous habitats. *Taxidea taxus* requires sufficient food, friable soils (soils with a crumbly texture) and open, uncultivated ground. This species preys on burrowing rodents and digs burrows. Even though there was no visual evidence of *Taxidea taxus* activity within the open chaparral habitat, this habitat is suitable for this species.

One of the main prey species of *Taxidea taxus* are pocket gophers (*Thomomys monticola* and *T. bottae*). It has been shown that *Thomomys monticola* and *T. bottae* densities are significantly higher in grazed meadows than ungrazed meadows (Powers et al. 2011). Therefore, there is a direct correlation to grazed pasture habitats and suitable habitat for *Taxidea taxus*. It is unclear if the Study Area has been grazed recently, but regardless, the percentage of land that is proposed to be converted to cannabis cultivation will likely not create a significant loss to the surrounding *Taxidea taxus* habitat (Map 2c). The suitable habitat surrounding the cultivation area will likely maintain suitable habitat for *Taxidea taxus* to forage.

Though the habitat of the potential project area is suitable for *Taxidea taxus*, the amount of development that would occur in association with the cannabis cultivation makes it likely that this species would not continue to utilize the project site for burrowing and hunting if already present. Recommendation to avoid take of this species are explained in *Section 5.1.3 Recommendations*. The surrounding suitable habitat is not to be disturbed in anyway related to proposed project activities and therefore this species is still capable of existing within the Study Area without a negative impact.

Furthermore, depending on the cultivation methods utilized, all noise and light pollution will be mitigated and will therefore not disrupt the nocturnal life history of this species.

4.3.1 Other Special-Status Animal Species

The nearest known **northern spotted owl (*Strix occidentalis caurina*)** Activity Center (HUM0530), according to the most up to date CNDDDB Spotted Owl Viewer, is approximately 2.20 air miles southeast of the nearest boundary of proposed cultivation sites (Map 8; Occurrence Report 1). 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). The Study Area is not dominated by this species preferable forest type and is therefore not likely utilized for nesting or roosting by northern spotted owl (Photo 1 & 2). Surrounding the Study Area, 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.

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 potential cultivation sites will have cultivation methods that will mitigate all noise and light pollution, there is no expected disruptions towards essential breeding activities or any activities that may injure or harm this species, or any other species, related to this project. There will be no need for generators since the parcel is connected to PG&E grid power, and the client can avoid light pollution by completely covering greenhouses when artificially lit, if this method of cultivation is to be pursued.

4.4 Special Status Habitat Communities

The one (1) special-status habitat communities identified in the CNDDDB BIOS search in the 7.5-minute USGS Brice land quadrangle, and the 8 adjacent quadrangles is the Upland Douglas Fir Forest.

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 (*Pseudotsuga menziesii*) individuals 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). A more thorough investigation of the surrounding habitat to the Area Assessed for Project Feasibility may determine that the forested habitat within the Study Area meets this definition, since the presence of *Pseudotsuga menziesii* may be 50% dominance, but given the proposed cultivation methods associated with this project, there are no anticipate impacts to any forested habitat in anyway.

Section 5 Conclusion

5.1 Potential Impacts and Recommended Mitigation

5.1.1 Potential Direct Impacts

Direct impacts are considered to be effects that may occur to the environment from direct interface with proposed action. The Biological Reconnaissance and Project Feasibility Assessment of the Study Area resulted in locations that have been determined to be suitable sites for cannabis cultivation based on the preexisting habitat type and quality, observed species, and the locations setbacks from sensitive habitats. These locations have been established as a means to minimize or negate the potential for direct impact to occur to the environment from direct interface with the project development.

If potential project related activities occur at the locations defined in Map 2 - 5, there will likely be no negative impacts to sensitive habitats, or severely alter the already disturbed habitat quality of the site, any more than already has been by historic land alteration. In regards to direct impacts to the site, a protocol-level botanical survey will need to be completed prior to any development in this location in order to determine potential significant impacts. Given the preexisting disturbance to this site, and the fact that no sensitive vegetation is to be removed within and surrounding the Study Area, the effects of the project to the environment can be mitigated and no significant adverse effects to biological resources can be achieved if the actions associated with this project follow the recommendations listed in *Section 5.1.3*.

As a result of the abundance of invasive and nonnative species on the parcel and within the potential project site, the client is capable of improving the surrounding environment and habitat by removing these invasive species during the project site development process, and ultimately halting their spread. Because of these factors, the activities associated with the cultivation at the proposed sites would only potentially have direct impacts as disturbance-based.

Common disturbance-based impacts associated with cannabis cultivation include noise and light pollution. For the potentially proposed projects, no continuous noise (above 70 dB to the nearest tree line) or light is to be generated in association with this project. These disturbance-based impacts can be mitigated since the parcel comprising the Study Area is connected to PG&E grid power, avoiding the need for noise producing generators, and if the cultivation method proposed requires artificially lighting greenhouses, they shall be completely covered when lit to avoid any potential for light pollution. Therefore, there will be no expected disturbance-based impacts to the surrounding wildlife or habitats.

5.1.2 Potential Indirect Impacts

If best management practices are followed, there are no foreseeable indirect impacts associated with this project to the environment, surrounding habitat, or wildlife.

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 contaminants from entering the surrounding terrestrial environment. 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)⁹. 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 contaminants and sediment movement towards Bear Trap Creek, Honeydew Creek, and other 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. 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 (Area 1 and Area 2) within this Report. 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*¹⁰ (CDFW, 2018).
- It is recommended that during the time of project site development, the client 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

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

¹⁰ Botanical Survey Protocol: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>

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 projects proximity to nesting bird habitat, such as the riparian corridors identified within the Study Area. 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.

- All cultivation material outside of the Project Areas, as well as all trash within and outside of the Project Areas, needs to be removed from the area in order to avoid disturbance to surrounding wildlife, habitats and the environment.
- Due to the presence of a pond within the Study Area, the client shall comply with the protocols addressed in the CDFW Bullfrog Management Plan
- The client should survey the site before any ground disturbance for borrows 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.
- 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) site visit and may not be seasonally appropriate for all conclusive results.

Deficiencies in these findings may result from the following:

- The floristic survey conducted at the time of the site visit investigation does not represent a completed protocol-level survey. Follow up site visit surveys, at the seasonally appropriate times, following the CDFW floristic survey protocol, are required before this survey can be considered complete.
- The assessment of habitat utilization within the Study Area, by special-status animal species, was based upon the observations made during a single site visit and further studies and surveys may be required for project approval by local, state or federal agencies as well.
- The parcel boundaries displayed in the maps created for this Report do not represent a boundary survey. Parcel and property lines shown within these maps are approximated and were acquired from Humboldt County Web GIS, and any errors within these boundaries are a result of errors in Humboldt County's GIS database.
- This Report is not intended to be a complete biological survey report for all species generated from the CNDDDB, but rather an initial reconnaissance and feasibility assessment based on present biological conditions.
- It has been assumed that prior to implementation of this project, protocol-level surveys 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 3 and 4, only represent buffers to biological resources and do not included cultural resources (i.e., 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 1601 to 1603 of the Fish and Wildlife Code. The Fish and Wildlife Code requires a Stream Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body.

Section 7 References

- Bishop, Sherman C. Handbook of Salamanders. Cornell University Press, 1943.
- Breanna Powers, Matthew D. Johnson, Joseph A. LaManna, and Adam Rich "The Influence of Cattle Grazing on Pocket Gophers in the Central Sierra Nevada Mountains, California: Potential Implications for Great Gray Owls," *Northwestern Naturalist* 92(1), 13-18, (1 March 2011). <https://doi.org/10.1898/10-13.1>
- Buck, Slader G.; Mullis, Curt; Mossman, Archie S.; Show, Ivan; Coolahan, Craig. 1994. Habitat use by fishers in adjoining heavily and lightly harvested forest. In: Buskirk, Steven W.; Harestad, Alton S.; Raphael, Martin G.; Powell, Roger A., eds. *Martens, sables, and fishers: Biology and conservation*. Ithaca, NY: Cornell University Press: 368-376. [65918]
- Burns, Timothy S. 1974. Wildlife situation report and management plan for the American osprey. Coordinating Guidelines for Wildlife Habitat Management No. 1. Hamilton, MT: U.S. Department of Agriculture, Forest Service, Northern Region, Bitterroot National Forest. 6 p. [20008]
- Cadman, Michael D.; Eagles, Paul F. J.; Helleiner, Frederick M. 1987. Atlas of the breeding birds of Ontario. University of Waterloo Press. 617 p. [20129]
- California Department of Fish and Wildlife. 2018 "Biogeographic Information and Observation System" (BIOS) Accessed December 2019 <https://map.dfg.ca.gov/bios/>
- California Department of Fish and Wildlife. 2020 "California Natural Diversity Database" (CNDDDB) Accessed February 2020 <https://www.wildlife.ca.gov/Data/CNDDDB>
- California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 11 June 2020].
- Coulter, Malcolm Wilford. 1966. Ecology and management of fishers in Maine. Syracuse, NY: Syracuse University. 183 p. Dissertation. [63950]
- DeGraaf, Richard M.; Scott, Virgil E.; Hamre, R. H.; [and others]. 1991. Forest and rangeland birds of the United States: Natural history and habitat use. *Agric. Handb.* 688. Washington, DC: U.S. Department of Agriculture, Forest Service. 625 p. [15856]
- Easter, J (2004). California Vegetation/Wildlife Habitat Regions. Accessed June 2020
- Goebel, A. M., T. A. Ranker, P. S. Corn, & R. G. Olmstead. 2009. Mitochondrial DNA evolution in the *Anaxyrus boreas* species group. *Molecular Phylogenetics and Evolution* 50(2009) 209-225. Available at: http://www.cnah.org/cnah_pdf.asp
- Google Earth Pro 2020 Accessed December 2020
- Hollingsworth, B. D. 1998. The systematics of chuckwallas (*SAUROMALUS*) with a phylogenetic analysis of other iguanid lizards. *Herpetological Monographs* (12):38-191.
- Holman, J.A. & U. Fritz. 2001. A new emydine species from the Medial Miocene (Barstovian) of Nebraska, USA with a new generic arrangement for the species of *Clemmys* sensu McDowell (1964) (Reptilia: Testudines: Emydidae). *Zoologische Abhandlungen Staatliches Museum für Tierkunde Dresden* 51(19)321-344. Available at: http://www.cnah.org/cnah_pdf.asp
- <https://www.fs.fed.us/r6/sfpnw/issssp/documents3/ca-ig-helminthoglypta-hertleini-201504-508.pdf>
- https://www.fws.gov/oregonfwo/species/data/northernspottedowl/Documents/2011_5yrReview.pdf
- <https://www.fws.gov/wafwo/species/Fact%20sheets/CoastalCutthroatTrout.pdf>
- Jimerson, T. M., & Daniel, S. L. (1996). A field guide to the Tanoak and the Douglas-fir plant associations in northwest California. Washington, D.C.: United States Dept. of Agriculture, Forest Service, Pacific Southwest Region.
- Jones, Jeffrey L. 1991. Habitat use of fisher in northcentral Idaho. Moscow, ID: University of Idaho. 147 p. Thesis. [63964]
- Jones, Lawrence L. C., William P. Leonard, Deanna H. Olson, editors. *Amphibians of the Pacific Northwest*. Seattle Audubon Society, 2005.
- Legal Information Institute [LII]. Cornell Law School. Accessed February 2020 <https://www.law.cornell.edu/cfr/text/33/328.3>
- Life history accounts for species in the California Wildlife Habitat Relationships (CWHR) System were originally published in: Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. *California's Wildlife*. Vol. I-III. California Department of Fish and Game, Sacramento, California. Updates are noted in accounts that have been added or edited since original publication.
- Mathisen, John E. 1968. Identification of bald eagle and osprey nests in Minnesota. *Loon*. 40(4): 113-114. [13996]
- MesoWest. The University of Utah: Department of Atmospheric Sciences. Access January 2020 https://mesowest.utah.edu/cgi-bin/droman/meso_base_dyn.cgi?stn=ERCC1&time=GMT
- Multiquip DCA20SPXU4F. Accessed March 2020 from <https://www.multiquip.com/multiquip/DCA20SPXU4F.htm#no-jump>
- Municipal Codes. (2001). Retrieved February 2020, from https://qcode.us/codes/pointarena/view.php?topic=18-18_20-18_20_050&frames=on
- Polite C. Kiff L, editor. 1990. Spotted Owl. *California's Wildlife Vol I-III*. California Department of Fish and Wildlife, Sacramento, California.
- Poole, Alan F. 1989. *Ospreys: a natural and unnatural history*. Cambridge; New York: Cambridge University Press. 246 p. [20133]

- Powell, Robert., Joseph T. Collins, and Errol D. Hooper Jr. A Key to Amphibians and Reptiles of the Continental United States and Canada. The University Press of Kansas, 1998.
- Power Equipment: Honda, EM4000S. Accessed March 2020, from <https://powerequipment.honda.com/generators/models/em4000>
- Roy, Kevin D. 1991. Ecology of reintroduced fishers in the Cabinet Mountains of northwest Montana. Missoula, MT: University of Montana. 94 p. Thesis. [64013]
- Stebbins, Robert C. A Field Guide to Western Reptiles and Amphibians. 3rd Edition. Houghton Mifflin Company, 2003.
- U.S. Fish and Wildlife Service (2019) "Information Planning and Conservation System" (IPAC) Accessed December 2019
<https://ecos.fws.gov/ipac/>
- U.S. Fish and Wildlife Services. 2006. Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California.
- U.S. Fish and Wildlife Services. 2012. Northern Spotted Owl Survey protocol: Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.
- Verner, Jared; Boss, Allan S., tech. coords. 1980. California wildlife and their habitats: western Sierra Nevada. Gen. Tech. Rep. PSW-37. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Forest and Range Experiment Station. 439 p. [10237]

Appendix A

Photo Documentation

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Nava Ranch, Inc.
Assessor Parcel Number (APN):
APN: 107 – 106 – 006

March 2021



Photo 1. The mixed evergreen forest habitat surrounding the Study Area. Photo taken west of Area 1 facing northwest down Bear Trap Creek.



Photo 2. The mixed evergreen forest habitat surrounding the Study Area. Photo taken south of Area 1 facing south up Honeydew Creek.



Photo 3. The open chaparral habitat dominating the Study Area. Photo taken east of Area 1, between Area 1 and Area 2 facing northeast down Honeydew Creek.



Photo 4. The preexisting cultivation infrastructure located in Area 1.



Photo 5. Area 1 from the south facing north.



Photo 6. The Class III watercourse located between Area 1 and Area 2.



Photo 7. The non-hydric soil of TP 1.



Photo 8. The non-hydric soil of TP 2.

Appendix B

Tables

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Nava Ranch, Inc.

Assessor Parcel Number (APN):

APN: 107 – 106 – 006

March 2021

Table 1 – Special-Status Animal Species – Honeydew and surrounding 7.5 min quadrangles – March 2021 – APN: 107 – 106 – 006

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	Habitats	Potential of Occurrence
Amphibians						
<i>Ascaphus truei</i>	Pacific tailed frog	None	None	SSC	Inhabits cold, clear, permanent rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for protective cover for adults, eggs, and larvae. After heavy rains, adults may be found in the woods away from the stream.	None in Project Area. None is surrounding area.
<i>Rana aurora</i>	northern red-legged frog	None	None	SSC	inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the Coast Ranges from Del Norte County to Mendocino County, usually below 1200 m (3936 ft).	None in Project Area. Moderate is surrounding area.
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	SSC	found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types.	None in Project Area. Moderate is surrounding area.
<i>Rhyacotriton variegatus</i>	southern torrent salamander	None	None	SSC	This species occurs in cold, well-shaded permanent streams and seepages in shady coastal forests.	None in Project Area. None is surrounding area.
<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	Broadleaved upland forest North coast coniferous forest Redwood Riparian forest Riparian woodland. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	Low in Project Area, Moderate in surrounding area.
Birds						
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	A breeding resident throughout most of the wooded portion of the state. Breeds in southern Sierra Nevada foothills, New York Mts., Owens Valley, and other local areas in southern California. Ranges from sea level to above 2700 m (0-9000 ft). Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently.	Moderate in Project Area (flyover), Moderate in surrounding area.
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	Ranges from sea level up to 3833 m (0-11,500 ft) (Grinnell and Miller 1944). Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert.	Moderate in project area (flyover). Moderate in adjacent area.
<i>Brachyramphus marmoratus</i>	marbled murrelet	Threatened	Endangered	-	requires dense, mature forests of redwood and Douglas-fir for breeding (Cogswell 1977, Remsen 1978). In California, probably prefers to nest in tall trees; nest made of moss and lichen. In summer, individuals or pairs commonly seen 1-2 km (0.6 to 1.2 mi) off the coast, and typically 6-8 km (4-5 mi) inland in coniferous forests (Cogswell 1977).	None in Project Area, None in surrounding area.
<i>Ardea herodias</i>	great blue heron	None	None	-	The great blue heron is fairly common all year throughout most of California, in shallow estuaries and fresh and saline emergent wetlands. Less common along riverine and rocky marine shores, in croplands, pastures, and in mountains above foothills.	None in Project Area, Low in surrounding area

<i>Pandion haliaetus</i>	osprey	None	None	WL	Riparian forest. Ocean shore, bays, lakes and larger freshwater streams.	Low in project area (flyover). Low in adjacent area.
<i>Felecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	FP	Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None in Project Area, None in surrounding area
<i>Asio otus</i>	long-eared owl	None	None	SSC	Cismontane woodland Great Basin scrub Riparian forest Riparian woodland Upper montane coniferous forest. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	Low in project area (flyover). Moderate in adjacent area.
<i>Strix occidentalis caurina</i>	Northern Spotted Owl	Threatened	Threatened	SSC	Northern spotted owls typically nest or roost in multilayered, mature coniferous forest with high canopy closure, large overstory trees, and broken-topped trees or other nesting platforms (USFWS 2012). Confirmed breeding areas are widespread throughout Humboldt County (Hunter et al. 2005). Northern spotted owls may use a broad range of habitats for foraging. Their favored prey, the dusky-footed woodrat (<i>Neotoma fuscipes</i>), typically inhabits the forest edge (Harris 2005).	Low in project area (flyover). Low/Moderate in adjacent area.
Crustaceans						
<i>Pacifastacus leniusculus klamathensis</i>	Klamath crayfish	None	None	-	Aquatic species that requires substrate that allows for adequate burrowing. Even though specific habitat requirements is not available for this particular species, habitat for crayfish is primarily separated according to each species' burrowing ability. All crayfish are able to burrow to some extent and this ability will help determine the range of habitats in which a species can be found.	None in Project Area, Low in surrounding area
Fishes						
<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	Aquatic, Klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in Project Area. None is surrounding area.
<i>Oncorhynchus kisutch</i> pop. 2	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	-	Aquatic, Klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in Project Area. None is surrounding area.
<i>Oncorhynchus kisutch</i> pop. 4	coho salmon - central California coast ESU	Endangered	Endangered	-	Aquatic, Klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in Project Area. None is surrounding area.
<i>Oncorhynchus mykiss irideus</i> pop. 16	steelhead - northern California DPS	Threatened	None	-	Aquatic, Klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in Project Area. None is surrounding area.
<i>Oncorhynchus mykiss irideus</i> pop. 36	summer-run steelhead trout	None	None	SSC	Aquatic, Klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in Project Area. None is surrounding area.
<i>Oncorhynchus tshawytscha</i> pop. 17	chinook salmon - California coastal ESU	Threatened	None	-	Aquatic, Klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in Project Area. None is surrounding area.

Insects									
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	None	None	None	None	Low in Project Area. Moderate is surrounding area.
<i>Bombus occidentalis</i>	western bumble bee	None	None	-	None	None	None	None	Moderate in Project Area. Moderate is surrounding area.
Mammals									
<i>Erethizon dorsatum</i>	North American porcupine	None	None	-	None	None	None	None	Moderate in Project Area. High is surrounding area
<i>Arborimus pomo</i>	Sonoma tree vole	None	None	SSC	None	None	None	None	Low in Project Area. Moderate is surrounding area
<i>Enhydra lutris nereis</i>	southern sea otter	Threatened	Threatened	FP	None	None	None	None	None in Project Area, None in surrounding area
<i>Martes caurina humboldtensis</i>	Humboldt marten	Threatened	Threatened	SSC	Endangered	None	None	None	Low in Project Area. Moderate in surrounding area
<i>Pekania pennanti</i>	fisher - West Coast DPS	None	None	SSC	Threatened	None	None	None	Low in Project Area. Moderate is surrounding area
<i>Taxidea taxus</i>	American badger	None	None	SSC	None	None	None	None	Moderate in Project Area. High is surrounding area
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	None	None	None	None	Moderate in project area (flyover). Moderate in adjacent area.
<i>Lasiorycteris noctivagans</i>	silver-haired bat	None	None	-	None	None	None	None	Moderate in project area (flyover). Moderate in adjacent area.
<i>Lasiurus blossevillii</i>	western red bat	None	None	SSC	None	None	None	None	Moderate in project area (flyover). Moderate in adjacent area.
<i>Lasiurus cinereus</i>	hoary bat	None	None	-	None	None	None	None	Moderate in project area (flyover). Moderate in adjacent area.
<i>Myotis evotis</i>	long-eared myotis	None	None	-	None	None	None	None	Low in project area (flyover). Moderate in adjacent area.

<i>Myotis thysanodes</i>	fringed myotis	None	None	-	pinyon-juniper, valley foothill conifer and hardwood conifer	Low in project area (flyover). Low in adjacent area.
<i>Myotis volans</i>	long-legged myotis	None	None	-	common in woodland and forest habitats above 1200 m (4000 ft). Also forages in chaparral, coastal scrub, Great Basin shrub habitats, and in early successional stages of woodlands and forests.	None due to elevation range.
<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	lower and upper montane conifer and riparian forest and woodland	Low in project area (flyover). Moderate in adjacent area.
Mollusks						
<i>Helminthoglypta arrosa monticola</i>	mountain shoulderband	None	None	-	Known only from the King Range in Humboldt County: Found in talus slopes.	None in Project Area. None is surrounding area.
<i>Anodonta oregonensis</i>	Oregon floater	None	None	-	Prefers lower velocity waters. freshwater lakes and slow-moving streams and rivers	None in Project Area. None is surrounding area.
<i>Anodonta californiensis</i>	California floater	None	None	-	freshwater lakes and slow-moving streams and rivers	None in Project Area. None is surrounding area.
Reptiles						
<i>Emys marmorata</i>	western pond turtle	None	None	SSC	aquatic, flowing waters, standing waters, marsh, swamp, wetland	None in Project Area. Moderate is surrounding area.

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 Statutes (California Endangered Species Act:

Endangered species:

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

Threatened species:

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

Candidate Species:

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

Table 2 – Special-Status Plant Species – Honeydew and surrounding 7.5 min quadrangles – March 2021 – APN: 107 – 106 – 006

Scientific Name	Common Name	Federal Status	State Status	CA Rare Plant Rank	Blooming Period	Habitat	Micro Habitat	Elevation (meters)	Potential of Occurrence
<i>Usnea longissima</i>	Methuselah's beard lichen	None	None	4.2	NA	Broadleafed upland forest; North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers.	50 - 1460 meters	None in project site. Low in surrounding area.
<i>Antennaria suffrutescens</i>	evergreen everlasting	None	None	4.3	Jan-Jul	Lower montane coniferous forest	serpentine	500 - 1600 meters	None due to elevation range.
<i>Erigeron biolettii</i>	streamside daisy	None	None	3	Jun-Oct	Broadleafed upland forest; Cismontane woodland; North Coast coniferous forest	Rocky, mesic	30 - 1100 meters	None in project site. Low in surrounding area.
<i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Tracy's tarplant	None	None	4.3	May-Oct	Coastal prairie; Lower montane coniferous forest; North Coast coniferous forest	openings, sometimes serpentine.	120 - 1200 meters	Low/Moderate in project site. Moderate in surrounding area.
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	None	None	1B.2	Apr-Oct	• Closed-cone coniferous forest • Coastal scrub • Meadows and seeps • Marshes and swamps	openings	60 - 520 meters	Low/Moderate in project site. Moderate in surrounding area.
<i>Lathyrus glandulosus</i>	sticky pea	None	None	4.3	Apr-Jun	Cismontane woodland	NA	300 - 800 meters	None due to elevation range.
<i>Lathyrus palustris</i>	marsh pea	None	None	2B.2	Mar-Aug	• Bogs and fens • Coastal prairie • Coastal scrub • Lower montane coniferous forest • Marshes and swamps • North Coast coniferous forest	mesic	1 - 100 meters	None in project site. Low in surrounding area.
<i>Ribes roezlii</i> var. <i>arnictum</i>	hoary gooseberry	None	None	4.3	Mar-Apr	Broadleafed upland forest; Cismontane woodland; Lower montane coniferous forest; Upper montane coniferous forest	NA	120 - 2300 meters	None in project site. Low/moderate in surrounding area.
<i>Lycopus uniflorus</i>	northern bugleweed	None	None	4.3	Jul-Sep	• Bogs and fens • Marshes and swamps	NA	5 - 2000 meters	None in project site. None in surrounding area.
<i>Erythronium oregonum</i>	giant fawn lily	None	None	2B.2	Mar-Jun	Cismontane woodland	sometimes serpentine, rocky, openings; Meadows and seeps	100 - 1150 meters	None in project site. Low in surrounding area.
<i>Erythronium revolutum</i>	coast fawn lily	None	None	2B.2	Mar-Jul	Broadleafed upland forest; North Coast coniferous forest	Mesic, streambanks; Bogs and fens	0 - 1600 meters	None in project site. Low in surrounding area.
<i>Lilium rubescens</i>	redwood lily	None	None	4.2	Apr-Aug	Broadleafed upland forest; Chaparral; Lower montane coniferous forest; North Coast coniferous forest; Upper montane coniferous forest	Sometimes serpentine, sometimes roadsides.	30 - 1910 meters	Low in project site. Low in surrounding area.
<i>Lycopodium clavatum</i>	running-pine	None	None	4.1	Jun-Aug	Lower montane coniferous forest (mesic); North Coast coniferous forest (mesic)	often edges, openings, and roadsides; Marshes and swamps	45 - 1225 meters	Low in project site. Low in surrounding area.
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	None	None	4.2	(Mar)Apr-Aug	• Broadleafed upland forest • Coastal prairie • Coastal scrub • North Coast coniferous forest	Often in disturbed areas.	0 - 730 meters	Moderate in project site. Moderate in surrounding area.

<i>Sidalcea malviflora</i> <i>ssp. patula</i>	Siskiyou checkerbloom	None	None	1B.2	May-Aug	• Riparian woodland Coastal bluff scrub; Coastal prairie; North Coast coniferous forest	often roadcuts.	15 - 880 meters	Low in project site. Moderate in surrounding area.
<i>Pityopus californicus</i>	California pinefoot	None	None	4.2	May-Aug	Broadleaved upland forest; Lower montane coniferous forest; North Coast coniferous forest; Upper montane coniferous forest	mesic.	15 - 2225 meters	None in project site. Low in surrounding area.
<i>Montia howellii</i>	Howell's montia	None	None	2B.2	Mar-May	North Coast coniferous forest	Vernally mesic, sometimes roadsides; Meadows and seeps; Vernal pools	0 - 835 meters	None in project site. Low in surrounding area.
<i>Clarkia amoena</i> ssp. <i>whitneyi</i>	Whitney's farewell-to-spring	None	None	1B.1	Jun-Aug	• Coastal bluff scrub • Coastal scrub	NA	10 - 100 meters	None in project site. Low/none in surrounding area.
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	None	None	4.3	Jul-Sep	Broadleaved upland forest; North Coast coniferous forest	sandy or rocky.	45 - 1800 meters	Low in project site. Low in surrounding area.
<i>Listera cordata</i>	heart-leaved twayblade	None	None	4.2	Feb-Jul	Lower montane coniferous forest; North Coast coniferous forest	Bogs and fens	5 - 1370 meters	None in project site. Low/none in surrounding area.
<i>Piperia candida</i>	white-flowered rein orchid	None	None	1B.2	May-Sep	Broadleaved upland forest; Lower montane coniferous forest; North Coast coniferous forest	sometimes serpentine	30 - 1310 meters	None in project site. Low/none in surrounding area.
<i>Castilleja littoralis</i>	Oregon coast paintbrush	None	None	2B.2	Jun-Jul	Coastal bluff scrub; Coastal dunes, Coastal scrub	Sandy	15 - 100 meters	None in project site. Low/none in surrounding area.
<i>Calamagrostis foliosa</i>	leafy reed grass	None	Rare	4.2	May-Sep	Coastal bluff scrub, North Coast coniferous forest	rocky	0 - 1220 meters	None in project site. Low/none in surrounding area.
<i>Pleuropogon refractus</i>	nodding semaphore grass	None	None	4.2	Apr-Aug	Lower montane coniferous forest; Meadows and seeps; North Coast coniferous forest	mesic; riparian forest	0 - 1600 meters	None in project site. Low/none in surrounding area.
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	None	None	1B.2	Apr-Aug	Coastal bluff scrub; Chaparral (openings); Coastal prairie; Valley and foothill grassland	NA	5 - 1665 meters	Low in project site. Moderate in surrounding area.
<i>Leptosiphon laisectus</i>	broad-lobed leptosiphon	None	None	4.3	Apr - Jun	Broadleaved upland forest, Cismontane woodland	NA	170 - 1500 meters	Low in project site. Moderate in surrounding area.
<i>Copitis laciniata</i>	Oregon goldthread	None	None	4.2	(Feb)Mar-May(Sep-Nov)	• Meadows and seeps • North Coast coniferous forest (streambanks)	Mesic streambanks.	0 - 1000 meters	None in project site. Low/none in surrounding area.
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	glory brush	None	None	4.3	Mar-Jun(Aug)	• Chaparral	NA	30 - 610 meters	Low in project site. Moderate in surrounding area.

Global Conservation Status Definition

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

G1 Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 Imperiled – At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.

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

Intraspecific Taxon Conservation Status Ranks

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

Subnational (S) Conservation Status Ranks

- S1 Critically Imperiled** – Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.
- S2 Imperiled** – Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.
- S3 Vulnerable** – Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 Secure** – Common, widespread, and abundant in the jurisdiction.

S#S# Range Rank – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

Rank Qualifiers

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

Table 3 – Special-Status Communities – Honeydew and surrounding 7.5 min quadrangles – March 2021 – APN: 107 – 106 – 006

Community Type	Habitat Community
Terrestrial	Upland Douglas Fir Forest

Table 4 – Floristic Species Observed During the Early Season Botanical Survey – March 2021 – APN: 107 – 106 – 006

Habit	Botanical Name	Common Name	Native?	CRPR
Tree				
	<i>Callitropsis nootkatensis</i>	Alaska cedar	Yes	4.3
	<i>Quercus chrysolepis</i>	Canyon live oak	Yes	
	<i>Notholithocarpus densiflorus</i>	Tanoak	Yes	
	<i>Pseudotsuga menziesii</i>	Douglas fir	Yes	
Shrub				
	<i>Baccharis pilularis</i>	Coyote brush	Yes	
	<i>Rubus armeniacus</i>	Himalayan blackberry	No	
	<i>Toxicodendron diversilobum</i>	Poison oak	Yes	
Graminoids				
	<i>Elymus glaucus</i>	Blue wildrye	Yes	
	<i>Poa annua</i>	Annual blue grass	No	
	<i>Cynosurus echinatus</i>	Hedgehog dogtail grass	No	
	<i>Cynodon dactylon</i>	Bermuda grass	No	
Forbs				
	<i>Rumex acetosella</i>	Sheep sorrel	No	
	<i>Trifolium subterraneum</i>	Subterranean clover	No	
	<i>Lupinus sp.</i>	Lupine	Yes	
	<i>Pteridium aquilinum</i>	Bracken fern	Yes	
	<i>Erodium brachycarpum</i>	White stemmed filaree	No	
	<i>Plantago lanceolata</i>	Narrow leaved plantain	No	
	<i>Silybum marianum</i>	Milk thistle	No	
	<i>Hypochaeris radicata</i>	Hairy cats ear	No	

Appendix C

Maps

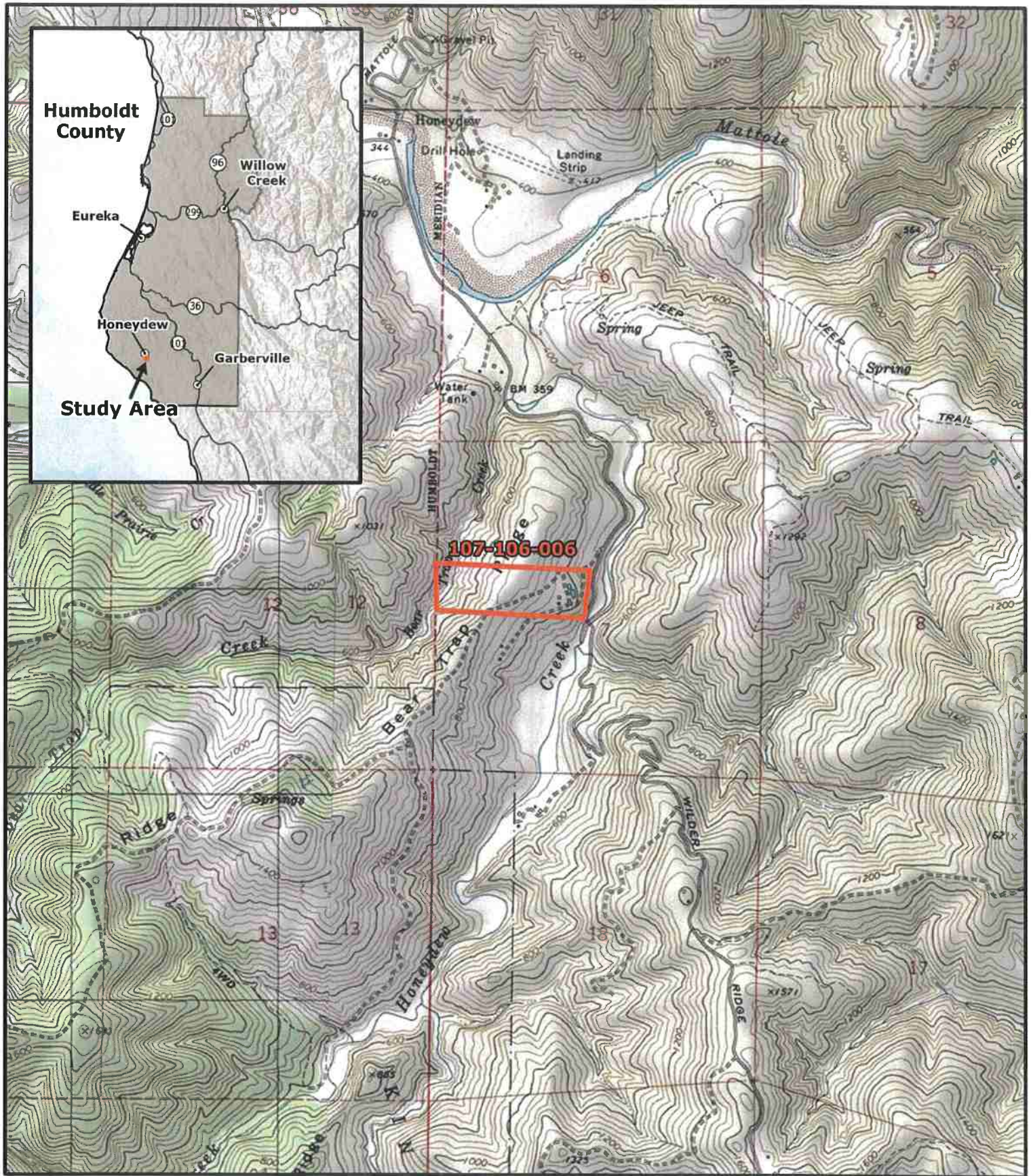
BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Nava Ranch, Inc.


Assessor Parcel Number (APN):

APN: 107 – 106 – 006

March 2021









Nava Ranch, LLC
 844 Wilder Ridge Road
 Honeydew, CA
 95545
 APN: 107-106-006

MAP 1: SITE LOCATION MAP
 Scale: 1:24,000  Study Area
 0 1,000 2,000 4,000 Feet
 Source: Honeydew 7.5-Minute USGS Quadrangle

Naiad
 Biological Consulting




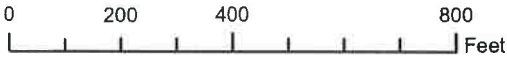


-  Study Area
-  Area Assessed Project Feasibility
-  Watercourse
-  Aquatic Resource 50ft Buffer
-  Stream Crossing
-  Test Pit (TP)

MAP 2: Study Area with Site Map

Scale: 1:4,000





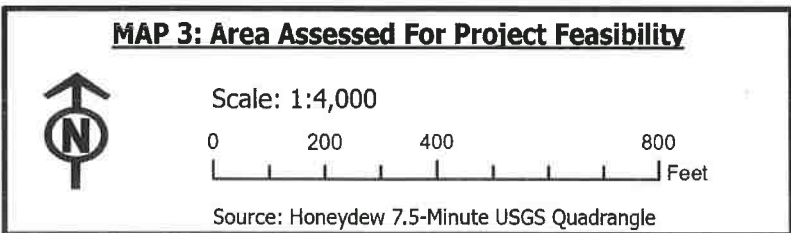
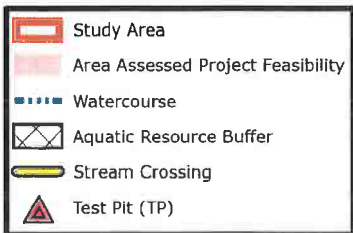
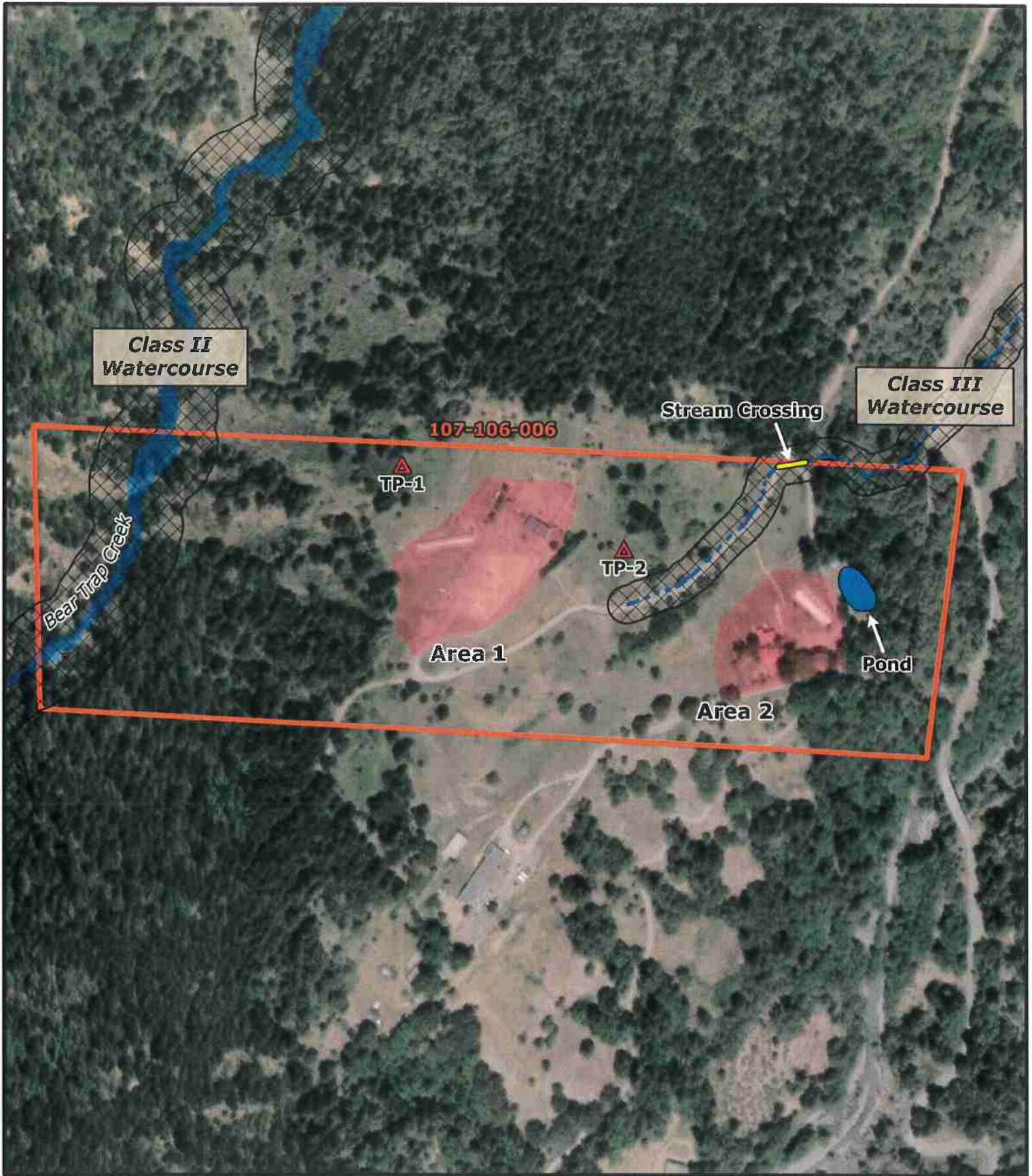
Feet

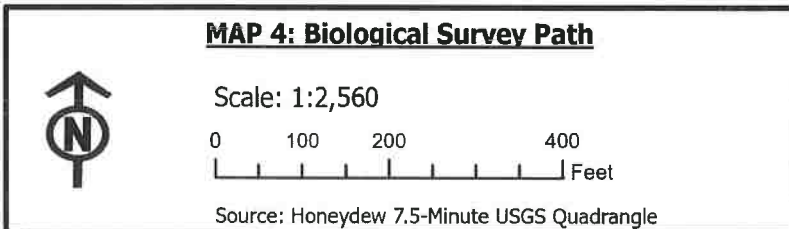
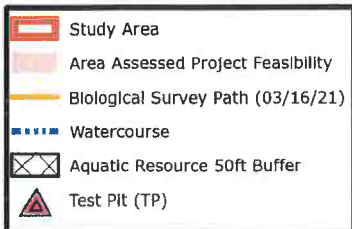
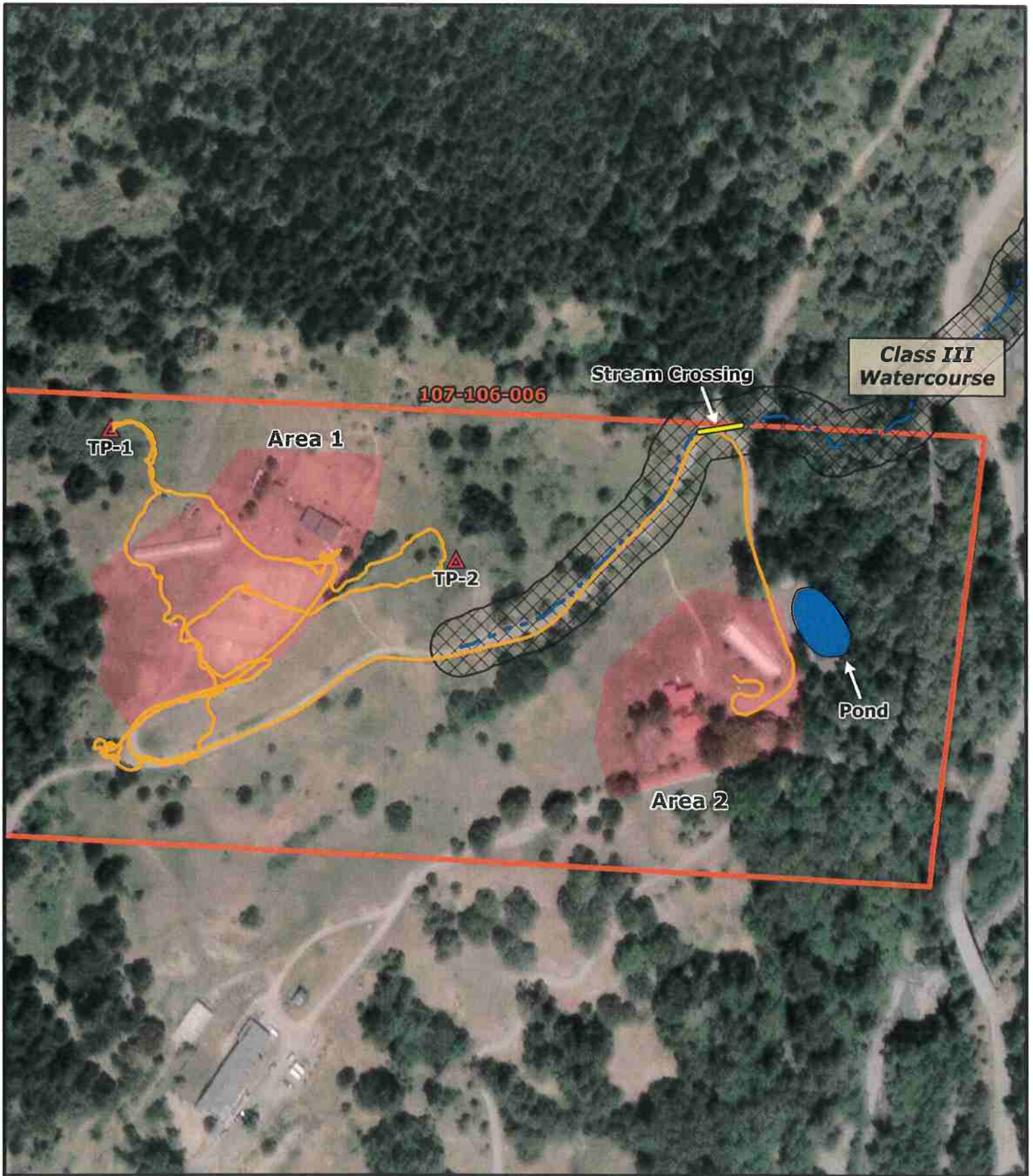
Source: Honeydew 7.5-Minute USGS Quadrangle

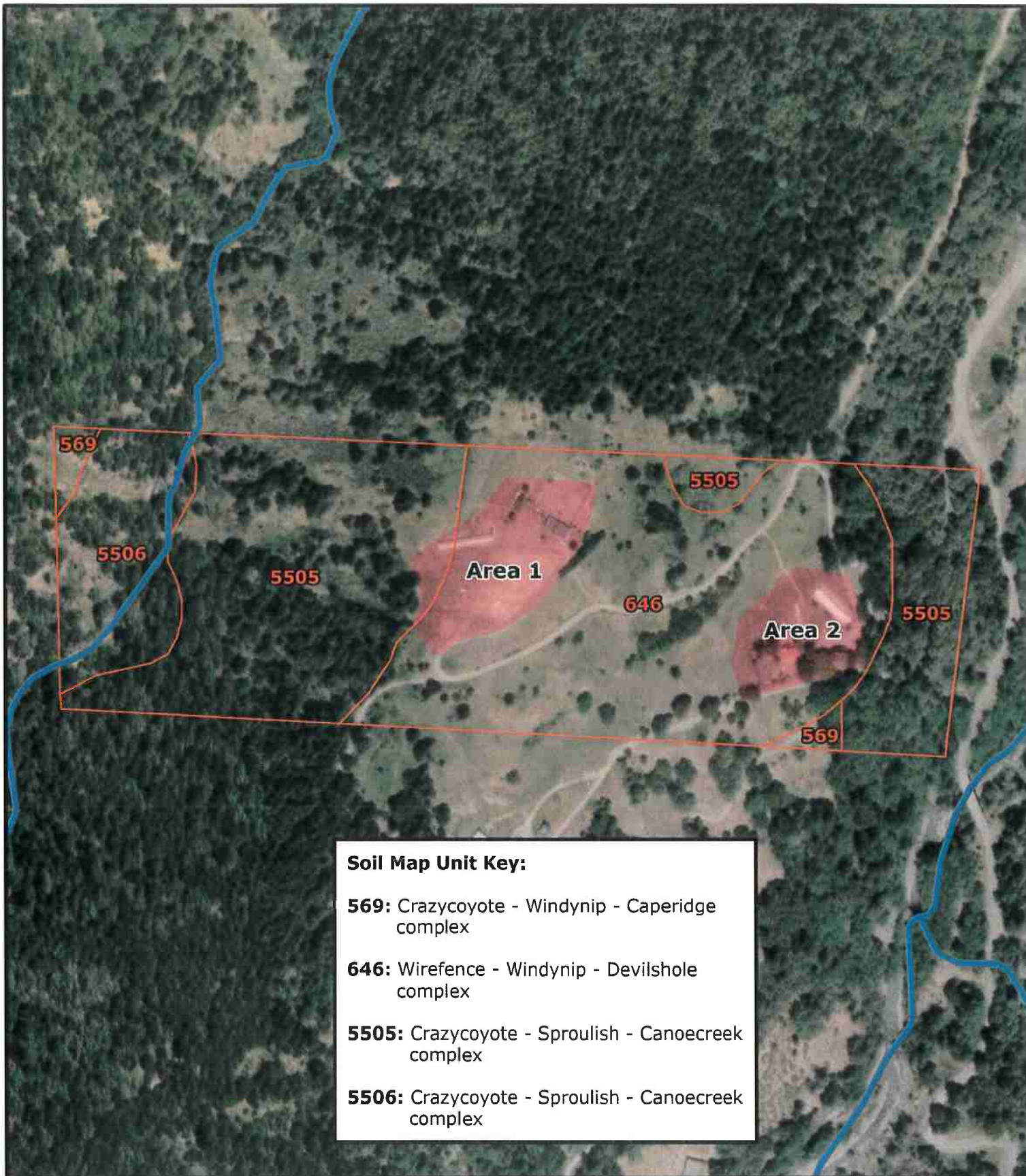
Naiad

Biological Consulting





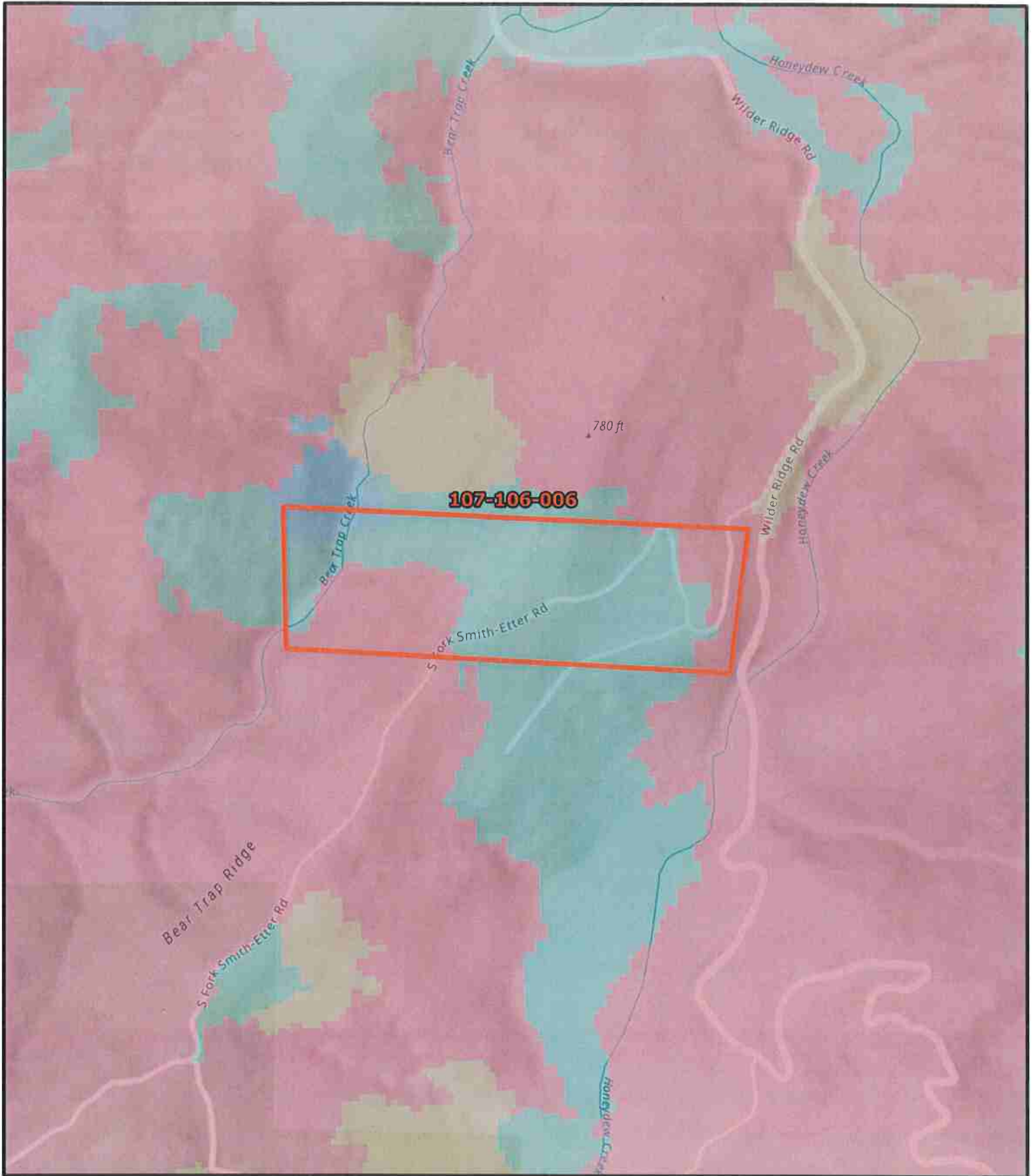




Soil Map Unit Key:

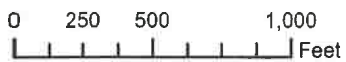
- 569:** Crazycoyote - Windynip - Caperidge complex
- 646:** Wirefence - Windynip - Devilshole complex
- 5505:** Crazycoyote - Sproulish - Canoecreek complex
- 5506:** Crazycoyote - Sproulish - Canoecreek complex

<p>MAP 5: Web Soil Survey and NWI</p> <p>Scale: 1:4,021</p> <p>0 150 300 600 Feet</p> <p>Source: Honeydew 7.5-Minute USGS Quadrangle</p>	<ul style="list-style-type: none"> Area Assessed Project Feasibility NRCS Web Soil Survey Soil Map Units Within Study Area USFWS National Wetlands Inventory (NWI) Riverine 	<p>Naiad Biological Consulting</p>
---	---	---







MAP 6: CalVeg Zones

Scale: 1:8,000



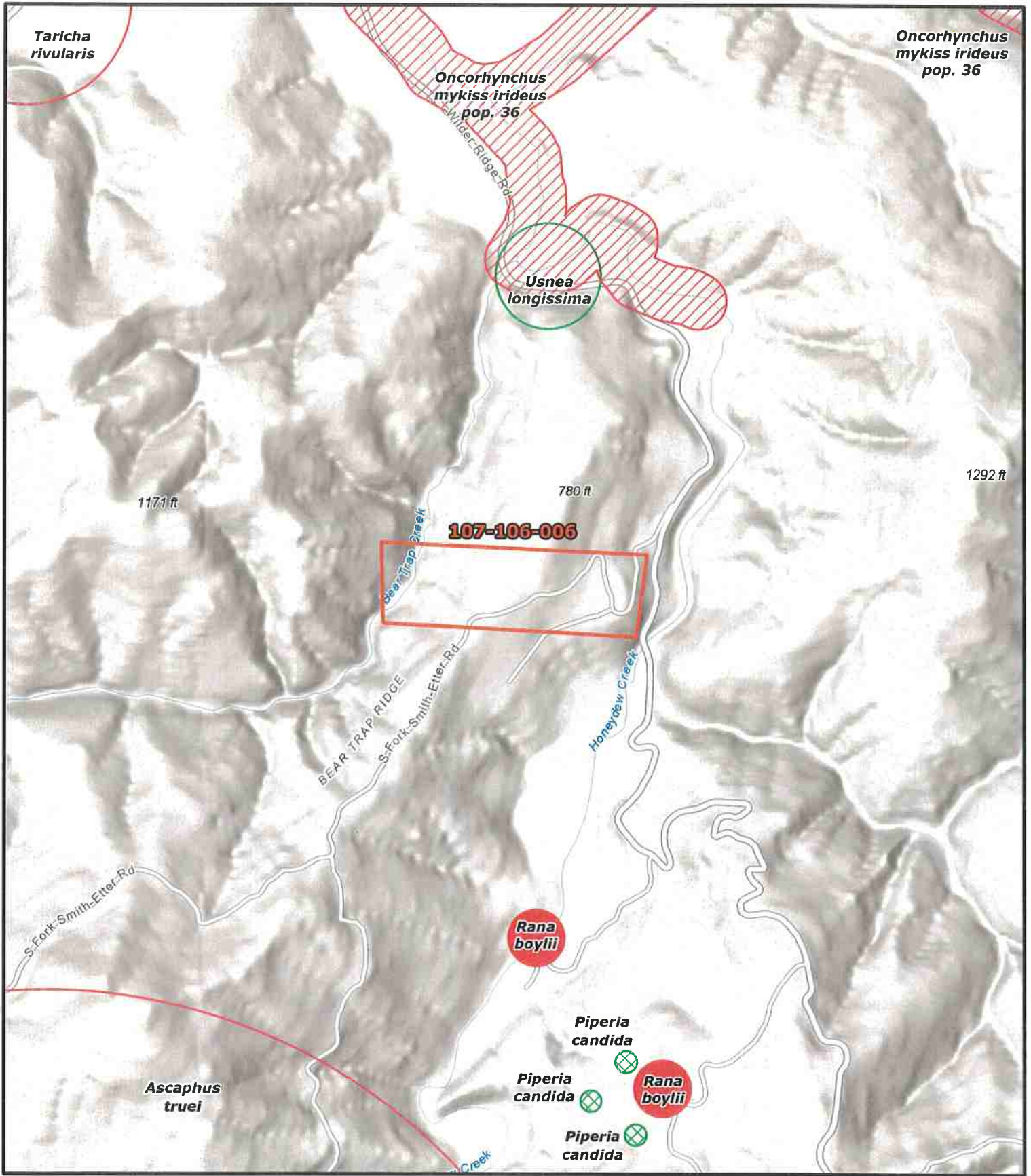
 Study Area

CalVeg Type

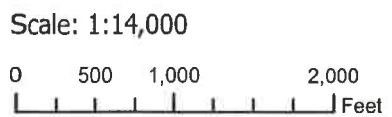
-  Chaparral and serotinous conifers
-  Mixed evergreen
-  Oak woodland
-  none



Source: Honeydew 7.5-Minute USGS Quadrangle



MAP 7: CNDDB Special Status Species



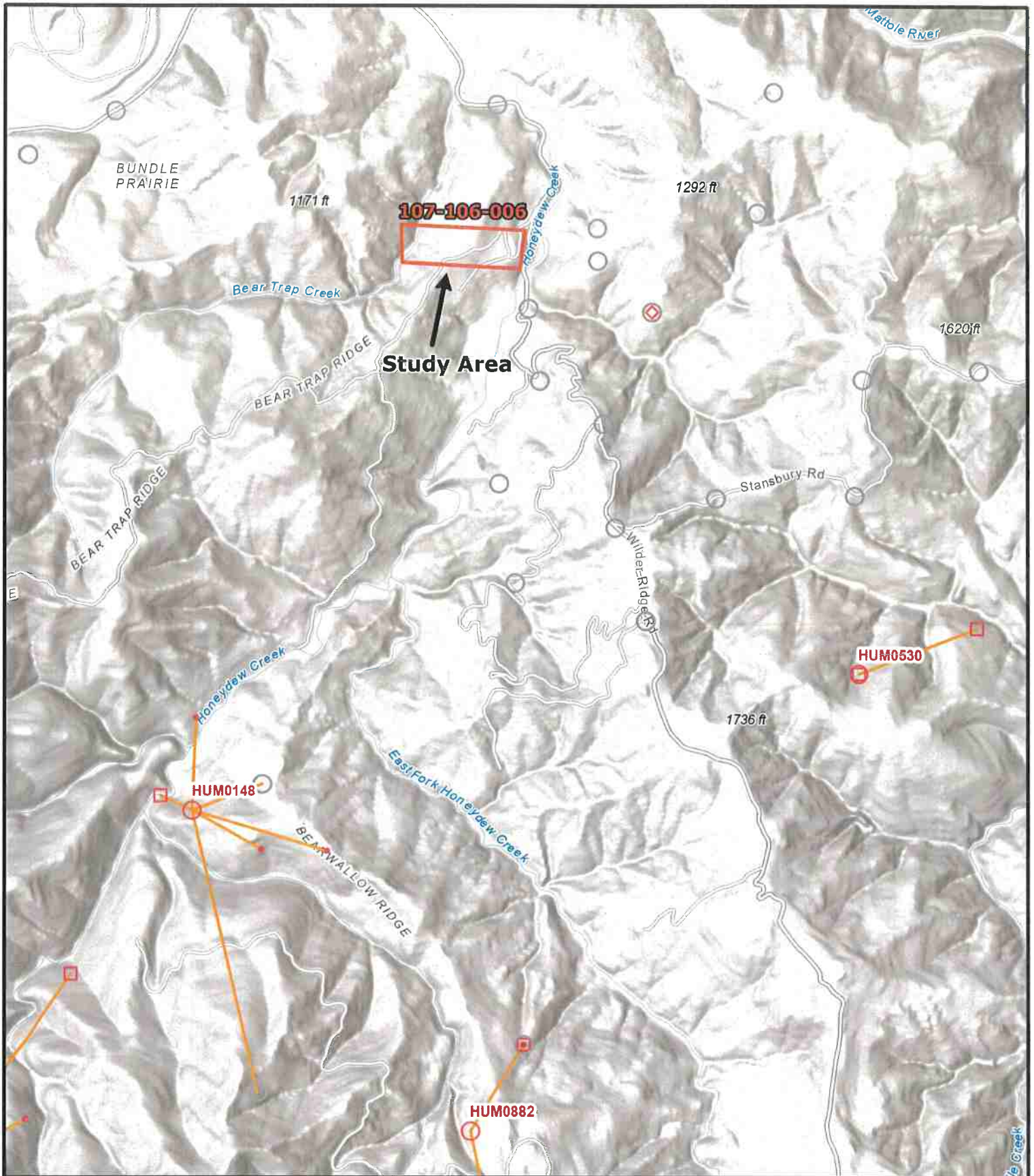
Source: Honeydew 7.5-Minute USGS Quadrangle

Study Area

CDFW CNDDB Symbology

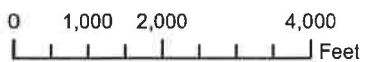
- Plant (specific)
- Plant (circular)
- Animal (80m)
- Animal (non-specific)
- Animal (circular)





MAP 8: Spotted Owl Observations

Scale: 1:30,000



- Study Area
- Spotted Owl Spider Diagram

Source: Honeydew 7.5-Minute USGS Quadrangle

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

Nava Ranch, Inc.
Assessor Parcel Number (APN):
APN: 107 – 106 – 006

March 2021

Data Version Date:
06/29/2020
Report Generation Date:
4/7/2021

Report #2 - Observations Reported

List of observations reported by site.



Meridian, Township, Range, Section (MTRS) searched:
H_03S_01E Sections(16,17,20,21);

Type	Date	Time	#Adults	Age/Sex	Pair	Nest	#Young	Latitude DD NAD83	Longitude DD NAD83	MTRS	Coordinate Source
Masterowl: HUM0530 Subspecies: NORTHERN											
POS	1989		1	UU		Y		40.203262	-124.079012	H.03S 01E 16	Contributor
POS	1991		1	UU		Y		40.200665	-124.087363	H.03S 01E 17	Contributor
AC	1992		1	UU		Y		40.200665	-124.087363	H.03S 01E 17	Contributor
Additional surveys within the search area with no Spotted Owls detected											
NEG	2019	2400	0					40.210129	-124.097696	H.03S 01E 17	Contributor
NEG	2019	2400	0					40.210377	-124.087794	H.03S 01E 17	Contributor

Appendix E

NRCS Web Soil Survey Reports

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Nava Ranch, Inc.
Assessor Parcel Number (APN):
APN: 107 – 106 – 006

March 2021

Humboldt County, South Part, California

569—Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lpq6
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Crazycoyote and similar soils: 38 percent
Windynip and similar soils: 32 percent
Caperidge, warm, and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crazycoyote

Setting

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

Typical profile

Oi - 0 to 2 inches: gravelly slightly decomposed plant material
A - 2 to 6 inches: gravelly loam
Bt1 - 6 to 13 inches: gravelly loam
Bt2 - 13 to 39 inches: gravelly clay loam
Bt3 - 39 to 47 inches: very gravelly clay loam
Bt4 - 47 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 15 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 (0.20 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 capacity: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Windynip

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 and residuum derived from sandstone and mudstone

Typical profile

A1 - 0 to 4 inches: loam

A2 - 4 to 10 inches: gravelly clay loam

AB - 10 to 24 inches: gravelly clay loam

Bt1 - 24 to 35 inches: gravelly clay loam

Bt2 - 35 to 51 inches: very gravelly clay loam

Bt3 - 51 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 15 to 50 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 low to moderately high (0.06 to 0.60 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 capacity: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Caperidge, Warm

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Center third of mountainflank

Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Colluvium derived from sandstone and/or residuum
weathered from sandstone

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A₁ - 1 to 6 inches: very gravelly loam
A₂ - 6 to 23 inches: very gravelly loam
B_t - 23 to 35 inches: extremely gravelly loam
CB_t - 35 to 55 inches: extremely gravelly sandy loam
C - 55 to 69 inches: extremely cobbly sandy loam

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water
(K_{sat}): 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 capacity: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Wirefence

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sproulsh

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear, concave, convex
Hydric soil rating: No

Yorknorth, moist

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: Linear, concave
Hydric soil rating: No

Devilshole

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop
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 9, Jun 1, 2020

Humboldt County, South Part, California

646—Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 1lpq7
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Wirefence and similar soils: 35 percent
Windynip and similar soils: 30 percent
Devilshole and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wirefence

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone

Typical profile

A1 - 0 to 11 inches: loam
A2 - 11 to 21 inches: loam
A3 - 21 to 33 inches: gravelly loam
AB - 33 to 46 inches: gravelly loam
Bw - 46 to 63 inches: very gravelly fine sandy loam
C - 63 to 79 inches: very gravelly fine sandy loam

Properties and qualities

Slope: 5 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 (0.60 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 capacity: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Hydric soil rating: No

Description of Windynip

Setting

Landform: Ridges

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Mountaintop

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Colluvium and residuum derived from sandstone and mudstone

Typical profile

A1 - 0 to 5 inches: loam

A2 - 5 to 12 inches: clay loam

A3 - 12 to 20 inches: clay loam

AB - 20 to 33 inches: clay loam

Bt1 - 33 to 59 inches: gravelly clay loam

Bt2 - 59 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 5 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 low to moderately high (0.06 to 0.60 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 capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Devilshole

Setting

Landform: Ridges

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

Parent material: Residuum weathered from sandstone and/or
mudstone

Typical profile

A - 0 to 4 inches: gravelly loam
ABt - 4 to 16 inches: very gravelly loam
Bt - 16 to 28 inches: very gravelly loam
BCt - 28 to 47 inches: extremely gravelly loam
C - 47 to 61 inches: gravel

Properties and qualities

Slope: 5 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 39 to 59 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 capacity: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Yorknorth, moist

Percent of map unit: 6 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Crazycoyote

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

Rainbear

Percent of map unit: 4 percent

Landform: Mountain slopes, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

5505—Crazycoyote-Sproulish-Canoeecreek complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2mhhg
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Crazycoyote and similar soils: 35 percent
Sproulish and similar soils: 30 percent
Canoeecreek and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crazycoyote

Setting

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

Typical profile

Oi - 0 to 2 inches: gravelly slightly decomposed plant material
A1 - 2 to 5 inches: gravelly loam
A2 - 5 to 15 inches: gravelly loam
Bt1 - 15 to 25 inches: gravelly loam
Bt2 - 25 to 35 inches: very paragravelly loam
BCt - 35 to 52 inches: very paragravelly loam
C - 52 to 79 inches: paragravelly sandy loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
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 capacity: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Hydric soil rating: No

Description of Sproulish

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 sandstone and/or residuum weathered from mudstone and/or sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 4 inches: loam

Bt1 - 4 to 24 inches: loam

Bt2 - 24 to 39 inches: gravelly clay loam

Bt3 - 39 to 55 inches: very gravelly clay loam

BCt - 55 to 79 inches: gravelly clay loam

Properties and qualities

Slope: 30 to 50 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

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 capacity: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Canocreek

Setting

Landform: Mountain slopes

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

Typical profile

O_i - 0 to 2 inches: gravelly slightly decomposed plant material
A - 2 to 12 inches: very gravelly loam
B_w - 12 to 24 inches: very gravelly loam
C₁ - 24 to 35 inches: very gravelly loam
C₂ - 35 to 71 inches: extremely gravelly loam

Properties and qualities

Slope: 30 to 50 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
*Capacity of the most limiting layer to transmit water
(K_{sat}):* 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 capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Windynip

Percent of map unit: 7 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

Kingrange

Percent of map unit: 6 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

Rock outcrop

Percent of map unit: 2 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 9, Jun 1, 2020

Humboldt County, South Part, California

5506—Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes

Map Unit Setting

National map unit symbol: 2mhhk
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Crazycoyote and similar soils: 35 percent
Sproulish and similar soils: 30 percent
Canoecreek and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crazycoyote

Setting

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

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: loam
ABt - 3 to 11 inches: loam
Bt₁ - 11 to 24 inches: loam
Bt₂ - 24 to 42 inches: loam
Bt₃ - 42 to 79 inches: loam

Properties and qualities

Slope: 50 to 75 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (K_{sat}): 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 capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Hydric soil rating: No

Description of Sproulish

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 sandstone and/or residuum weathered from mudstone and/or sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 7 inches: gravelly loam

Bt1 - 7 to 11 inches: gravelly loam

Bt2 - 11 to 22 inches: gravelly loam

Bt3 - 22 to 35 inches: gravelly sandy clay loam

Bt4 - 35 to 59 inches: very gravelly sandy clay loam

BCt - 59 to 71 inches: very gravelly loam

Properties and qualities

Slope: 50 to 75 percent

Surface area covered with cobbles, stones or boulders: 0.0 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

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 capacity: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Hydric soil rating: No

Description of Canoecreek

Setting

Landform: Mountain slopes

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

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A - 1 to 9 inches: gravelly sandy loam
AB_w - 9 to 21 inches: very gravelly sandy loam
B_w1 - 21 to 41 inches: very gravelly sandy loam
B_w2 - 41 to 51 inches: very gravelly sandy loam
BC_w - 51 to 71 inches: very gravelly sandy loam

Properties and qualities

Slope: 50 to 75 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
*Capacity of the most limiting layer to transmit water
(K_{sat}):* 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 capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Windynip

Percent of map unit: 6 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

Kingrange

Percent of map unit: 6 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

Rock outcrop

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: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Appendix F

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

**BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT**

Nava Ranch, Inc.
Assessor Parcel Number (APN):
APN: 107 – 106 – 006

March 2021

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.	<p>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:</p> <ol style="list-style-type: none"> 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.	<p>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.</p>
9.	<p>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.</p>
10.	<p>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.</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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. ○ 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.	<p>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.</p>

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 gulying. 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.	<p>Landowners shall develop a revegetation plan for:</p> <ul style="list-style-type: none"> • All exposed or disturbed riparian vegetation areas, • any oak trees that are damaged or removed, and • temporary work areas. <p>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).</p>
36.	<p>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.</p>
37.	<p>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.</p>
Stream Crossing Installation and Maintenance	
Limitations on Work in Watercourses and Permanently Poned Areas	
38.	<p>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.</p>
39.	<p>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.</p>
40.	<p>Landowners shall avoid or minimize use of heavy equipment¹³ 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.</p>
41.	<p>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.</p>
Temporary Watercourse Diversion and Dewatering: All Live Watercourses	
42.	<p>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.</p>

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: <ul style="list-style-type: none"> • CDFW's <i>Culvert Criteria for Fish Passage</i>; • CDFW's <i>Salmonid Stream Habitat Restoration Manual, Volume 2, Part IX: Fish Passage Evaluation at Stream Crossings</i>; and • National Marine Fisheries Service, Southwest Region <i>Guidelines for Salmonid Passage at Stream Crossings</i>.
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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ol style="list-style-type: none"> 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.	<p>Onstream storage reservoirs are prohibited unless either:</p> <ul style="list-style-type: none"> · 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: <ol style="list-style-type: none"> 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.		