BIOLOGICAL RESOURCES ASSESSMENT

APN 207-086-004

HUMBOLDT COUNTY, CALIFORNIA

PREAPRED FOR:

Hurvitz Environmental
105 Morris Street, Suite 188
Sebastopol, CA 95472

PREPARED BY:

Pinecrest Environmental Consulting Inc.
105 Morris Street, Suite 184
Sebastopol, California 95472
(510) 881-3039

PROJECT № HUR007

JANUARY 14, 2020

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this reconnaissance-level Biological Assessment (BA) is to evaluate the existence of special-status species (SSS) and/or habitats, as well as assess the potential for SSS listed in Appendix A to occur on or near the site of commercial cultivation activities, pursuant to applicable regulations from County of Humboldt and the State of California. This BA also analyzes the potential for jurisdictional wetlands and other waters of the U.S. to exist onsite, and classifies landforms that may potentially convey sediment to waters of the U.S. including dry creeks, washes, swales, gullys, and other erosional features. Also included is a set of Best Management Practices (BMPs) that are adapted from a variety of sources including State Water Resources Control Board *Cannabis* General Order No. WQ 2019-0001-DWQ and other state and local ordinances.

1.2 LOCATION

1.2.1 Site Overview

The project site is located at the end of an unnamed improved dirt and gravel road that branches to the southeast off of CA-36 just north of the Van Duzen River Bridge, 0.6 miles downstream from Grizzly Creek Redwoods State Park, in unincorporated Humboldt County. The parcel is located 0.5 miles northwest of Swain's Flat, 6.3 miles northeast of Redcrest, and 10.5 miles east of Carlotta (Figure 1). The parcel is located in Section 7, Township 1 North, Range 3 East, on the USGS Bridgeville 7.5 minute quadrangle (Figure 2). The approximate latitude and longitude of the centroid of the parcel is 40.476 (N), -123.876 (W). The parcel is designated Assessor's Parcel Number 207-086-004, is deeded 32.1 acres, and is under the jurisdiction of the North Coast (Region 1) Regional Water Quality Control Board (RWQCB), and the Northern Region (District 1) of the California Department of Fish & Wildlife (CDFW). The parcel is accessed via dirt road that is controlled by locking metal gate (Figure 7) that branches to the southwest off of CA-36. The cultivation area is reached by driving southwest for approximately 200 feet past the locked gate on a good condition packed dirt and gravel driveway (Figure 6).

1.2.2 Federal Critical Habitat

Federal Critical Habitat (FCH) is designated by the U.S. Fish & Wildlife Service (USFWS) and provides special protections for habitats considered important for long-term population persistence of endangered or threatened species. There is no FCH onsite for any animal or plant species (Appendix F). The nearest FCH is located 2.6 miles to the east for Northern Spotted Owl (*Strix occidentalis*; NSO) near Maple Grove. There is also FCH for NSO located 6.6 miles to the east of the project parcel near Little Burr Creek. This FCH is part of a larger discontinuous network of FCH for NSO in

eastern Humboldt County (Appendix F). The next nearest species with designated FCH is Marbled Murrelet (*Brachyramphus marmoratus*) located 3.75 and 6.0 miles west of the project parcel near Van Duzen County Park and Shivley, respectively. There is no FCH for any other species within 10 miles of the project parcel.

1.2.3 Special-Status Species Occurrences

Special-status species (SSS) are those species that receive special protections under either local, State, or Federal law and include both State and Federally Endangered and Threatened species of animals and plants, as well as candidate listing species and other species or populations of special concern for which additional information is required. The California Natural Diversity Database (CNDDB) provides information on most known SSS occurrences in the State of California. A description of the habitat requirements and likelihood of occurrence of potential SSS on the project parcel based the CNDDB database, published scientific literature, and the expertise of PEC staff, is provided in Appendix A, with all SSS known from a 5 mile radius around the project parcel highlighted. Additionally, map-based representation of all of the SSS within an approximately 5 mile radius around the project site is provided in Appendix C.

1.2.3.1 SSS Animals

There are no known special-status animal species known from the project parcel (Appendix C). The nearest known occurrence of special-status animal species is Northern spotted owl (*Strix occidentalis*; NSO) located approximately 0.1 miles west of the project parcel on the south-facing slope of the Van Duzen River (Appendix G). There are also several occurrences of NSO located 0.2 and 0.3 miles northwest and southwest of the project parcel, respectively (Appendix G). The next nearest special-status animal species with known occurrence is Foothill yellow- American peregrine falcon (*Falco peregrinus anatum*) located approximately 0.1 miles W of the project parcel along the Van Duzen River. The next nearest known occurrences of special-status animal species are Fisher (*Pekania pennanti*) and North American porcupine (*Erethizon dorsatum*) located 0.5 miles southeast of the project parcel near Swain's Flat. The next nearest known occurrences of special-status animal species are Sonoma tree vole (*Arborimus pomo*), Foothill yellow-legged frog (*Rana boylii*; FYLF), Long-legged myotis (*Myotis volans*), Marbled murrelet (*Brachyramphus marmoratus*), Southern torrent salamander (*Rhyacotriton variegatus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and Yuma myotis (*Myotis yumanensis*) located approximately 1.6 miles northwest of the project parcel in Grizzly Creek Redwoods State Park (Appendix C). The next nearest known occurrence of special-status animal species is Northern yellow-legged frog (*Rana aurora*) located approximately 1.9 miles southwest of the project parcel in the Chalk Mountains. The next nearest known occurrence of special-status animal species is Western bumblebee (*Bombus occidentalis*) located approximately 3.2 miles east of the project parcel near Bridgeville. The next nearest known occurrence of special-status animal species is Bank swallow (*Riparia riparia*), Cooper's hawk (*Accipiter cooperi*), Osprey (*Pandion haliaetus*), Sharp-shinned hawk (*Accipiter striatus*), and Western pond turtle (*Emys marmorata*) located approximately 3.7 miles south and southwest of the project parcel near Root Creek and Clark Mountain. There are no other known occurrences of special-status animal species within 5 miles of the project parcel (Appendix C).

1.2.3.2 SSS Plants

There are no known special-status plant species known from the project parcel (Appendix C). The nearest known occurrence of special-status plant species is Seacoast ragwort (*Packera bolanderi* var. *bolanderi*) located approximately 0.1 miles west of the project parcel along CA-36. The next nearest known occurrence of special-status plant species is Coast fawn lily (*Erythronium revolutum*) located approximately 0.5 miles southeast of the project parcel near Swain's Flat. The next nearest known occurrences of special-status plant species are Howell's montia (*Montia howellii*) and Methuselah's beard lichen (*Usnea longissima*) located approximately 0.6 miles northwest of the project parcel near Grizzly Creek Redwoods State Park. The next nearest known occurrence of special-status plant species is Maple-leaved checkerbloom (*Sidalcea malachroides*) located approximately 0.9 miles southwest of the project parcel near the Chalk Mountains. The next nearest known occurrence of special-status plant species is Running-pine (*Lycopodium clavatum*) located approximately 1.1 miles southwest of the project parcel near Root Creek. The next nearest known occurrence of special-status plant species is Northern clustered sedge (*Carex arcta*) located approximately 2.5 miles southwest of the project parcel near Clark Mountain. The next nearest known occurrence of special-status plant species is Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) located approximately 3.0 miles north of the project parcel near Stevens Creek. The next nearest known occurrence of special-status plant species is Pacific gilia (*Gilia capitata* ssp. *pacifica*) located approximately 3.2 miles east of the project parcel near Bridgeville. The next nearest known occurrence of special-status plant species is White-flowered rein orchid (*Piperia candida*) located approximately 4.2 miles south of the project parcel near Larabee Creek. The next nearest known occurrence of special-status plant species is Giant fawn lily (*Erythronium oregonum*) located approximately 4.8 miles northeast of the project parcel near Coyote Creek. There are no other known occurrences of special-status plant species within 5 miles of the project parcel.

1.2.4 Landforms & Water Features

The parcel consists of approximately 32 acres of mixed Redwood and Douglas Fir forest on the northern slopes and floodplain forest on the southern flat portion of the parcel (Figure 2). The maximum elevation of the parcel is 916 feet above sea level in the center of the northern parcel boundary, and the minimum elevation is 393 feet above sea level along the southern parcel boundary where it intersects with the floodplain of the Van Duzen River (Figure 3). The topography of the parcel is steeply sloped in the north with grades between 20% and 50%, and moderately sloped in the south with grades between 5% and 15%, as measured by Suunto PM5 handheld clinometer. There are no jurisdictional watercourses onsite (Figure 3). There are also no potential wetlands identified at the time of the survey near the potential cultivation areas, although a protocol-level wetland delineation was not performed. There are no culvert crossings on the property required to reach the cultivation area.

Hydrologically, the parcel receives water primarily from direct precipitation and from subsurface water flowing south from the ridge top (Figure 2). Water infiltrates and percolates to the south as non-channelized subsurface flow due to the steep and densely vegetated slopes (Figure 5). Eventually, water enters the drainage of the Van Duzen River. After exiting the parcel water flows offsite to the west for 20 miles before the confluence with the Eel River. From the confluence, the Eel River flows north and west for another 12 miles before emptying into the Pacific Ocean near Fortuna.

1.2.5 Existing Structures

A metal gate (Figure 7) provides access to the packed earth and gravel access road that is in fair condition (Figure 6). There is one existing permanent residence onsite, and three outbuildings or garages. There is one residence (Figure 4), the proposed current cultivation area that currently contains a dilapidated hoop-house (Figure 9), a well, HDPE water storage tank (Figure 8), and storage shed, all located in the first developed pad you encounter driving east into the property (Figure 3). The residence here also contains a pit type septic system and leach field, as reported to PEC by the resident. Continuing along the access road east you decrease in elevation and after approximately 0.15 miles you reach a second cleared area that contains an outbuilding (Figure 11) and a second cultivation area that is not in use (Figure 10). There are several other trailers and vehicles onsite but no other built structures.

1.2.6 Regional Land Uses

Land uses in the vicinity of the project parcel are primarily private timber land, rural residences, and several state parks including Grizzly Creek Redwoods SP and Humboldt Redwoods SP. Further to the east is Trinity County and the Six Rivers National Forest (SRNF) land managed for mixed uses including timber harvest, recreation, and wilderness. The remainder of the private lands are rural residential parcels, with pastureland in the valley bottoms, and scattered *Cannabis* cultivation farms on south facing slopes. In all directions from the parcel the terrain continues to be steep and densely forested with Carlotta to the west, Redcrest to the east, Korbel to the north, and Mad River to the south (Figure 1).

1.3 METHODS

1.3.1 Records Search & Literature Review

Based on a review of the literature and relevant databases, we compiled a list of special-status plant and animal species that are known to occur within Humboldt County, or that occupy habitats that are known to be present on or near the project site (Appendix A). Sources of information referenced include the California Department of Fish & Wildlife (CDFW) *California Natural Diversity Database* (CNDDB 2020), U.S. Fish and Wildlife Service Environmental Conservation Online System (USFWS 2020), the California Native Plants Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2019), the CDFW *Habitat Relationships System* (HRS), and the knowledge of PEC staff familiar with the species and habitats of Humboldt County.

Additional information on sensitive habitats including wetlands was obtained from the USFWS National Wetlands Inventory (NWI 2019), and the County of Humboldt *Geographic Information System Portal* (Humboldt Co. 2019). Plant species included here are state or federal endangered or threatened species, and/or considered rare by CDFW, and/or are recognized as special-status species (SSS) by CNPS or CDFW. Animal species included here are designated as State or Federally Endangered or Threatened, and/or CDFW species of special concern (SSC), and/or CDFW fully protected species (FPS). In addition, nests of most native bird species, regardless of their regulatory

status, are protected from take or harassment under the U.S. Migratory Bird Treaty Act (MBTA) and relevant sections of the California Fish & Game Code.

1.3.2 Field Surveys

A wildlife and botanical survey was conducted at the site on December 13, 2019. The weather was lightly raining, overcast, and still at the time of the survey, that began at approximately 2:00 PM. The temperature at the start of the survey was 62 degF, relative humidity was 67%, and wind gust speed was 0-2 mph, as measured with Kestrel 3000 handheld weather station. Approximately 3" of rain fell the preceding two months, and most vegetation was green and some annual species were already flowering. Most species also still had identifiable flowering parts from the previous year. Due to the temperature and seasonal conditions, animal activity was moderately low at the time of the survey.

Starting with the central portion of the property closest to the proposed cultivation area, the entire project site was surveyed on foot by PEC Senior Biologist Dr. Christopher T. DiVittorio, recording the location and identity of all plant and animal species encountered. Plant voucher specimens were taken of any species that were not identifiable in the field, and that were not likely to be special-status. The vast majority of species were identifiable at the time of the survey, although some had to be identified based on vegetative parts. Photographs and voucher specimens were taken of any plants that were identified solely based on vegetative characters.

The field survey was conducted by dividing the outdoor portions of the parcel into zones and cataloging all of the species found in each zone. Each zone was surveyed by walking in parallel lines until the whole zone was covered. Notes were also taken in each zone documenting the general site characteristics and current land uses, as well as any surface erosional features that may require remediation. Botanical specimens were taken back to the laboratory for identification if identification was not possible in the field. If species were not flowering at the time of the survey and morphological characteristics indicated that the species may be special-status, notes were made for a follow-up visit. Birds and nests were identified by call and with binoculars. Vocalizations, scat, tracks, feathers, burrows, nests, and molts were used for identification of animals present onsite. Any onsite aquatic habitats were observed for a minimum of ten minutes without movement in order to observe animals that may hide when approached.

2.0 RESULTS

2.1 NATURAL COMMUNITIES IN THE EVALUATION AREA

Using field surveys, a review of published literature, and the knowledge of PEC staff, all of the natural communities present on and around the project site were assessed. Regionally, the dominant vegetation type is Redwood and Douglas Fir forest on ridge tops and south-facing slopes. Light development successional grassland and riparian forest on valley bottoms and along major rivers. Valley bottoms exhibit grassland and hardwood riparian forest near watercourses although neither of these habitats exists onsite (Figure 4). In all directions in the immediate vicinity of the project parcel the terrain is hilly and densely vegetated, with scattered ranches and rural residences and timber production lands (Figure 5).

2.2 NATURAL COMMUNITIES WITHIN THE PROJECT SITE

The onsite communities consist of closed-canopy Redwood and Douglas Fir forest in the north, transitioning to moderately sloped successional riparian floodplain forest and old-field grassland in the south (Figure 2). There are no jurisdictional watercourses onsite, however there is a depression that runs along the toe of slope that has some features consistent with a channel, however after examination of aerial photographs it is apparent this is a channel created by historic flooding perhaps during the 1964 flood and does not currently convey flowing water. There were no potential wetlands and no special soil types such as serpentine or hardpan visible at the time of the survey. The specific community descriptions below are organized based on the zones that were surveyed, and the floristic results presented in Appendix B. We have used as guidance the *Manual of California Vegetation* (Sawyer et al. 2009) to guide community classification. Overall, the parcel consists of approximately 75% mixed Redwood and Douglas fir forest, and 15% successional forest, and 10% developed and old-field (Figure 3).

2.2.1 Mixed Redwood-Douglas Fir Forest

The majority of the parcel is dominated by mixed stands of Redwood, Douglas Fir, and various species of oaks that exhibit a continuous canopy with a woody understory of shade-tolerant species. Tree species in this habitat include Coast redwood (*Sequoiah sempervirens*) to 24" diameter-at-breast-height (DBH), Douglas fir (*Pseudotsuga menziesii*) to 24" DBH, California bay (*Umbellularia californica*) to 20" DBH, Black oak (*Quercus kelloggii*) to 18" DBH, Bigleaf maple (*Acer macrophyllum*) to 12" DBH, green acacia (*Acacia dealbata*) to 12" DBH, Oregon oak (*Quercus garryana*) to 10" DBH, and Incense cedar (*Calocedrus decurrens*) to 8" DBH. Understory species include poison oak (*Toxicodendron diversilobium*), tanoak (*Notholithocarpus densiflorus*), toyon (*Heteromeles arbutifolia*), mountain mahogany (*Cercocarpus betuloides*), scrub oak (*Quercus dumosa*), hoary manzanita (*Arctostaphylos canescens*), whiteleaf manzanita (*Arctostaphylos viscida*),

buck brush (*Ceanothus cuneatus*), deerbrush (*Ceanothus integerrimus*), evergreen buckthorn (*Rhamnus ilicifolia*), narrow-leaved sword fern (*Polystichum imbricans*), Douglas' iris (*Iris douglasii*), Hall's bentgrass (*Agrostis hallii*), common ladyfern (*Athyrium filix-femina*), sweet pea (*Lathyrus latifolius*),

2.2.2 Old-Field & Disturbed Areas

Species in the grassland and disturbed old-field portions of the site are dominated by non-native and early-successional species. Woody species include coyote brush (*Baccharis pilularis*), mountain mint (*Monardella odoratissima*), French broom (*Genista monspessulana*), cut-leaved blackberry (*Rubus laciniatus*), and Yerba Santa (*Eriodictyon californicum*). Herbaceous non-native species include dogstail grass (*Cynosurus echinatus*), old witch grass (*Panicum capillare*), wild oatgrass (*Avena barbata*), ripgut brome (*Bromus diandrus*), hairgrass (*Aira caryophyllea*), orchardgrass (*Dactylus glomerata*), medusahead (*Elymus caput-medusae*), rattlesnake grass (*Briza major*), soft chess (*Bromus hordeaceous*), Queen Anne's lace (*Daucus carota*), smooth cat's ear (*Hypochaeris glabra*), shamrock clover (*Trifolium dubium*), English plantain (*Plantago lanceolata*), Italian thistle (*Carduus pycnocephalus*), spring vetch (*Vicia sativa*), prickly lettuce (*Lactuca serriola*), bull thistle (*Cirsium vulgare*), spiny sowthistle (*Sonchus asper*), sheep sorrel (*Rumex acetocella*), field bindweed (*Convolvulus arvensis*), field hedge-nettle (*Stachys arvensis*), Fuller's teasel (*Dipsacus fullonum*), turkey-mullein (*Croton setiger*), field parsley (*Torilis nodosa*), yellow star thistle (*Centaurea solstitialis*), crane's bill filaree (*Erodium botrys*), sheep sorrel (*Rumex acetocella*), yellow sweetclover (*Melilotus officinalis*), common geranium (*Geranium molle*), rose clover (*Trifolium hirtum*), Klamathweed (*Hypericum perfoliata*), wild radish (*Raphanus sativa*), black mustard (*Brassica nigra*), Canada horseweed (*Erigeron canadensis*), variable-leaved pepperweed (*Lepidium heterophyllum*) and large-fruited lomatium (*Lomatium macrocarpum*). Native herbaceous species include blue fescue (*Festuca idahoensis*), squirreltail grass (*Elymus elymoides*), Northern wheatgrass (*Elymus lanceolatus*), blue wildrye (*Elymus glaucus*), Chinook brome (*Bromus laevipes*), silver bush lupine (*Lupinus albifrons*), miner's lettuce (*Claytonia perfoliata*), bitter cress (*Cardamine californica*), common bedstraw (*Galium aparine*), Western verbena (*Verbena lasiostachys*), lowland cudweed (*Gnaphalium palustre*), whiteleaf navarretia (*Navarretia intertexta*), narrow-leaved mule ears (*Wyethia angustifolia*), small-flower western flax (*Hesperolinon micranthum*), and common yarrow (*Achillea millefolium*).

2.2.3 Riparian Corridor & Floodplain

Species in the riparian corridor of the Van Duzen River are primarily disturbance-adapted species and early successional species including common riparian trees such as Pacific willow (*Salix lasiandra*), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*). Hydrophilic shrubs included Sierra gooseberry (*Ribes roezlii*), Himalayan blackberry (*Rubus armeniacus*), whitebark raspberry (*Rubus leucodermis*), snowberry (*Symphoricarpos albus*), creek clematis (*Clematis ligusticifolia*), and wood rose (*Rosa gymnocarpa*). Other subdominant species in the riparian corridor habitat includes curly dock (*Rumex crispus*), nut sedge (*Cyperus eragrostis*), vinca (*Vinca major*), common horsetail (*Equisetum arvense*), bog rush (*Juncus patens*), torrent sedge (*Carex nudata*), ample-leaved sedge (*Carex amplifolia*), pennyroyal (*Mentha pulegium*), nut sedge (*Cyperus eragrostis*), rabbitsfoot grass (*Polypogon monspeliensis*), Hyssop loosestrife (*Lythrum hyssopifolia*), common bedstraw (*Galium*

aparine), rock phacelia (*Phacelia egena*), narrowleaf milkweed (*Asclepias fascicularis*), naked-stemmed buckwheat (*Eriogonum nudum*), spearmint (*Mentha spicata*), common cowparsnip (*Heracleum maximum*), and mugwort (*Artemesia douglasiana*).

2.3 WILDLIFE

Wildlife activity was moderately low due to the weather and season. Animal species observed onsite include acorn woodpecker (*Melanerpes formicivorus*), black phoebe (*Sayornis nigricans*), Western scrub jay (*Aphelocoma californica*), California quail (*Callipepla californica*), crow (*Corvus brachyrhynchos*), turkey vulture (*Cathartes aura*), excavation mounds of Botta's pocket gopher (*Thomomys bottae*), scat of California black bear (*Ursus americanus californiensis*), scat of Mule deer (*Odocoileus hemionus*), and scat of black-tailed jackrabbit (*Lepus californicus*).

2.4 WETLANDS & STREAMS

There are no locations identified at the time of the survey that qualify as jurisdictional watercourses (Appendix E) that either pass within 200 feet of the cultivation areas or roadways. No watercourses cross the roadways on the parcel and there are no culverts onsite, however there is one recently replaced and engineered culvert crossing further north offsite on the road leading to the property. Despite the rain at the time of the survey there were no locations that were discharging sediment or transporting sediment due to the steep and densely vegetated hillslope. The litter and fern layer largely precludes the formation of erosional features even though the slope is steep and this area receives a substantial amount of precipitation. There are also no potential wetlands or other waters of the US observed onsite at the time of the survey in the vicinity of the cultivation areas or near the roadways. The floodplain and old-field areas area also too well-drained to maintain vernal pool features or to retain surface water beyond a day during rain events. Despite these observations, a protocol-level wetland delineation was not performed.

2.5 SOILS & LOCAL GEOMORPHOLOGY

The parent materials on the project parcel are typical of eastern Humboldt County, with densely vegetated canyons cut into erodible metasedimentary bedrock by large rain-fed rivers (USGS 2017). The northern portion of the project site including the west cultivation area (Figure 9) is mapped as well-drained Canoecreek-Sproulish-Redwohly complex (#572), 50% to 75% slopes, with lesser proportions of Redwoodhouse (8%), and Briceland (5%) soil types. This complex typically exhibits hydric soil proportion of 0%, has available water storage of 12.25 cm, is not prone to flooding, and is classified as not prime farmland. The southeast tip of the parcel including the east cultivation area (Figure 10) is mapped as Grizzlycree-Chaddcreek complex (#181), 2% to 9% slopes, with lesser proportions of Cottoneva (5%), Eelriver (5%), Redwoodhouse (3%) and Yagercreek (2%) soils. There are no serpentine or other ultramafic rock types onsite and no serpentine derived soils. There are no alkalai or vernal pool soil types onsite.

3.0 SUMMARY & CONCLUSIONS

No special-status plant species were observed during the surveys performed at the site in December 2019. No impacts are predicted for any of the special-status plant species discussed in Appendix A based on lack of actual sightings, and lack of suitable habitat in the proposed project areas. Proposed activities are largely limited to the previously developed hoop-house areas in the western portion of the site and are not proposing to remove trees or impact riparian habitat. There are no wetlands, riparian zones, serpentine outcrops, vernal pools, or other sensitive habitat types near the proposed project areas. The project involves repurposing the dilapidated hoop-house and no native vegetation or sensitive species or habitats exist in or around the hoop-houses. Continued use of the residences and road should have no impact on sensitive plant species or habitats due to the lack of wetland vegetation or culvert or other water crossings on the way to the cultivation area, and no wetlands or other sensitive habitats identified in the activity areas surrounding the hoop-houses.

No special-status animal species were observed during the surveys performed at the site in December 2019. No impacts are predicted for any of the special-status animal species discussed in Appendix A due to the lack of actual observations and lack of suitable habitat near the proposed project areas. There are no trees proposed to be removed as part of this project and we recommend no trees be allowed to be removed and no wires strung across open air higher than 5 feet due to the presence of Northern Spotted Owl and Marbled Murrelet in the vicinity (Appendices C & E). No impacts are predicted for NSO despite occurrences nearby due to the lack of tree removal and lack of closed canopy coniferous forest in and around the hoop-houses. The habitat proposed for cultivation is also not prime habitat for estivating amphibians due to the lack of cracks or burrows in the grassland near the proposed cultivation area. Despite this, NSO may transit across or forage in the parcel, and there are occurrences of FYLF within 1 mile of the site in the Van Duzen River, thus we suggest that avoidance measures for NSO and estivating amphibians are followed as described in Appendix H. Due the potential for NSO to exist near the project area we recommend the avoidance measures specific to breeding birds provided in Appendix H to be followed.

No erosion or sediment discharge issues were identified at the time of the survey and none are anticipated pending the approval of final plans as long as Applicant adheres to the BMPs in Appendix D and all applicable regulations from the County of Humboldt and the North Coast Regional Water Quality Control Board. There are no locations identified at the time of the survey that are actively discharging sediment into any jurisdictional waterways despite the rain at the time of the survey. There are also no jurisdictional watercourses or culverts on the property. This is due to the steep and densely vegetated hillslope, with a dense litter and fern layer that largely precludes the formation of erosional features, as is typical in Redwood forests. There were also no wetland or other waters of the US observed onsite, however a protocol-level wetland delineation was not performed. Some surface rills are observed on some sections of roadway, and routine annual resurfacing or installation of water bars is recommended. All revegetation activities in the future for both temporary and permanent grading should use only native species, or sterile wheat if no other sources of local genotypes are available.

4.0 REGULATORY FRAMEWORK

4.1 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.

4.2 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.

4.3 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.

4.4 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.

4.5 CALIFORNIA WATER QUALITY REGULATORY PROGRAMS

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

5.0 REFERENCES

Baldwin, B.G., et al. 2012. *The Jepson Manual: Vascular Plants of California.* University of California Press, Berkeley, CA.

Cafferata, P. *et al*. 2017. *Designing Watercourse Crossings for Passage of 100-Year Flood Flows, Wood, and Sediment*. California Natural Resources Agency, Sacramento, CA.

California Department of Fish & Wildlife (CDFW). 2020. *California Natural Diversity Database*. CDFW Wildlife and Habitat Data Analysis Branch, Sacramento, CA. https://www.wildlife.ca.gov/data.

California Department of Forestry & Fire Protection (CALFIRE). 2017. *California Forest Practice Rules*. California Natural Resources Agency, Sacramento, CA.

California Native Plant Society (CNPS). 2019. *Inventory of Rare and Endangered Plants*. CNPS, Sacramento, CA.

Central Valley Regional Water Quality Control Board (CVRWQCB). 2015. *Waste Discharge Requirements General Order for Discharges of Waste Associated with Medicinal Cannabis Cultivation Activities*. Order No. R5-2015-0113.

County of Humboldt Assessor. 2020. *Geographical Information Systems (GIS) Databases*. County of Humboldt, Eureka, CA.

Natural Resources Conservation Service (NRCS). 2020. *SoilWeb*. University of California, Agricultural and Natural Resources, Davis, CA. http://casoilresource.lawr.ucdavis.edu/gmap//.

North Coast Regional Water Quality Control Board (NCRWQCB). 2015. *Best Management Practices for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects*. Order No. R1-2015-0023.

Sawyer, J.O., T. Keeler-Wolf, J. Evens. 2009. *Manual of California Vegetation*. California Native Plant Society Press, Sacramento, CA.

State Water Resources Control Board (SWRCB). 2017. *Cannabis Cultivation General Order WQ 2017-0023-DWQ.* SWRCB, Sacramento, CA.

U.S. Department of Agriculture (USDA). 2017. *Soil Survey of Humboldt County, California.* Soil Conservation Service, Washington D.C.

U.S. Army Corps of Engineers (ACOE). 1987. *Wetlands Delineation Manual.* Watershed Research Program Technical Report Y-87-1, Washington, D.C.

U.S. Fish and Wildlife Service (USFWS). 2020. *Environmental Conservation Online System*. USFWS, Washington, DC. https://ecos.fws.gov/ecp/.

U.S. Fish and Wildlife Service (USFWS). 2020. *National Wetlands Inventory*. USFWS, Washington, DC. https://www.fws.gov/wetlands/.

U.S. National Weather Service (NWS). 2020. *National Climatic Data Center.* USNWS, Washington, DC. https://w2.weather.gov/climate/

Weaver, W.E. *et al.* 2015. *Culvert Sizing Procedures for the 100-Year Peak Flow.* Mendocino County Resource Conservation District, Ukiah, CA.

FIGURE 1: REGIONAL LOCATION

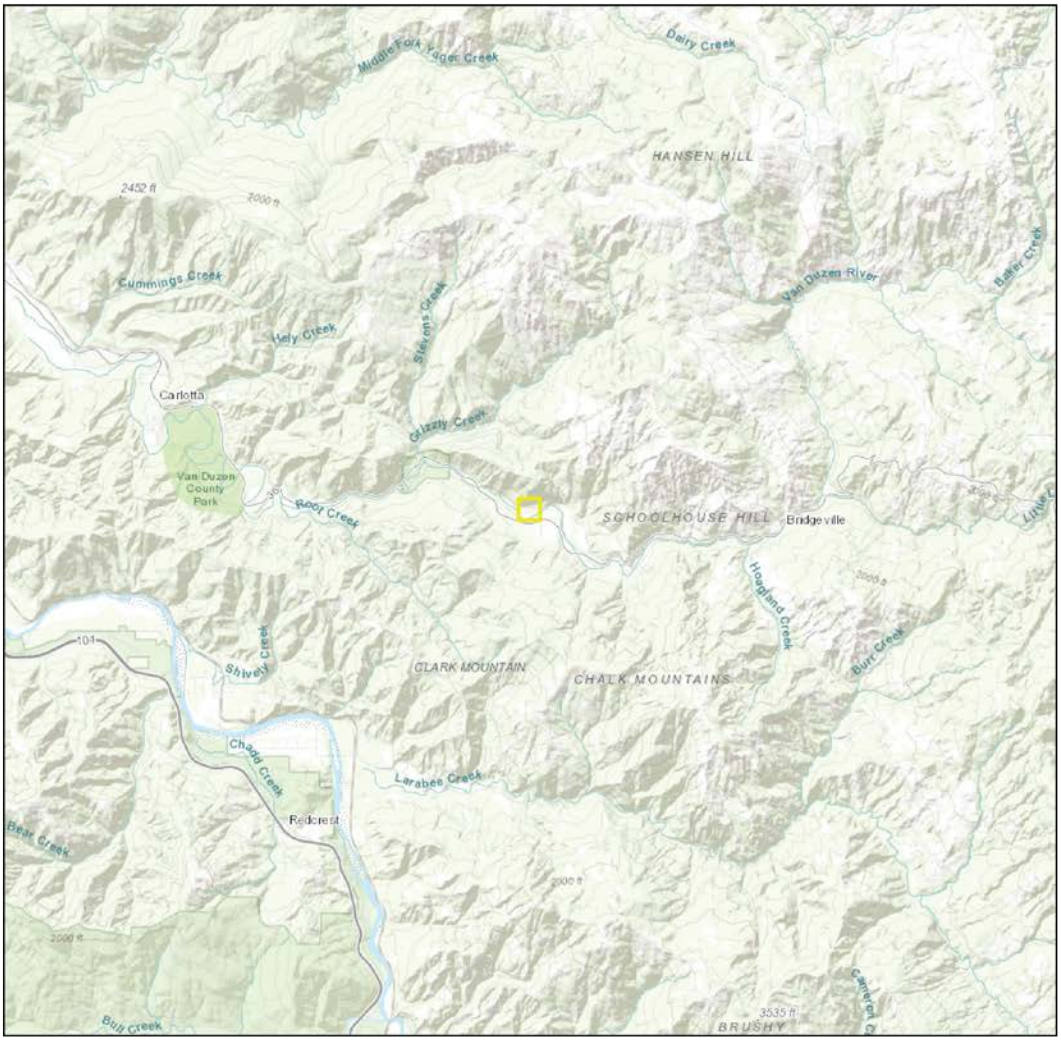
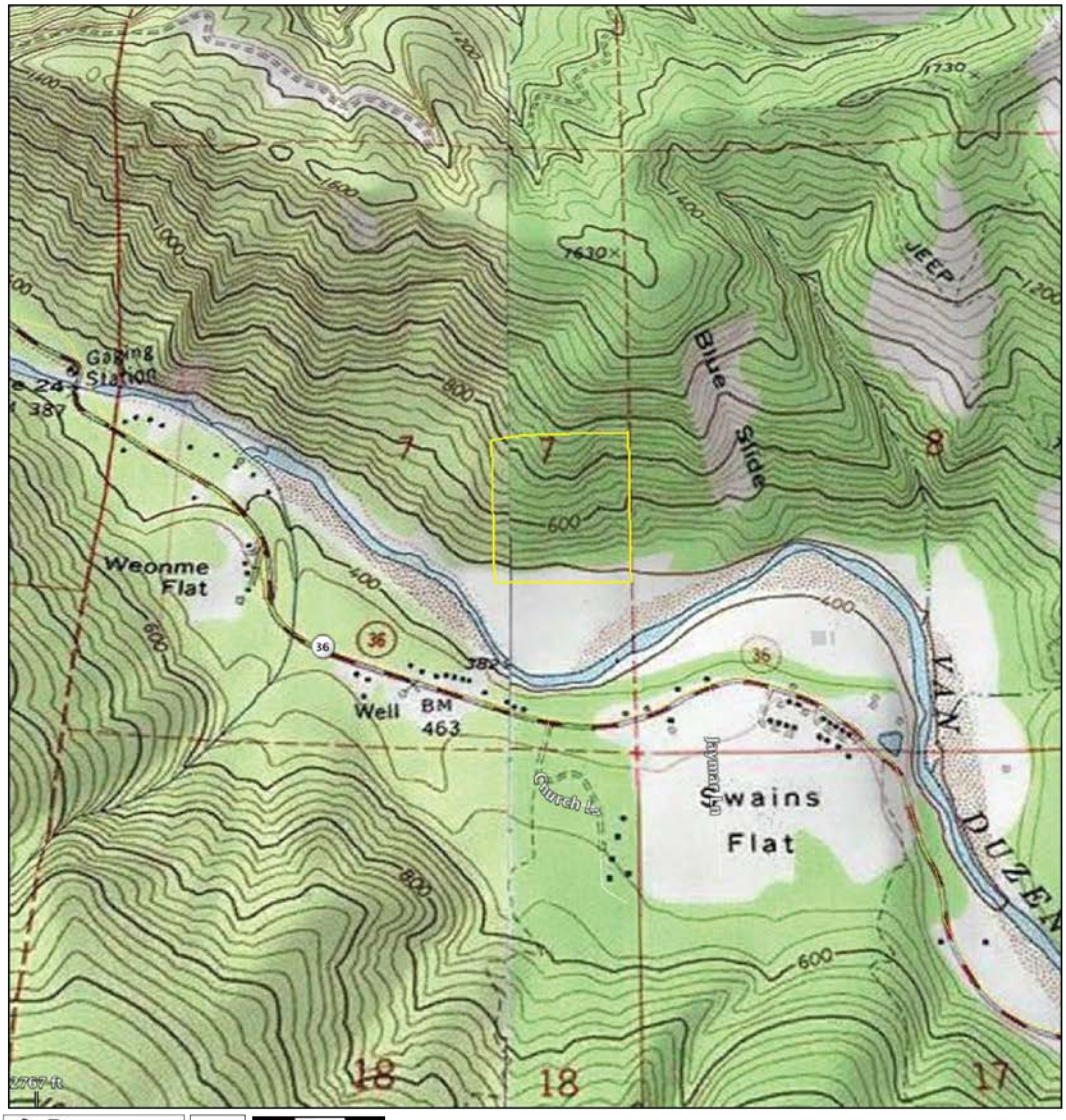


FIGURE 2: 40 FOOT CONTOURS



SOURCES: USGS 7.5 minute series

APN 207-086-004
Humboldt County, California

FIGURE 3: SITE SCHEMATIC & WATER FEATURES

FIGURE 4: PHOTOGRAPH OF RESIDENCE

Pinecrest Environmental Consulting
(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | 105 Morris St. Suite 184
Oakland, CA 94609 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 5: PHOTOGRAPH OF REDWOOD FOREST

Pinecrest Environmental Consulting
(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | 105 Morris St. Suite 184
Oakland, CA 94609 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 6: PHOTOGRAPH OF ACCESS ROAD

Pinecrest Environmental Consulting

(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | Oakland, CA 94609
105 Morris St. Suite 184 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 7: PHOTOGRAPH OF GATE

Pinecrest Environmental Consulting
(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | 105 Morris St. Suite 184
Oakland, CA 94609 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 8: PHOTOGRAPH OF WATER STORAGE

Pinecrest Environmental Consulting

(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | 105 Morris St. Suite 184
Oakland, CA 94609 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 9: PHOTOGRAPH OF CULTIVATION AREA A

Pinecrest Environmental Consulting
(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | Oakland, CA 94609
105 Morris St. Suite 184 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 10: PHOTOGRAPH OF CULTIVTION AREA B

Pinecrest Environmental Consulting
(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | 105 Morris St. Suite 184
Oakland, CA 94609 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

FIGURE 11: PHOTOGRAPH OF OUTBUILDING

Pinecrest Environmental Consulting
(510) 881-3039 info@pinecrestenvironmental.org
5627 Telegraph Ave. Ste. 420 | Oakland, CA 94609
105 Morris St. Suite 184 | Sebastopol, CA 95472

SOURCES: PEC Inc.

APN 207-086-004
Humboldt County, California

APPENDIX A: SPECIAL-STATUS SPECIES CONSIDERED

The following is a list of special-status plant and animal species generated based on knowledge of the species and habitats of Humboldt County by PEC staff, from various State and Federal databases, and from the California Natural Diversity Database (CNDDB). Known occurrences within 5 miles of the project site are shown in bold.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
PLANTS			
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	—/—/1B.1	Vernal pools, riparian woodland	None: No vernal pools exist on the project parcel.
Bald Mountain milk vetch (*Astragalus umbraticus*)	—/—/2B.3	Foothill woodland	Very Low: Some suitable woodland habitat exists onsite.
Beaked tracyina (*Tracyina rostrata*)	—/—/1B.2	Valley grassland, foothill woodland	Very Low: No suitable grassland habitat exists onsite.
Blushing wild buckwheat (*Eriogonum ursinum* var. *erubescens*)	—/—/1B.2	Serpentine outcrops	None: No suitable serpentine habitat exists on the project parcel.
Brandegee's eriastrum (*Eriastrum brandegeeae*)	—/—/1B.1	Chaparral	None: No suitable chaparral habitat exists onsite.
Brownish beaked-rush (*Rhynchospora capitellata*)	—/—/2B.2	Freshwater marsh, riparian	Low: No suitable wetland habitat exists onsite.
California globe mallow (*Iliamna latibracteata*)	—/—/1B.2	Forest	Low: Some suitable forest habitat exists onsite.
Canyon Creek stonecrop (*Sedum obtusatum* ssp. *paradisum*)	—/—/1B.3	Rock outcrops, yellow pine forest	Very Low: No suitable rock outcrop habitat exists onsite.
Coast fawn lily (*Erythronium revolutum*)	**—/—/2B.2**	**Forest, riparian**	**Medium: Some suitable forest habitat exists onsite. Nearest occurrence is 0.5 miles SE of the parcel near Swain's Flat.**
Del Norte County Iris (*Iris innominata*)	—/—/4.3	Serpentine	None: No suitable serpentine habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Dimorphic snapdragon (*Antirrhinum subcordatum*)	—/—/4.3	Serpentine, chaparral	None: No suitable serpentine habitat exists onsite.
Dudley's rush (*Juncus dudleyi*)	—/—/2B.3	Freshwater wetland	Low: No suitable wetland habitat exists onsite.
Dwarf soaproot (*Chlorogalum pomeridianum* var. *minus*)	—/—/1B.2	Serpentine chaparral	None: No suitable serpentine chaparral habitat exists onsite.
Elmer's lupine (*Lupinus elmeri*)	—/—/1B.2	Coniferous forest	Low: Some suitable forest habitat exists onsite.
English peak greenbrier (*Smilax jamesii*)	—/—/4.2	Forest, riparian	Low: Some suitable forest habitat exists onsite.
Gasquet rose (*Rosa gymnocarpa* var. *serpentina*)	—/—/1B.3	Serpentine outcrops	None: No suitable serpentine outcrop habitat exists onsite.
Giant (Mahogany) fawn lily (*Erythronium revolutum*)	**—/—/2B.2**	**Redwood forest, riparian**	**Medium: Some suitable redwood forest habitat exists onsite. Nearest occurrence is 4.8 miles NE of the parcel near Coyote Creek.**
Glandular western flax (*Hesperolinon adenophyllum*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Grassleaf water plantain (*Alisma gramineum*)	—/—/2B.2	Wetland, riparian	None: No suitable natural pond habitat exists onsite.
Great burnet (*Sanguisorba officinalis*)	—/—/2B.2	Serpentine wetlands	None: No suitable serpentine habitat exists onsite.
Greene's narrow-leaved daisy (*Erigeron greenei*)	—/—/1B.2	Serpentine grassland	None: No suitable serpentine habitat exists onsite.
Heckner's lewisia (*Lewisia cotyledon* var. *heckneri*)	—/—/1B.2	Rock outcrops, pine forest	Very Low: No suitable rocky outcrop habitat exists onsite.
Howell's montia (*Montia howellii*)	**—/—/2B.2**	**Vernal pools, wetlands**	**Low: Some marginally suitable habitat exists onsite. Nearest occurrence is 0.8 miles W of the parcel near Grizzly Creek Redwoods SP.**
Humboldt County milk vetch (*Astragalus agnicidus*)	—/—/1B.1	Mixed coniferous forest	Low: Some suitable forest habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Jepson's dodder (*Cuscuta jepsonii*)	—/—/1B.2	Parasitic plant	Very Low: Some suitable host plants known from the project parcel.
Jepson's leptosiphon (*Leptosiphon jepsonii*)	—/—/1B.2	Chaparral, serpentine grassland	None: No suitable serpentine chaparral habitat exists onsite.
Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*)	—/—/1B.2	Chaparral, serpentine grassland	None: No suitable chaparral habitat exists onsite.
Klamath arnica (*Arnica spathulata*)	—/—/4.3	Serpentine	None: No suitable serpentine habitat exists onsite.
Klamath mountain catchfly (*Silene salmonacea*)	—/—/1B.2	Alpine, yellow-pine forest	Low: Some suitable forest habitat exists onsite.
Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*)	—/—/1B.3	Chaparral, foothill woodland	None: No suitable chaparral habitat exists onsite.
Lemon colored fawn lily (*Erythronium citrinum*)	—/—/1B.3	Serpentine, yellow pine forest	None: No suitable serpentine habitat exists onsite.
Little-leaved huckleberry (*Vaccinium scoparium*)	—/—/2B.2	Subalpine forest	Very Low: No suitable subalpine forest habitat exists onsite.
Mad River fleabane daisy (*Erigeron maniopotamicus*)	—/—/1B.2	Grasslands, coniferous forest	Low: No suitable grassland habitat exists onsite.
Maple-leaved checkerbloom (*Sidalcea malachroides*)	**—/—/4.2**	**Coastal prairie, coniferous forest**	**Low: Some marginally suitable habitat exists onsite. Nearest occurrence is 0.9 miles SW of the parcel near Chalk Mountains.**
Marsh checkerbloom (*Sidalcea oregana* ssp. *hydrophila*)	—/—/1B.2	Freshwater wetland, riparian	None: No suitable riparian habitat exists onsite.
Milo Baker's lupine (*Lupinus milo-bakeri*)	—/—/1B.1	Foothill woodland, valley grassland	Very Low: No suitable grassland habitat exists onsite.
Niles' harmonia (*Harmonia doris-nilesiae*)	—/—/1B.1	Serpentine, yellow pine forest	None: No suitable serpentine habitat exists onsite.
Northern Clustered (Bear) sedge (*Carex arcta*)	**—/—/2B.2**	**Wetlands**	**Low: No suitable wetland habitat exists onsite. Nearest occurrence is 2.5 miles SW of the parcel near Clark Mountain.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Northern meadow sedge (*Carex praticola*)	—/—/2B.2	Coastal prairie, wetlands	Very Low: No suitable wetland habitat exists onsite.
Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*)	—/—/2B.2	Freshwater wetlands	None: No suitable natural pond habitat exists onsite.
Oregon fireweed (*Epilobium oreganum*)	—/—/1B.2	Coastal scrub, yellow pine forest	Low: Some suitable forest habitat exists onsite.
Oregon goldthread (*Coptis laciniata*)	—/—/4.2	Forest, wetland	Low: Some suitable forest habitat exists onsite.
Oregon rockcress (*Arabis oregana*)	—/—/4.3	Chaparral, yellow pine forest	Low: Some suitable forest habitat exists onsite.
Oval-leaved viburnum (*Viburnum ellipticum*)	—/—/2B.3	Chaparral	None: No suitable chaparral habitat exists onsite.
Pacific gilia (*Gilia capitata* spp. *pacifica*)	**—/—/1B.2**	**Coastal grassland, wet meadow**	**Low: No suitable wet meadow habitat exists onsite. Nearest occurrence is 3.2 miles E of the parcel near Bridgeville.**
Pale yellow stonecrop (*Sedum laxum* ssp. *flavidum*)	—/—/4.3	Serpentine outcrops	Low: No suitable serpentine habitat exists onsite.
Pink-margined monkeyflower (*Erythranthe trinitiensis*)	—/—/1B.3	Forests, grasslands	Low: Some suitable forest habitat exists onsite.
Pinnate-leaved navarretia (*Navarretia linearifolia* ssp. *pinnatisecta*)	—/—/4.3	Chaparral	None: No suitable chaparral habitat exists onsite.
Porcupine sedge (*Carex hystericina*)	—/—/2B.1	Wetland, riparian	Very Low: No suitable wetland habitat exists onsite.
Regel's rush (*Juncus regelii*)	—/—/2B.3	Freshwater wetland, riparian	Very Low: No suitable wetland habitat exists onsite.
Rincon manzanita (*Arctostaphylos canescens* ssp. *sonomensis*)	—/—/4.3	Chaparral	None: No suitable chaparral habitat exists onsite.
Running Pine (Clubmoss) (*Lycopodium clavatum*)	**—/—/4.1**	**Douglas Fir forest, wetland**	**Medium: Some suitable forest habitat exists onsite. Nearest occurrence is 1.1 miles SW of the parcel near Root Creek.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Seacoast (Bolander's) ragwort (*Packera bolanderi* var. *bolanderi*)	**—/—/2B.2**	**Coastal scrub, wetlands**	**Low: No suitable wetland habitat exists onsite. Nearest occurrence is 0.1 miles W of the parcel near CA-36.**
Serpentine cryptantha (*Cryptantha dissita*)	—/—/1B.2	Serpentine chaparral	None: No suitable serpentine habitat exists onsite.
Serpentine rockcress (*Boechera serpenticola*)	—/—/1B.3	Serpentine outcrops	None: No suitable serpentine habitat exists onsite.
Shasta chaenactis (*Chaenactis suffrutescens*)	—/—/1B.3	Serpentine outcrops	None: No suitable serpentine outcrop habitat exists onsite.
Siskiyou checkerbloom (*Sidalcea malviflora* spp. *patula*)	**—/—/1B.2**	**Wetland, grassland**	**Low: Some marginally suitable habitat exists onsite. Nearest occurrence is 3.0 miles N of the parcel near Stevens Creek.**
Siskiyou fireweed (*Epilobium siskiyouense*)	—/—/1B.3	Serpentine outcrops	None: No suitable serpentine habitat exists onsite.
Siskiyou onion (*Allium siskiyouense*)	—/—/4.3	Serpentine outcrops	None: No suitable serpentine habitat exists onsite.
Small-flowered calycadenia (*Calycadenia micrantha*)	—/—/1B.2	Foothill grassland	Low: Some marginally suitable grassland habitat onsite.
Small groundcone (*Kopsiopsis hookeri*)	—/—/2B.3	Forest	Low: Some suitable forest habitat exists onsite.
South Fork Mountain lupine (*Lupinus elmeri*)	—/—/1B.2	Coniferous forest	Low: Some suitable forest habitat exists onsite.
Stebbins' harmonia (*Harmonia stebbinsii*)	—/—/1B.2	Serpentine outcrops	None: No suitable serpentine habitat exists onsite.
The Lassics sandwort (*Sabulina decumbens*)	—/—/1B.2	Coniferous forest	Low: Some suitable forest habitat exists onsite.
Thread-leaved beardtongue (*Penstemon filiformis*)	—/—/1B.3	Serpentine clearings	None: No suitable serpentine habitat exists onsite.
Tracy's beardtongue (*Penstemon tracyi*)	—/—/1B.3	Coniferous forest	Low: Some suitable forest habitat exists onsite.
Tracy's eriastrum (*Eriastrum tracyi*)	—/—/3.2	Clearings in yellow pine forest, grasslands	Low: Some suitable forest habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Tracy's sanicle (*Sanicula tracyi*)	—/—/4.2	Serpentine, yellow pine forest	Low: Some suitable forest habitat exists onsite.
Umpqua green-gentian (*Frasera umpquaensis*)	—/—/2B.2	Pine forest, chaparral	Low: Some suitable forest habitat exists onsite.
Water howellia (*Howellia aquatilis*)	—/—/2B.2	Freshwater marshes	Very Low: No suitable marsh habitat exists in the project area.
Watershield (*Brasenia schreberi*)	—/—/2B.3	Pond, wetland	None: No suitable pond habitat exists in the project area.
Wayside aster (*Eucephalus vialis*)	—/—/1B.2	Douglas fir forest	Low: Some suitable forest habitat exists onsite.
White beaked-rush (*Rhynchospora alba*)	—/—/2B.2	Wetlands, riparian	None: No suitable wetland habitat exists onsite.
White-flowered rein orchid (*Piperia candida*)	**—/—/1B.2**	**Yellow pine forest**	**Medium: Some suitable forest habitat exists onsite. Nearest occurrence is 4.2 miles S of the parcel near Larabee Creek.**
Woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*)	—/—/4.2	Vernal pools, freshwater wetlands	None: No suitable wetland habitat exists onsite.
MOSSES, LICHENS & LIVERWORTS			
Angel's hair lichen (*Ramalina thrausta*)	—/—/2B.1	Old growth conifer and hardwood forests	Low: Some woodland habitat exists onsite.
Buxbaumia moss (*Buxbaumia viridis*)	—/—/2B.2	Forest, woodland	Low: Some suitable forest habitat exists onsite.
Coastal triquetrella (*Triquetrella californica*)	—/—/1B.2	Forest, woodland	Low: Some suitable forest habitat exists onsite.
Elongate copper moss (*Mielichhoferia elongata*)	—/—/4.3	Conifer forests	Low: Some suitable forest habitat exists onsite.
Flagella-like atractylocarpus (*Campylopodiella stenocarpa*)	—/—/2B.2	Forest, riparian	Low: Some suitable forest habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Methuselah's beard lichen (*Usnea longissima*)	**—/—/4.2**	**Old growth conifer and hardwood forests**	**High: Some suitable forest habitat exists onsite. Nearest occurrence is 0.6 miles NW of the parcel near Grizzly Peak Redwoods SP.**
Pacific fuzzwort (*Ptilidium californicum*)	—/—/4.3	Woodland, riparian	Low: No suitable riparian habitat exists onsite.
Slender silver moss (*Anomobryum julaceum*)	—/—/4.2	Rocky substrates in forests	Low: Some marginally suitable forest habitat exists onsite.
Torren's grimmia (*Grimmia torenii*)	—/—/1B.3	Forest, woodland	Low: Some marginally suitable habitat exists onsite.
FISH			
Chinook Salmon Upper Klamath/Trinity River ESU Population 30 (*Oncorhynchus tshawytscha*)	FT/SE/—	Freshwater streams, open ocean and estuaries	None: No suitable stream habitat exists onsite.
Coho Salmon Central California Coast ESU Population 4 (*Oncorhynchus kisutch*)	FE/SE/—	Freshwater streams, open ocean and estuaries	None: No suitable stream habitat exists onsite.
Steelhead Summer Run, Population 36 (*Oncorhynchus mykiss irideus*)	FT/—/—	Freshwater streams, open ocean and estuaries	None: No suitable stream habitat exists onsite.
AMPHIBIANS & REPTILES			
Del Norte salamander (*Plethodon elongatus*)	—/SSC/—	Forest, riparian	Low: Some suitable forest habitat exists onsite.
Foothill yellow-legged frog (*Rana boylii*)	**—/SSC/—**	**Wetlands, riparian, streams and ponds**	**Medium: Some suitable estivation habitat exists onsite. No suitable breeding habitat onsite. Nearest occurrence is 1.6 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
Northern red-legged frog (*Rana aurora*)	**—/SSC/—**	**Seasonal ponds, streams, wetlands**	**Very Low: No suitable breeding habitat exists onsite. Some estivation habitat exists onsite. Nearest occurrence is 1.9 miles SW of the parcel in the Chalk Mountains.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Pacific tailed frog (*Ascaphus truei*)	—/SSC/—	Woodland streams, riparian corridors	Medium: No suitable breeding habitat exists onsite. Some marginal estivation habitat exists onsite.
Red bellied newt (*Taricha rivularis*)	—/SSC/—	Woodland streams, riparian corridors	None: No suitable stream habitat exists onsite.
Southern Torrent salamander (*Rhyacotriton variegatus*)	**—/SSC/—**	**Coniferous forests near streams**	**Low: Some suitable forest habitat exists onsite. Nearest occurrence is 1.6 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
Western pond turtle (*Emys marmorata*)	**—/SSC/—**	**Slow-moving creeks, streams, ponds, rivers, ditches**	**Low: No suitable pond habitat exists onsite although Van Duzen River is nearby and animals may migrate onsite accidentally. Nearest occurrence is 3.7 miles W of the parcel near Root Creek.**
INVERTEBRATES			
Briggs' leptonetid spider (*Calileptoneta briggsi*)	—/SSC/—	Caves, leaf litter, rock outcrops	Low: Some suitable habitat exists onsite.
California floater (*Anodonta californiensis*)	—/SSC/—	Freshwater ponds, streams	None: No suitable stream habitat exists onsite.
California linderiella (*Linderiella occidentalis*)	—/SSC/—	Vernal pools	None: No vernal pool habitat exists onsite.
Crotch bumble bee (*Bombus crotchii*)	—/SSC/—	Grassland and chaparral	Low: No suitable grassland habitat exists onsite.
Leech's chaetarthrian water scavenger beetle (*Chaetarthria leechi*)	—/SSC/—	Freshwater streams	None: No suitable stream habitat exists onsite.
Leech's skyline diving beetle (*Hydroporus leechi*)	—/SSC/—	Freshwater ponds	None: No suitable pond habitat exists onsite.
Natural Bridge megomphix (*Megomphix californicus*)	—/SSC/—	Pine forests	Medium: Some suitable forest habitat exists onsite.
Obscure bumble bee (*Bombus caliginosus*)	—/SSC/—	Grassland, foothill woodland, chaparral	Very Low: No suitable grassland habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Oregon floater (*Anodonta oregonensis*)	—/SSC/—	High order freshwater streams	None: No suitable stream habitat exists onsite.
Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)	—/SSC/—	Freshwater ponds	None: No suitable pond habitat exists onsite.
Tehama chaparral (*Trilobopsis tehamana*)	—/SSC/—	Moist forests	Low: Some suitable forest habitat exists onsite.
Trinity bristle snail (*Monadenia infumata setosa*)	—/ST/—	Riparian forests	Very Low: Some suitable forest habitat exists onsite.
Trinity shoulderband (*Helminthoglypta talmadgei*)	—/SSC/—	Grassland, forest	Low: Some suitable forest habitat exists onsite.
Western bumblebee (*Bombus occidentalis*)	**—/SSC/—**	**Grassland**	**Medium: Some suitable grassland habitat exists onsite. Nearest occurrence is 3.2 miles E of the parcel near Bridgeville.**
Wawona riffle beetle (*Atractelmis wawona*)	—/SSC/—	Low gradient streams	None: No suitable stream habitat exists onsite.
BIRDS			
American perigrine falcon (*Falco peregrinus anatum*)	**—/SSC/—**	**Forages in open grasslands, nests in trees**	**Low: Some suitable nesting and foraging habitat exists onsite. Nearest occurrence is as close as 0.1 miles W of the parcel, located somewhere in the Redcrest USGS 7.5 minute quad.**
Bald eagle (*Haliaeetus leucocephalus*)	—/SSC/—	Forages over open lakes and streams	Very Low: No suitable foraging or nesting habitat exists onsite.
Bank swallow (*Riparia riparia*)	**FE/SE/—**	**Typically found near lakes and streams**	**None: No suitable stream habitat exists onsite. Nearest occurrence is an indistinct polygon centered over Carlotta as close as 3.7 miles W of the parcel.**
Black swift (*Cypseloides niger*)	—/SSC/—	Cliff faces near water	None: No suitable stream habitat exists onsite.
Cooper's hawk (*Accipiter cooperii*)	**—/WL/—**	**Forages over open grassland**	**Low: Some marginal foraging and nesting habitat exists onsite. Nearest occurrence is 3.7 miles SW of the parcel near Clark Mountain.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Ferruginous hawk (*Buteo regalis*)	—/SSC/—	Forages over open grassland; nests in old-growth trees	Low: Some marginal foraging and nesting habitat exists onsite.
Golden eagle (*Aquila chrysaetos*)	—/SSC/—	Forages over open grassland; nests in old-growth trees	Very Low: Some suitable foraging habitat exists onsite. Some marginal nesting habitat exists onsite.
Great blue heron (*Ardea herodias*)	—/SSC/—	Nests in large trees, forages in wetlands	None: No suitable foraging habitat exists onsite. No suitable nesting habitat onsite.
Great egret (*Ardea alba*)	FE/SE/—	Nests in large trees, forages in wetlands	None: No suitable foraging habitat exists onsite. No suitable nesting habitat onsite.
Marbled murrelet (*Brachyramphus marmoratus*)	**FT/SE/—**	**Old-growth coastal forests**	**Medium: Some suitable forest habitat exists, although in the northern portion of the site away from the project area. Nearest occurrence is 1.6 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
Northern goshawk (*Accipiter gentilis*)	—/SSC/—	Forages and nests in mountain forests	Medium: Some suitable foraging and nesting habitat exists onsite.
Northern spotted owl (*Strix occidentalis*)	**FT/ST/—**	**Nests primarily in old growth forests**	**Medium: Some suitable nesting and foraging habitat exists onsite. Nearest occurrence is 0.1 miles to the W near Van Duzen River. Other occurrences are located 0.2 miles NW, and 0.3 miles SW.**
Osprey (*Pandion haliaetus*)	**—/WL/—**	**Nests large bodies of water with fish**	**Low: Some suitable roosting habitat exists onsite, although this species is almost always found near large lakes or rivers. Nearest occurrence is 3.7 miles W of the parcel near Root Creek.**
Purple martin (*Progne subis*)	FE/SE/—	Insectivorous, nests in cavities	Very Low: Some marginally suitable nesting and foraging habitat exists onsite.
Sharp-shinned hawk (*Accipiter striatus*)	**—/SSC/—**	**Forest and woodland**	**Low: Some suitable nesting habitat exists onsite. Some marginal foraging habitat exists onsite. Nearest occurrence is 3.7 miles W of the parcel near Root Creek.**
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	—/SE/—	Woodland, riparian	Very Low: Some suitable nesting and foraging habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
White-tailed kite (*Elanus leucurus*)	—/CFP/—	Prefers to nest in marshes adjacent to deciduous forests	Very Low: Some marginal nesting habitat exists onsite. Some poor quality foraging habitat onsite.
Yellow breasted chat (*Icteria virens*)	—/SSC/—	Dense shrubby growth, farmland	Low: Some potential nesting and foraging habitat onsite.
MAMMALS			
American badger (*Taxidea taxus*)	—/SSC/—	Open grassland habitats with plenty of prey	Low: Some suitable den and foraging habitat exists onsite.
California wolverine (*Gulo gulo*)	—/SSC/—	Old growth forests	Very Low: Some suitable den and foraging habitat exists onsite.
Fisher (*Pekania pennanti*)	**—/SSC/—**	**Forages and breeds primarily in forests**	**Medium: Some suitable forest habitat exists onsite. Nearest occurrence is 0.4 miles SE of the parcel near Swain's Flat.**
Fringed myotis (*Myotis thysanodes*)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	Very Low: Few suitable roosts in the project area. Limited foraging habitat exists onsite.
Hoary bat (*Lasiurus cinereus*)	—/SSC/—	Forages over open areas, roots in trees or caves at high altitude	Very Low: Few suitable roosts in the project area. Foraging limited to high altitudes.
Humboldt marten (*Martes caurina humboldtensis*)	—/SSC/—	Forages and breeds in forests, typically near streams	Low: Some suitable den and foraging habitat exists onsite.
Long-eared myotis (*Myotis evotis*)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	Low: Limited roosting habitat exists onsite. Some foraging habitat exists onsite.
Long-legged myotis (*Myotis volans*)	**—/SSC/—**	**Roosts in caves or buildings and forages in open habitats**	**Low: Limited roosting habitat exists onsite. Some foraging habitat exists onsite. Nearest occurrence is 1.6 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
North American porcupine (*Erethizon dorsatum*)	**—/SSC/—**	**Require rocky areas or trees for dens, abundant open space for foraging**	**Medium: Some suitable foraging and den habitat exists onsite. Nearest occurrence is 0.5 miles SE of the parcel near Swain's Flat.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Oregon snowshoe hare (*Lepus americanus klamathensis*)	—/SSC/—	Alpine and high elevation mountains	None: No suitable alpine habitat exists onsite.
Pacific marten (*Martes caurina*)	—/SSC/—	Forages and breeds in forests, typically near streams	Medium: Some suitable forest habitat exists onsite.
Pallid bat (*Antrozous pallidus*)	—/SSC/—	Common in open dry habitats with rocky areas for roosting	Low: Some foraging habitat exists onsite. No suitable roosts in the project area.
Silver haired bat (*Lasionycteris noctivagans*)	—/SSC/—	Nocturnal, migratory, solitary, roosts in tree cavities	Very Low: Some suitable trees exist for roosting. Some foraging habitat exists onsite.
Sonoma tree vole (*Arborimus pomo*)	**—/SSC/—**	**Douglas fir forest**	**Medium: Some suitable forest habitat exists onsite, particularly larger diameter Douglas Fir and Redwood trees in mature canopy. Nearest occurrence is 1.3 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
Townsend's big-eared bat (*Corynorhinus townsendii*)	**—/SSC/—**	**Hibernate in mines or caves, roost in man made structures and caves**	**Very Low: Few man-made structures exist suitable for roosting. Some habitat for foraging. Nearest occurrence is 1.6 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
Western red bat (*Lasiurus blossevillii*)	—/SSC/—	Forages over open areas, roots in trees or caves	Low: Limited roosting habitat exists onsite. Some foraging habitat exists onsite.
Yuma myotis (*Myotis yumanensis*)	**—/SSC/—**	**Forages over open areas, roots in trees or caves**	**Low: Limited roosting habitat exists onsite. Some foraging habitat exists onsite. Nearest occurrence is 1.6 miles NW of the project parcel in Grizzly Creek Redwoods SP.**
HABITATS			
Coastal & Valley Freshwater Marsh (CVFM)	—	—	None: No marsh habitat exists onsite.
Northern Hardpan Vernal Pool (NHVP)	—	—	None: No hardpan vernal pool habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Northern Vernal Pool (NVP)	—	—	None: No vernal pool habitat exists onsite.
Sycamore Alluvial Woodland (SAW)	—	—	None: No woodland habitat exists onsite.
Valley Oak Woodland (VOW)	—	—	None: No valley oaks exist onsite.

[1] Status:

Federal
FE = Federally Endangered Species
FT = Federally Threatened Species

State
SE = State Endangered Species
ST = State Threatened Species
SSC = California Species of Special Concern
CFP = California Fully Protected Species

CNPS (applies to plants only)
List 1B = plants considered rare, threatened, or endangered in California and elsewhere
List 2B = plants rare, threatened or endangered in California, but more common elsewhere
List 3 = plant is likely rare but more information is required
List 4 = plants of limited distribution

[2] USFWS

APPENDIX B: SPECIES ENCOUNTERED

This list contains a list of all of the plants and animals observed onsite within the study area during the site visit on December 13, 2019. Any special-status species (SSS) are denoted in bold with an asterisk. No SSS species were directly observed at the time of the survey.

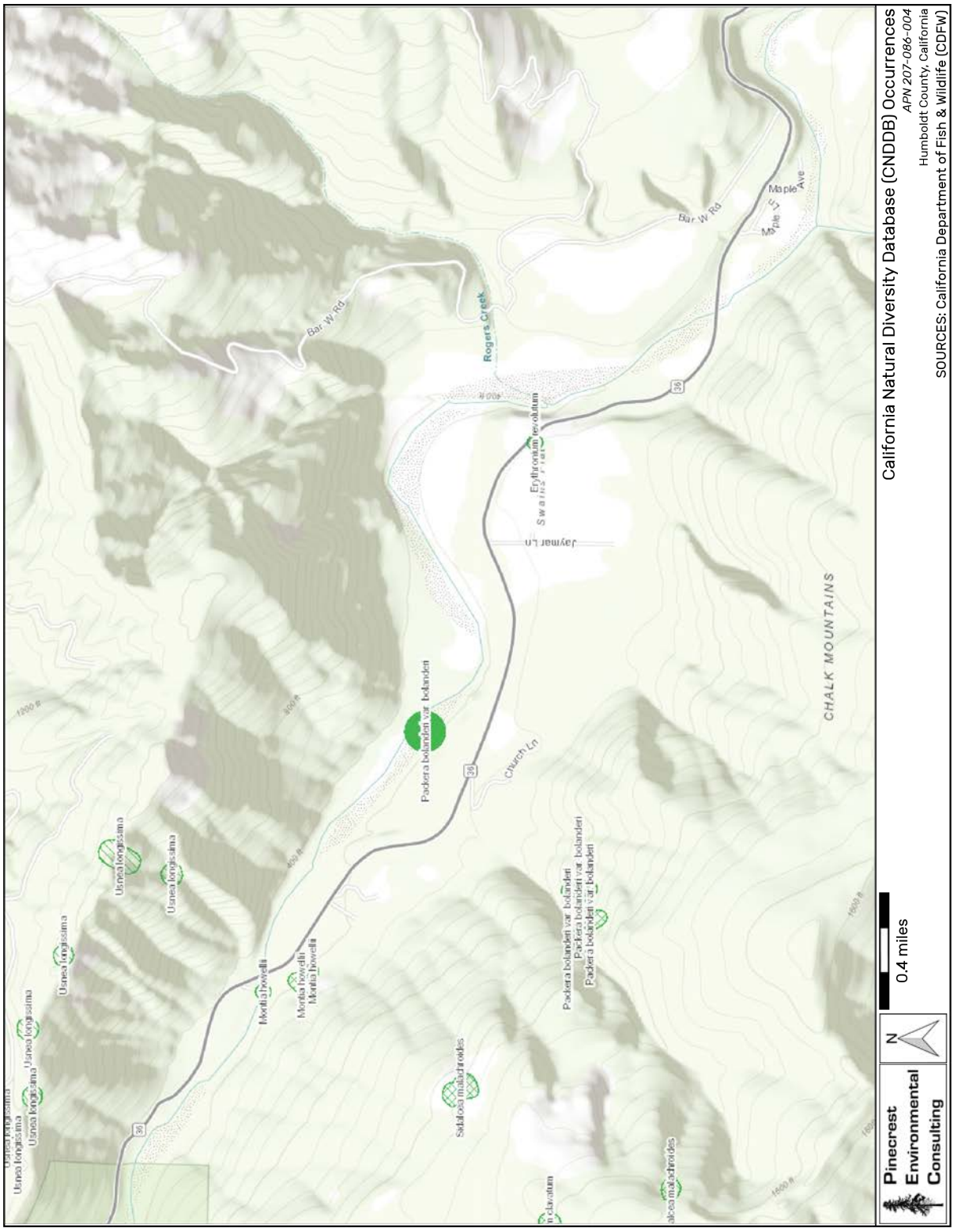
PLANTS
Artemesia douglasiana
Pseudotsuga menziesii
Umbellularia californica
Quercus kelloggii
Acer macrophyllum
Acacia dealbata
Quercus garryana
Calocedrus decurrens
Toxicodendron diversilobium
Notholithocarpus densiflorus
Heteromeles arbutifolia
Cercocarpus betuloides
Quercus dumosa
Arctostaphylos canescens
Arctostaphylos viscida
Ceanothus cuneatus
Ceanothus integerrimus
Rhamnus ilicifolia
Polystichum imbricans
Iris douglasii
Agrostis hallii
Athyrium filix-femina
Lathyrus latifolius
Baccharis pilularis
Monardella odoratissima
Genista monspessulana
Rubus laciniatus
Eriodictyon californicum
Cynosurus echinatus
Panicum capillare
Avena barbata
Bromus diandrus
Aira caryophyllea
Dactylus glomerata

Elymus caput-medusae
Briza major
Bromus hordeaceous
Daucus carota
Hypochaeris glabra
Trifolium dubium
Plantago lanceolata
Carduus pycnocephalus
Vicia sativa
Lactuca serriola
Cirsium vulgare
Sonchus asper
Rumex acetocella
Convolvulus arvensis
Stachys arvensis
Dipsacus fullonum
Croton setiger
Torilis nodosa
Centaurea solstitialis
Erodium botrys
Rumex acetocella
Melilotus officinalis
Geranium molle
Trifolium hirtum
Hypericum perfoliata
Raphanus sativa
Brassica nigra
Erigeron canadensis
Lepidium heterophyllum
Lomatium macrocarpum
Festuca idahoensis
Elymus elymoides
Elymus lanceolatus
Elymus glaucus
Bromus laevipes
Lupinus albifrons
Claytonia perfoliata
Cardamine californica
Galium aparine
Verbena lasiostachys
Gnaphalium palustre
Navarretia intertexta
Wyethia angustifolia
Hesperolinon micranthum
Achillea millefolium
Salix lasiandra
Alnus rhombifolia

Fraxinus latifolia
Ribes roezlii
Rubus armeniacus
Rubus leucodermis
Symphoricarpos albus
Clematis ligusticifolia
Rosa gymnocarpa
Rumex crispus
Cyperus eragrostis
Vinca major
Equisetum arvense
Juncus patens
Carex nudata
Carex amplifolia
Mentha pulegium
Cyperus eragrostis
Polypogon monspeliensis
Lythrum hyssopifolia
Galium aparine
Phacelia egena
Asclepias fascicularis
Eriogonum nudum
Mentha spicata
Heracleum maximum
Sequoiah sempervirens

ANIMALS
Aphelocoma californica
Callipepla californica
Cathartes aura
Corvus brachyrhynchos
Lepus californicus
Melanerpes formicivorus
Odocoileus hemionus
Sayornis nigricans
Thomomys bottae
Ursus americanus californiensis

APPENDIX C: CNDDB OCCURRENCES MAP



APPENDIX D: CANNABIS CULTIVATION BEST MANAGEMENT PRACTICES

Best management practices (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.

D.1 CANNABIS CULTIVATION

- Pesticide and fertilizer storage facilities shall be located outside of the riparian corridor setbacks for structures.
- Pesticide and fertilizer storage facilities shall not be located within 100 feet of a wellhead, or within 50 feet of identified wetlands.
- Pesticide and fertilizer storage facilities shall be adequate to protect pesticide and fertilizer containers from the weather.
- Store all bags and boxes of pesticides and fertilizers off the ground on pallets or shelves.
- If the structure does not have an impermeable floor, store all liquid pesticides and fertilizers on shelves capable of containing spills or provide appropriate secondary containment.
- Routinely check for leaks and spills.
- Have spill cleanup kit onsite to be able to respond to any leaks or spills.
- Inspect planting stock for pests and diseases prior to planting.
- Avoid planting stock with pests and disease and notify the supplier of the planting stock of the infestation.
- Comply with all pesticide laws and regulations as enforced by the California Department of Pesticide Regulation and County Agricultural Commissioner.
- For pesticides with the signal word CAUTION that have listed food uses, comply with all pesticide label directions as they pertain to personal protective equipment, application method, and rate, environmental hazards, longest reentry intervals and greenhouse and indoor use directions.
- For all other pesticides, use must comply with all label requirements including site and crop restrictions.
- Prior to the use of any registered pesticide on *Cannabis*, Operator Identification Number should be obtained from the County Agricultural Commissioner if required.
- Submit monthly pesticide use reports to the County Agricultural Commissioner if required.

- Prior to applying fertilizers, evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over fertilization.
- Apply fertilizers at label rates and no higher.
- Do not apply fertilizers in a way that will result in runoff that may contaminate ground or surface water or escape via airborne drift or fugitive dust.
- Observe riparian corridor setbacks for agricultural cultivation as applicable. These shall be maintained as "no touch" areas and demarcated with appropriate flagging.
- The removal of vegetation is prohibited within riparian setback areas.
- No equipment, vehicles, or other materials shall be stored in the riparian setback areas.
- Composting areas shall not be located in the riparian setback areas.
- Irrigation must be conducted in a manner that does not result in runoff from the cultivated area.
- Any water tanks or storage facilities must obtain permits from the local City or County planning department where required.
- The use of membrane based water bladders is prohibited.
- If using an irrigation system, inspect for and repair leaks prior to planting each year and continuously during the season.
- Irrigation systems shall be equipped with a backflow prevention devices and shutoff valves.
- Recycle or properly dispose of all plastic bags, containers, and irrigation materials.
- Properly dispose of green waste in a manner that does not discharge pollutants to a watercourse. This may be accomplished by composting, chipping, and/or shredding.
- The method of green waste disposal must be documented.
- Used growth medium (soil and other organic medium) shall be handled to minimize or prevent discharge of soil and residual nutrients and chemicals to watercourses. Proper disposal could include incorporating into garden beds, spreading on a stable surface and re-vegetating, storage in watertight dumpsters, or covering with tarps or plastic sheeting prior to proper disposal.
- The method of disposal of growth medium must be documented.
- Compost piles are to be located outside of riparian setbacks for agricultural cultivation and in a manner that will not discharge pollutants to a watercourse.
- If necessary, construct a berm or install fiber roll around compost area to prevent runoff or use straw wattles around perimeter.
- Cover compost piles with tarp or impermeable surface prior to fall rains and continuously throughout the rainy season.
- Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
- Avoid soil disturbance between November 1 and April 15 and during times of active precipitation.

- All exposed and disturbed soil must be covered with a minimum of 2 inches of mulch, such as straw, bark, wood chips, etc., by November 15. Alternatively, establish a thick cover crop over disturbed areas composed of native species.
- Erosion control materials shall be available on site at all times in the form of straw, mulch, wattles, silt fencing, erosion control fabrics, sand bags, or other materials adequate to cover areas of disturbed soil or incipient erosion events.
- In the event of a forecast storm event likely to produce runoff, apply mulch, wattles, or other erosion prevention measures to the disturbed areas prior to rain event.
- Any grading or drainage conducted as part of site preparation shall have permits from local County or City agencies if required.

D.2 EROSION & SEDIMENT CONTROL

- Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season or any predicted rain events.
- Any continuing, approved project work conducted after October 15 shall have erosion control measures completed and up-to-date.
- All erosion control measures shall be inspected daily during severe rain events.
- Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
- Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
- Native species appropriate to the local habitat shall be used for all revegetation purposes. Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
- Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
- The disturbed area will be minimized at all times to only that which is essential for the completion of the project.
- Provide temporary cover over disturbed areas that are not currently being worked on.
- Heavy equipment shall not be used in flowing water.
- Use of heavy equipment shall be avoided or minimized in a channel bottom with rocky or cobbled substrate.
- Heavy equipment shall not introduce chemicals or foreign sediment to the channel (e.g., remove mud from tracks or cover channel work area with plastic sheeting prior to heavy equipment entry).
- When heavy equipment is used, any woody debris and stream bank or streambed vegetation

disturbed shall be replaced to a pre-project density with native species appropriate to the site.

- When possible, existing ingress or egress points shall be used or work shall be performed remotely from the top of the creek banks.
- Divert runoff away from unprotected slopes or loose soils using a combination of mats, geotextiles, silt fencing, wattling, check dams, sediment basins, vegetated buffers, or rock armor.
- Deploy appropriate erosion control measures such as silt fencing or straw wattles around all temporary exposed piles or soil or surface disturbances.
- All temporary exposed piles or soil or surface disturbances shall have tarping and sand bags or other stabilization materials deployed in order to prevent discharge of sediments in the event of a rain or wind event.
- Geotechnical fabric shall be deployed on all exposed dirt surfaces with a slope of greater than 15% and staked in place during ground disturbing activities, and silt fencing deployed on slopes of greater than 15% where appropriate.
- Sand bags, straw bales, or other devices shall be placed at appropriate locations near and alongside the roadsides and swales in anticipation of large storm events.
- Bioswales and cultivation areas including parking areas shall be maintained free of trash including empty soil and pesticide or fertilizer containers.
- Locations of sediment sources shall be identified during rain events and mitigated where appropriate.
- Protect ditch inlets and outlets from erosion using rock armor.
- Silt fencing shall be installed downstream of rock piles, stockpiles, and temporary soils storage areas.
- Desilting or retention basins shall be installed if the capacity of the natural percolation exceeds the inputs during routine storm events.
- Sediment traps shall be used on all exposed driveway surfaces where natural vegetation is not able to be established.
- Exposed unvegetated surfaces will be graveled where appropriate.
- Rock placed for slope protection shall be the minimum necessary to avoid erosion, and shall be part of a design that provides for native plant revegetation and minimizes bank armoring.
- Soil exposed as a result of project work, soil above rock riprap, and interstitial spaces between rocks shall be revegetated with native vegetation by live planting, seed casting, or hydroseeding prior to the rainy season of the year work is completed.
- Avoidance of earthwork on steep slopes and minimization of cut/fill volumes, combined with proper compaction, shall occur to ensure the area is resilient to issues associated with seismic events and mass wasting. If cracks are observed, or new construction is anticipated, consultation with a qualified professional is recommended.
- Culvert fill slopes shall be constructed at a 2:1 slope or shall be armored with rock.

- If it is necessary to conduct work in or near a live stream, the work space shall be isolated to avoid project activities in flowing water.
- Any spoils associated with site maintenance shall be placed in a stable location where it cannot enter a watercourse.
- Sidecasting shall be minimized and shall be avoided on unstable areas or where it has the potential to enter a watercourse.
- Entrance to the project site shall be maintained in a condition that will prevent tracking or flowing of sediment into the public right-of-way.
- All sediment spilled, dropped, washed, or tracked onto the public right-of-ways shall be removed immediately.
- When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-ways.
- When wheel washing is required, it shall be done in an area stabilized with crushed stone that drains into a sediment trap fitted with appropriate erosion control measures.
- To control surface water runoff in and around cultivation areas use fiber rolls or wattling and stake appropriately and perpendicular to the flow path.
- Cover crops should be utilized on all exposed slopes that are not able to be protected by other means.
- Cover crops should be native species as described in the associated biological resources report.
- Rip compacted soils prior to placing spoils to prevent the potential for ponding under the spoils that could result in spoil site failure and subsequent sedimentation.
- Compact and contour stored spoils to mimic the natural slope contours and drainage patterns to reduce the potential for fill saturation and failure.
- Ensure that spoil materials are free of woody debris, and not placed on top of brush, logs or trees.
- Inspect all roads and culverts regularly for blockages.

D.3 WATER USE & POLLUTION

- Ensure that all appropriate water rights permits are filed with the State Water Resources Control Board.
- Notify the California Department of Fish and Wildlife by submitting a Lake and Streambed Alteration (LSA) notification package if the proposed activities involve substantial diversion from or alteration of the bed or bank of a stream or other waterbody.
- Ensure that all water storage features are permitted from the Department of Water Rights if necessary.
- All refueling and pesticide and chemical storage and transfer shall occur greater than 100 feet away from any swales, creeks, or natural areas.

- All refueling and pesticide and chemical storage and transfer shall occur on top of an impermeable metal or other fabric mat that is no less than 2 inches high on all sides and capable of completely containing any spillage.
- Concrete truck and other vehicles shall not be washed out in natural areas or directly onto soil and shall be washed out into a metal or other impermeable basin and disposed of properly such that no water is discharged to the soil.
- All waste shall be kept in plastic drums with tight fitting lids so that water is not able to make contact with the contents and potentially leach to the environment.
- All pesticide sprays shall occur on windless nights for outdoor facilities.
- Chemical or fertilizer wastes shall never be disposed of into swales or creeks and shall be contained inside closed-roof facilities and designated with appropriate labeling until it is possible to dispose of properly.
- Septic leach fields and graywater mulch fields shall be maintained free of large vegetation and not used for aboveground storage that may impact their proper functioning.
- Chemical contamination (fuel, grease, oil, hydraulic fluid, solvents, etc.) of water and soils is prohibited during routine equipment operation and maintenance.
- The use or storage of petroleum-powered equipment shall be accomplished in a manner that prevents the potential release of petroleum materials into waters of the state (Fish and Game Code 5650).
- Schedule excavation and grading activities for dry weather periods.
- Designate a contained area for equipment storage, short-term maintenance, and refueling. Ensure it is located at least 50 feet from waterbodies.
- Inspect vehicles for leaks and repair immediately.
- Clean up leaks, drips and other spills immediately to avoid soil or groundwater contamination.
- Conduct major vehicle maintenance and washing offsite.
- Ensure that all spent fluids including motor oil, radiator coolant, or other fluids and used vehicle batteries are collected, stored, and recycled as hazardous waste offsite.
- Ensure that all construction debris is taken to appropriate landfills and all sediment disposed of in upland areas or offsite, beyond the 100-year floodplain.
- Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. If necessary for dust control, use only a minimal amount of water.
- Sweep up spilled dry materials immediately.
- Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill.
- Spoils shall not be placed or stored in locations where soils are wet or unstable, or where slope stability could be adversely affected.
- Do not locate spoil piles in or immediately adjacent to wetlands and watercourses.

- Store spoil piles in a manner (e.g. cover pile with plastic tarps and surround base of pile with straw wattle) or location that would not result in any runoff from the spoil pile ending up in wetlands and watercourses.
- Keep temporary disposal sites out of wetlands, adjacent riparian corridors, and ordinary high water areas as well as high risk zones, such as 100-year floodplain and unstable slopes.
- Conduct operations on a size and scale that considers available water sources and other water use and users in the planning watershed.
- Implement water conservation measures such as rainwater catchment systems, drip irrigation, mulching, or irrigation water recycling where possible.
- Hauled water utilized for irrigation shall be documented via receipt or similar, and show the date, name, and license plate of the water hauler, and the quantity of water purchased.
- If using a water storage tank, do not locate the tank in a flood plain or next to equipment that generates heat. Locate the tank so it is easy to install, access, and maintain.
- Vertical tanks should be installed according to manufacturer's specifications and placed on firm, compacted soil that is free of rocks/sharp objects and capable of bearing the weight of the tank and its maximum contents.
- Install float valves on tanks to prevent them from overflowing.
- Place proper lining or sealing in ponds to prevent water loss.

D.4 ROAD MAINTENANCE & GENERAL CONSTRUCTION

- Always limit work to the appropriate work date windows considering wet weather, migratory bird and other biological and environmental constrains that may be placed on the project.
- Proper design and location of roads and other features is critical to ensuring that a road or other feature be adequately drained and is best accomplished through consultation with a qualified professional.
- Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
- If inspection identifies surface rills or ruts, then surfacing and drainage likely needs maintenance. Consultation should be made with a licensed professional to design appropriate erosion control strategies.
- Design of roads should allow for sheet flow of water and use water bars and rolling dips to break up slope length.
- Vehicle speed shall be kept to a maximum of 10 mph while onsite to minimize dust generation.
- All unvegetated and unpaved roadways and vehicle turnarounds shall be graveled to a depth of not less than 1" in order to prevent dust and sediment entrainment.

- Applicant will use geotechnical fabric or similar materials on exposed slopes, and distribute weed-free straw mulch wherever possible on exposed surfaces on the perimeter of all graded roads and graveled areas.
- Roads and the berms alongside all roads shall be maintained free of headcuts, gullies, stutter bumps, and other erosion features capable of discharging sediment to adjacent grassland areas.
- Roads will be graveled with clean rock whenever required to prevent dust and sediment erosion during the wet season.
- Whenever possible, road maintenance activities shall be performed from May 1 to October 15.
- Work performed outside of this window should take extra precautions for winter weather erosion control prevention beyond that which is described in this Plan.
- A 48 hour advance forecast for rain shall trigger a temporary cessation of work, and all soils piles will need to be covered and secured with sandbags or other materials.
- Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
- Whenever feasible, finished grades shall not exceed 1.5:1 side slopes. In circumstances where final grades cannot achieve 1.5:1 slope, additional erosion control or stabilization methods shall be applied as appropriate for the project location.
- Spoils and excavated material not used during project activities shall be removed and placed outside of 100-year floodplains.
- Upon completion of grading, slope protection of all disturbed sites shall be provided prior to the rainy season through a combination of permanent vegetative treatment, mulching, geotextiles, and/or rock, or equivalent.
- Position vehicles and other apparatus so as to not block emergency vehicle access.
- After construction is complete, all storm drain systems and culverts shall be inspected and cleared of accumulated sediment and debris.
- Sediment barriers including wattles and silt fencing should be checked for sediment accumulation following each significant rainfall and sediment removed or the feature replaced as needed.
- Road drainage shall be discharged to a stable location away from a watercourse.
- Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream.
- Within areas with potential to discharge to a watercourse (i.e. within riparian areas of at least 200 feet of a stream) road surface drainage shall be filtered through vegetation, slash, or other appropriate material or settled into a depression with an outlet with adequate drainage.

D.5 SWALE & VEGETATION MANAGEMENT

- The work area shall be restored to pre-project work condition or better.
- Any stream bank area left barren of vegetation as a result of cleanup/restoration activities shall be stabilized by seeding, replanting, or other means with native trees, shrubs, and/or grasses appropriate to the site prior to the rainy season in the year work was conducted.
- Ensure that vegetated swales are properly formed, allow moderate velocity water passage without causing sediment entrainment, and are otherwise functioning properly.
- Create and expand vegetated bioswales where necessary, should additional construction or road maintenance be required, in order to maintain flow without scour.
- All bioswales and other drainage features requiring revegetation will be seeded with native vegetation and lawns and hedgerows maintained in good health and watered in dry years.
- Vegetation including grasses shall be mowed as necessary to create fire breaks and to prevent the accumulation of fuels that would be able to sustain a ground fire.
- All vegetation shall be surveyed on foot once a year by staff and new outbreaks of any invasive weeds identified by the California Invasive Plant Council as noxious or invasive to be removed by the owner or qualified landscaping professionals.
- Channels and swales that show evidence of overland flow and scour (e.g. bare of vegetation) shall be seeded with native grasses such as *Stipa pulchra*, *Hordeum brachyantherum*, *Elymus glaucus*, and *Bromus carinatus*, and kept vegetated at all times.
- If shrubs and non-woody riparian vegetation are disturbed, they shall be replaced with similar native species appropriate to the site.
- Disturbance to native shrubs, woody perennials or tree removal on the streambank or in the stream channel shall be avoided or minimized.
- If riparian trees over six inches dbh (diameter at breast height) are to be removed, they shall be replaced by native species appropriate to the site at a 3:1 ratio.
- Where physical constraints in the project area prevent replanting at a 3:1 ratio and canopy cover is sufficient for habitat needs, replanting may occur at a lesser replacement ratio.
- Vegetation planting for slope protection purposes shall be timed to require as little irrigation as possible for ensuring establishment by the commencement of the rainy season.
- The spread or introduction of exotic plant species shall be avoided to the maximum extent possible by avoiding areas with established native vegetation during cleanup/restoration activities, restoring disturbed areas with appropriate native species, and post-project monitoring and control of exotic species.
- Removal of invasive exotic species after construction activities is strongly recommended. Mechanical removal (hand tools, weed whacking, hand pulling) of exotics shall be done in preparation for establishment of native plantings.
- Where permanent soil stabilization is required a locally-appropriate mix of native grass species shall be used such as a mix containing *Nassella pulchra*, *Hordeum brachyantherum*, *Elymus glaucus*, and *Bromus carinatus* or as described in the site's Biological Resources Assessment.

- Entire cultivation site shall be seeded and maintained as a permanent non-tilled cover crop during non-usage times. Straw mulch shall be used where native seeding is not practicable.
- Use mulches (e.g. wood chips or bark) in cultivation areas that do not have ground cover to prevent erosion and minimize evaporative loss.
- Mulch shall be applied at a rate of 4000 lbs / acre and seeding shall be applied to achieve 70% cover in the first year or approximately 200 lbs / acre.
- Annual inspections for the purpose of assessing the survival and growth of revegetated areas and the presence of exposed soil shall be conducted for three years following project work.
- Dischargers and/or their consultant(s) or third party representative(s) shall note the presence of native/non-native vegetation and extent of exposed soil, and take photographs during each inspection.
- Dischargers and/or their consultant(s) or third party representative(s) shall provide the location of each work site, pre- and post-project work photos, diagram of all areas revegetated and the planting methods and plants used, and an assessment of the success of the revegetation program in the annual monitoring report as required under relevant state and local water board regulations.

D.6 IRRIGATION & CULTIVATION MANAGEMENT

- Cultivation-related waste shall be stored in a place where it will not enter a stream.
- Soil bags and other garbage shall be collected, contained, and disposed of at an appropriate facility, including for recycling where available.
- Pots shall be collected and stored where they will not enter a waterway or create a nuisance.
- Plant waste and other compostable materials be stored (or composted, as applicable) at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.
- Imported soil for cultivation purposes shall be minimized. In the event that containers (e.g. grow bags or grow pots) are used for cultivation, reuse of soil shall be maximized to the extent feasible.
- Spent growth medium (i.e. soil and other organic medium) shall be handled to minimize discharge of soil and residual nutrients and chemicals to watercourses. Proper handling of spent soil could include incorporating into garden beds, spreading on a stable surface and revegetation, storage in watertight dumpsters, covering with tarps or plastic sheeting prior to proper disposal.
- Trash containers of sufficient size and number shall be provided and properly serviced to contain the solid waste generated by the project.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.

- Use lined bins or dumpsters to reduce leaking of liquid waste. Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash. Consider using refuse containers that are bear-proof and/or secure from wildlife.
- Refuse shall be removed from the site on a frequency that does not result in nuisance conditions, transported in a manner that they remain contained during transport, and the contents shall be disposed of properly at a proper disposal facility.
- Ensure that human waste disposal systems do not pose a threat to surface or ground water quality or create a nuisance. Onsite treatment systems should follow applicable County ordinances for human waste disposal requirements, consistent with the applicable tier under the State Water Resources Control Board Onsite Waste Treatment System Policy.
- Install buffer strips, bioswales, or vegetation downslope of cultivation areas to filter runoff of chemicals from irrigation.
- Irrigate at rates to avoid or minimize runoff.
- Regularly inspect and repair leaks in mains and laterals, in irrigation connections, or at the ends of drip tape and feeder lines.
- Design irrigation system to include redundancy (i.e., safety valves) in the event that leaks occur, so that waste of water is prevented and minimized.
- Recapture and reuse irrigation runoff (tailwater) where possible, through passive (gravity-fed) or active (pumped) means.
- Construct retention basins for tailwater infiltration; percolation medium may be used to reduce pollutant concentration in infiltrated water. Constructed treatment wetlands may also be effective at reducing nutrient loads in water.
- Ensure that drainage and/or infiltration areas are located away from unstable or potentially unstable features.
- Regularly replace worn, outdated or inefficient irrigation system components and equipment.
- Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over-fertilization.
- All chemicals shall be stored in a manner, method, and location that ensures that there is no threat of discharge to waters of the State.
- Products shall be labeled properly and applied according to the label.
- Use integrated pest management strategies that apply pesticides only to the area of need, only when there is an economic benefit to the grower, and at times when runoff losses are least likely.
- Periodically calibrate pesticide application equipment.

- Use anti-backflow devices on water supply hoses, and other mixing/loading practices designed to reduce the risk of runoff and spills.
- Petroleum products shall be stored with a secondary containment system such as a pan or a tub
- Throughout the rainy season, any temporary containment facility shall have a permanent cover and side-wind protection, or be covered during non-working days and prior to and during rain events.
- Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.
- Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials shall be covered during non-working days and prior to rain events.
- Have proper chemical and fertilizer storage instructions posted at all times in an open and conspicuous location.
- Prepare and keep a spill prevention and cleanup plan onsite when dealing with any hazardous materials.
- Keep ample supply of appropriate spill clean-up material near storage areas.
- Plant cover crops to boost soil fertility, improve soil texture, and protect from storm caused sediment runoff.

APPENDIX E: STREAM CLASSIFICATION CRITERIA

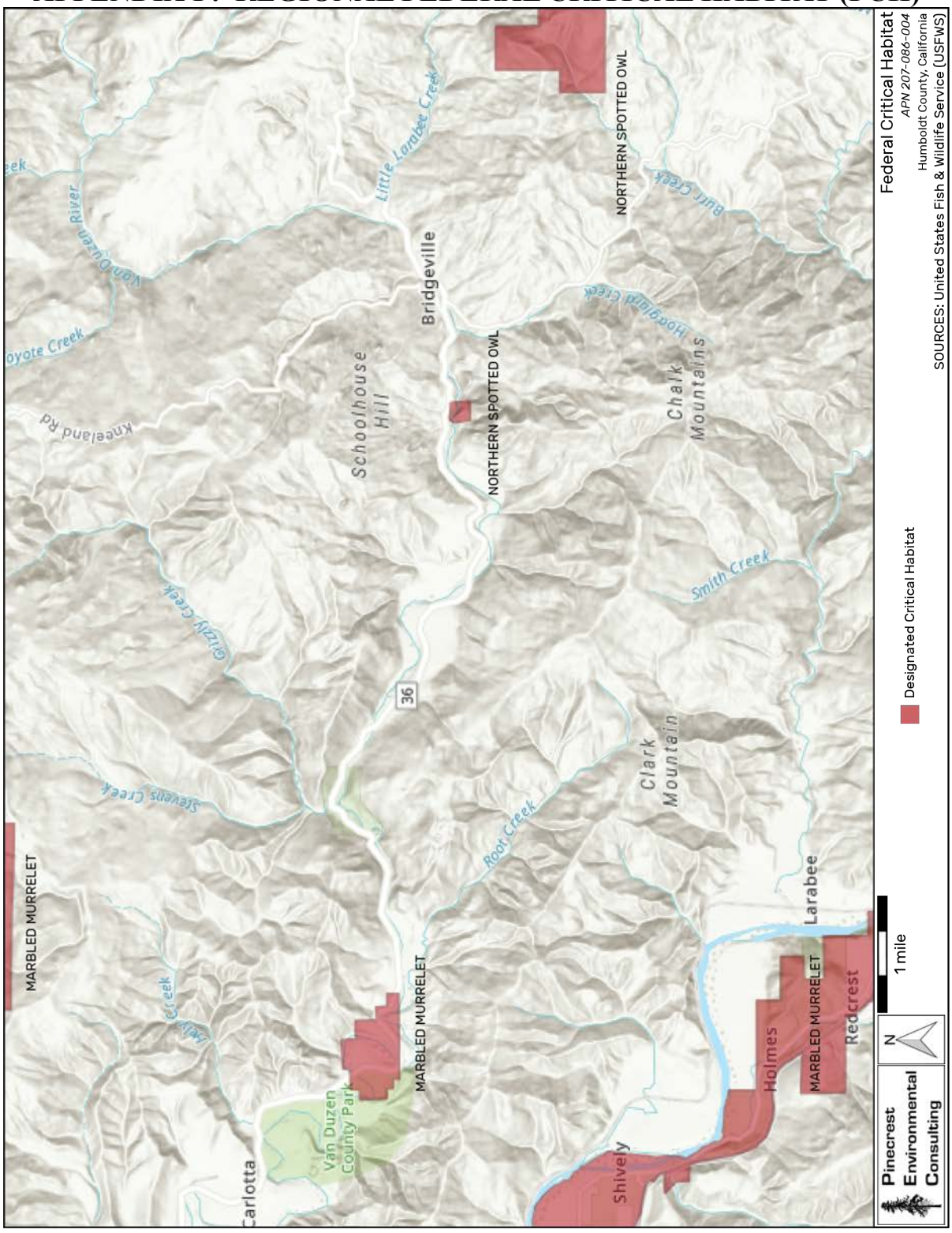
The following stream classification criteria were copied form the California Department of Forestry & Fire Protection *Forest Practice Rules* (CALFIRE 2017) and is widely used by many state and local agencies. Most state and local jurisdictions require setbacks of 50, 100, and 150 feet from Class III, II, and I streams, respectively, although greater setbacks may be required in some jurisdictions.

Watercourse – a natural or artificial channel through which water flows.

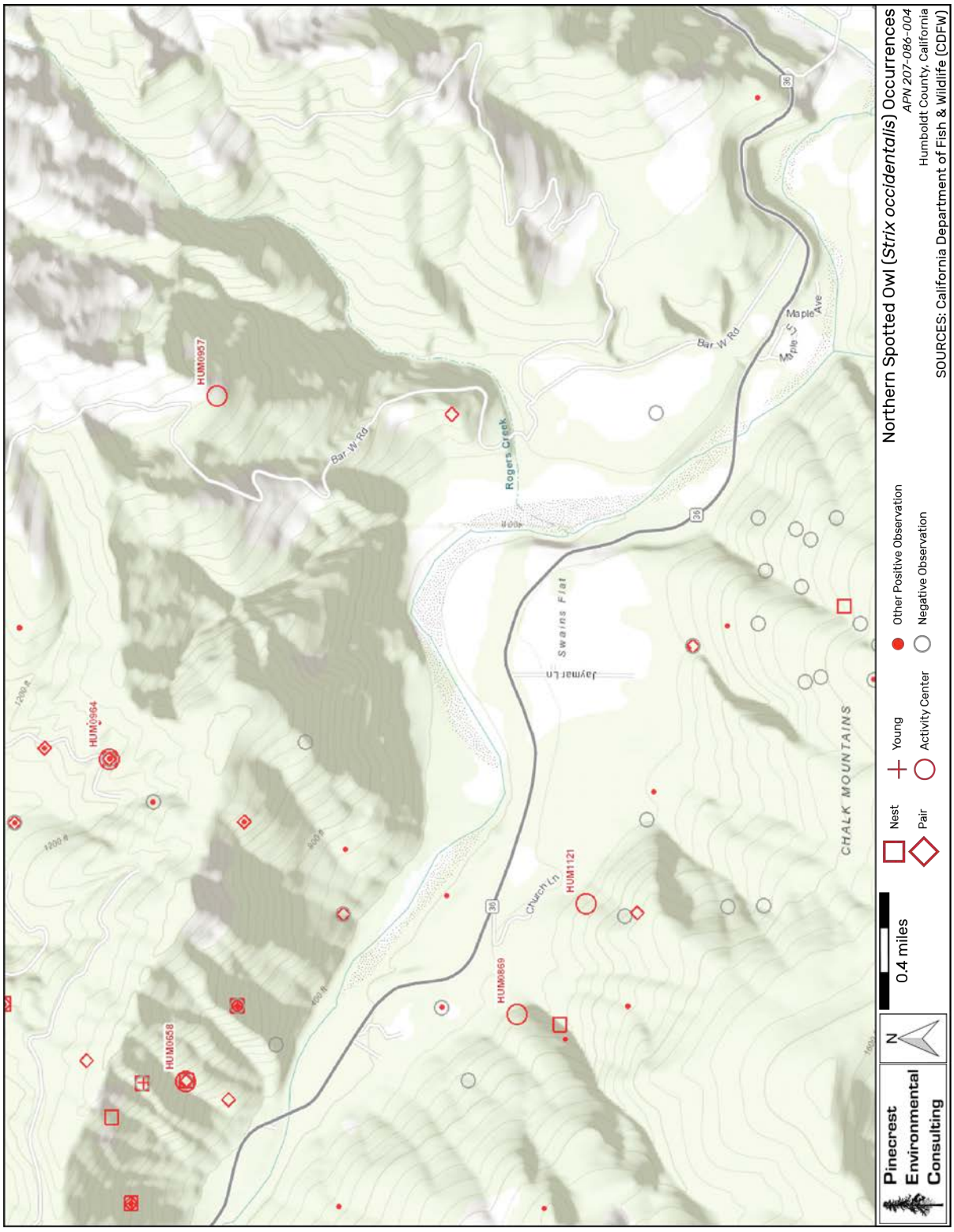
- Perennial watercourse (Class I*):
  1. In the absence of diversions, water is flowing for more than nine months during a typical year,
  2. Fish always or seasonally present onsite or includes habitat to sustain fish migration and spawning, and/or
  3. Spring: an area where there is concentrated discharge of ground water that flows at the ground surface. A spring may flow any part of the year. For the purpose of this Policy, a spring does not have a defined bed and banks.
- Intermittent watercourse (Class II*):
  1. In the absence of diversions, water is flowing for three to nine months during a typical year,
  2. Provides aquatic habitat for non-fish aquatic species,
  3. Fish always or seasonally present within 1,000 feet downstream, and/or
  4. Water is flowing less than three months during a typical year and the stream supports riparian vegetation.
- Ephemeral watercourse (Class III*): In the absence of diversion, water is flowing less than three months during a typical year and the stream does not support riparian vegetation or aquatic life. Ephemeral watercourses typically have water flowing for a short duration after precipitation events or snowmelt and show evidence of being capable of sediment transport.
- Other watercourses (Class IV*): Class IV watercourses do not support native aquatic species and are man-made, provide established domestic, agricultural, hydroelectric supply, or other beneficial use.

*Except where more restrictive, stream class designations are equivalent to the Forest Practice Rules Water Course and Lake Protection Zone definitions (California Code of Regulations, title 14, Chapter 4. Forest Practice Rules, Subchapters 4, 5, and 6 Forest District Rules, Article 6 Water Course and Lake Protection).

APPENDIX F: REGIONAL FEDERAL CRITICAL HABITAT (FCH)



APPENDIX G: REGIONAL NSO OCCURRENCES



APPENDIX H: AVOIDANCE & MINIMIZATION MEASURES FOR WORKING AROUND FYLF & NSO

A comprehensive list of BMP's and avoidance measures relating to erosion, sediment control, water use, vegetation maintenance, and industrial practices are provided in Appendix D. However, below are some specific Avoidance & Minimization Measures (AMM) designed to ensure that there will be no incidental take of any special status animals during the course of construction or operation of the proposed commercial *Cannabis* farm for both Foothill yellow-legged frog (*Rana boylii*; FYLF) and Northern spotted owl (*Strix occidentalis*; NSO).

- All employees and contractors including one-time contractors and day-laborers shall be distributed cards with visual identifications of both FYLF and NSO, including both male and female, and juvenile and adult forms, and be briefed on all of the following AMMs contained herein.

- Operator should obtain signatures from all employees at the bottom of a copy of these A&M's on an annual basis to demonstrate understanding of these measures.

- Any animals of FYLF or NSO observed onsite should result in immediate stoppage of all work, and allowed to leave the site unmolested.

- All animals observed onsite should be allowed to leave the premises voluntarily, unmolested, and their locality should recorded in the CNDDB database if possible.

- Vehicle speeds should be limited to 5 mph all year, with 3 mph limit during FYLF breeding and migration season, October to June.

- Avoid ground disturbance including trenching, grading, or road scraping without first clearing the site from a qualified biologist.

- All roadways and culverts shall be inspected once before major rain events and once after to ensure that all erosion control materials are effective.

- Operator shall keep onsite sufficient emergency road erosion repair materials to fix sediment discharge problems during storms in real-time.

- All containers and other vessels shall be checked before use to ensure that no animals are inside.

- Vessels shall be turned over and not made into "pitfall traps" out of which animals cannot escape.

- No uncovered holes with vertical sides greater than 5 inches should exist for more than 24 hours.

- Native woody species should be planted wherever revegetation is required.

- Preconstruction breeding bird surveys for NSO are recommended if tree removal is to take place.

- Avoid loud noises or heavy machinery work during the breeding and nesting window which is generally February 1 to September 1.

- Aerial wires, strings, or nets or other hazards that could impact birds including owls while in flight or cause entanglement are prohibited.

- All lights shall be shielded from glare escaping upwards or sideways in the evenings and at night, and all exterior lights turned off when not in use.