Biological Resources Assessment
12990 Spruce Grove Road
Lower Lake, Lake County, California
APN 012-067-40

Prepared For:

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Prepared by:

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OCTOBER 2019

This assessment is based on information available at the time of the study and on-site conditions that were observed on the date of the site visit referenced in the report. In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of the biologist with experience working with the species and habitats. For some threatened and endangered species, a site survey at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. Please be advised it is your responsibility to make sure you comply with the County ordinances regarding setbacks, endangered species regulations, and other natural resource regulations that may pertain to your property.

EXECUTIVE SUMMARY

This report presents the results of a biological resources assessment conducted for approximately three acres located at 12990 Spruce Grove Road in Lower Lake, Lake County, California. The project site is located on a portion of Assessor Parcel 012-067-40 on Section 19 of the Middletown U.S.G.S. topographic map approximately 9 miles north east of Middletown.

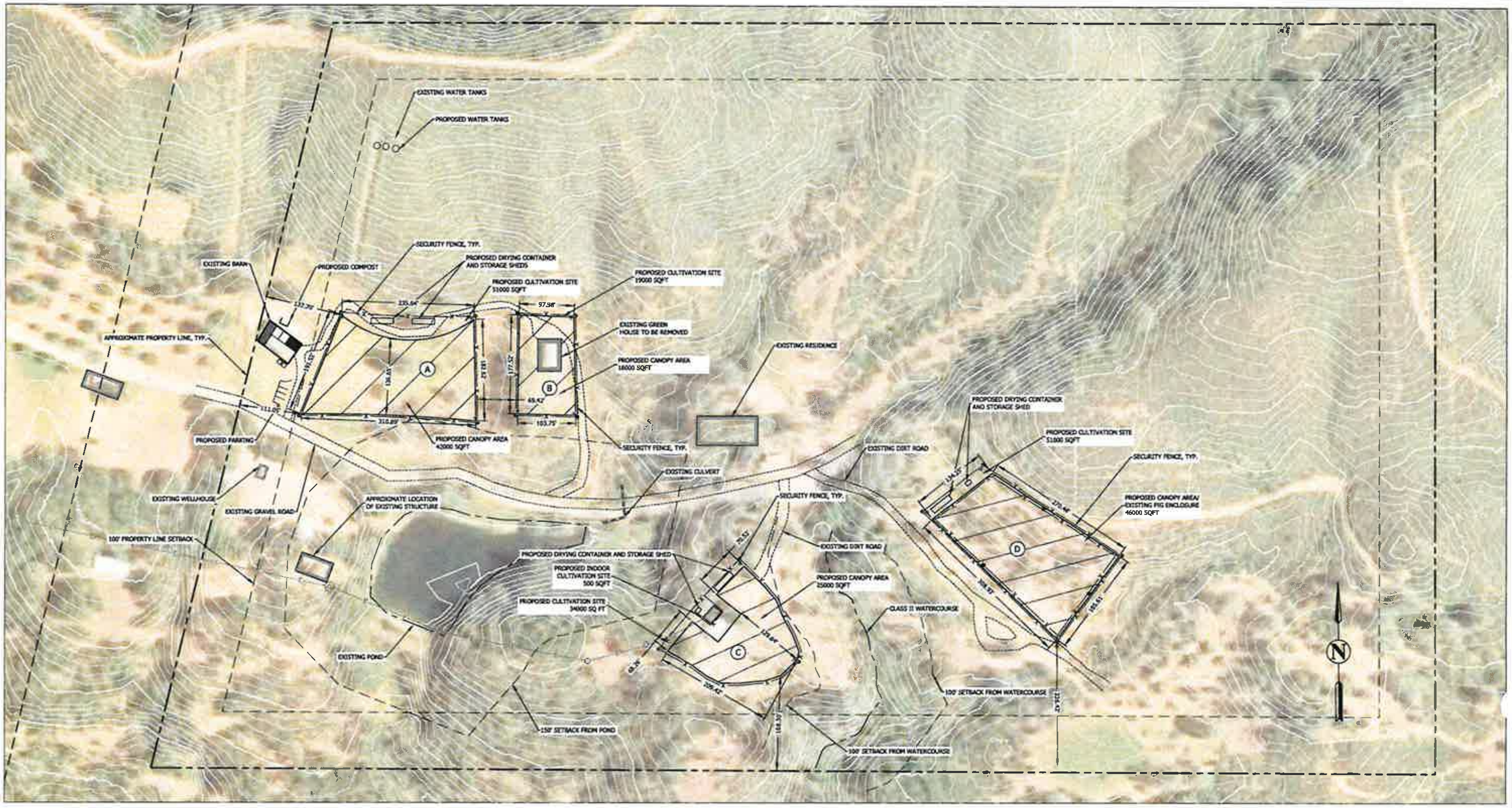
The purpose of the assessment is to identify special-status plant and wildlife species and sensitive habitats (including wetlands) that have the potential to occur on or in the vicinity of the study area to determine if a proposed one-acre outdoor grow could potentially affect these resources. Based on information and data collected for the analysis, appropriate mitigation measures designed to minimize and/or avoid potential biological resource impacts are provided.

The property is accessed by an existing dirt road east of Spruce Grove Road at an elevation of approximately 1600 feet. The areas proposed for cultivation include an existing grassland area, an existing cannabis outdoor grow, and a disturbed area to be used for an indoor grow as shown on the site plan.

A pond is located south and west of the proposed cannabis grow areas and is potentially subject to U.S. Army Corps of Engineers jurisdiction as described in Section 2.0. A setback of 150 feet from this watercourse will be maintained per State Water Quality Control Board policy for cannabis projects. A small ephemeral drainage approximately 2 feet wide was identified on the eastern portion of the Study Area. A 100-foot setback from this area will be maintained in accordance with setbacks from Class 2 watercourses. The adjacent grasslands and trees provide potential habitat for nesting birds and raptors as described in Section 3.0. The pond and adjacent grasslands provide potential habitat for western pond turtle as well. The proposed grow sites provides a relatively low potential for special-status plants as referenced in this report in Section 4.0.

Figure 1: Location of Project Area

12990 Spruce Grove Road, Lower Lake, CA



PLAN VIEW

0 40 80 160

SCALE 1"=80'

NOT FOR CONSTRUCTION

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Job: 1221-18 October 18, 2019

12990 Spruce Grove Road
CULTIVATION EXHIBIT

Eddie Alvarez
12990 Spruce Grove Road, Lower Lake, CA 95457
APN 012-067-40

1.0 INTRODUCTION

This report presents the results of a biological resources assessment conducted for approximately three acres located at 12990 Spruce Grove Road, Lake County, California. The project site is located on a portion of Assessor Parcel 012-067-40 on Section 19 of the Middletown U.S.G.S. topographic map approximately 9 miles northeast of Middletown. Historically much of the site was used for walnut orchards and as a result native vegetation removed.

The purpose of the assessment is to identify special-status plant and wildlife species and sensitive habitats (including wetlands) that have the potential to occur on or in the vicinity of the study area to determine if a proposed one-acre outdoor grow could potentially affect these resources. Based on information and data collected for the analysis, appropriate mitigation measures designed to minimize and/or avoid potential biological resource impacts are provided.

The property is accessed by an existing dirt road east of Spruce Grove Road and occurs at an elevation of approximately 1,600 feet.

Areas proposed for cannabis cultivation are shown on the site plans and include a 3-acre outdoor cultivation project with an additional 500 square feet of indoor cultivation.

Area A proposed for outdoor cannabis operation looking northeast.

Area D to be expanded for outdoor cultivation on southeast portion of property.

Existing structure on Area C.

Hillside used to graze pigs proposed for outdoor grow on Area D.

According to the project applicant, there will not be any water diversion from the pond. Water tanks located on the hilltop north of proposed grow area A will be used as a water source for the grow operations.

2.0 WETLANDS ASSESSMENT

2.1 Corps of Engineers Jurisdictional Criteria Review

Unless exempt from regulation, all proposed discharges of dredged or fill material into waters of the United States require U.S. Army Corps of Engineers (Corps) authorization under Section 404 of the Clean Water Act (33 U.S.C. 1344) and Clean Water Act Section 401 authorization from the Regional Water Quality Control Board (RWQCB). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), wetlands (excluding isolated wetlands for the Corps), and farmed wetlands.

The Corps identifies wetlands using a "multi-parameter approach" which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. The *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West*, which was released in early 2007 and revised in 2008 (version 2.0), is utilized when conducting jurisdictional wetland determinations in areas identified within the boundaries of the Arid West (U.S. Army Corps of Engineers, 2008). The project site falls within the Arid West region and wetlands identified on the site were delineated using that guidance.

2.1.1 Potential Wetlands

Section 328.3 of the Federal Code of Regulations defines wetlands as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

EPA, 40 CFR 230.3 and CE, 33 CFR 328.3 (b)

The three parameters used to delineate wetlands are the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. According to the Corps Manual, for areas not considered "problem areas" or "atypical situations":

"....[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

<u>Vegetation</u>

Plant species identified are assigned a wetland status according to the U.S. Fish and Wildlife Service list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

OBL	Always found in wetlands	>99% frequency
FACW	Usually found in wetlands	67-99%
FAC	Equal in wetland or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
UPL/NL	Upland/Not listed (upland)	<1%

The Corps Manual and Supplements require that a three-step process be conducted to determine if hydrophytic vegetation is present. The first step is the Dominance Test (Indicator 1); the second is the Prevalence Index (Indicator 2); the third is Morphological Adaptations (Indicator 3). The Dominance Test requires the delineator to apply the "50/20 rule". The dominant species are chosen independently from each stratum of the community. In general, dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are defined as the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails the 50/20 rule and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1, but hydric soils and wetland hydrology are both present, the delineator must apply the Indicator 2, Prevalence Index. The Indicator 3, Morphological Adaptations, is rarely used in this region.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation or oxidized root channels, or secondary indicators such as the FAC-neutral test or the presence of a shallow aquitard. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Federal Register July 13, 1994, U.S. Department of Agriculture, NRCS

Soils formed over long periods under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. The supplement provides a list of the hydric soil indicators that are known to occur in region. Soil samples were collected and described according to the methods provided in the supplements. Soil chroma and values were determined using a Munsell soil color chart (Kollmorgen 1975). If any of the soil samples met one or more of the hydric soil indicators described in the supplement hydric soils were determined to be present.

2.1.2 Waters of the U.S. (Other Waters)

"Other waters" or "Waters of the United States" (WUS) other than wetlands are also potentially subject to Corps jurisdiction. WUS subject to Corps jurisdiction include ponds, lakes, rivers, streams (including ephemeral and intermittent streams), and all areas below the High Tide Line (HTL) subject to tidal influence. Jurisdiction in non-tidal areas extends to the ordinary high water mark (OHWM) defined as:

"...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."
Federal Register Vol. 51, No. 219, Part 328.3 (e). November 13, 1986

2.2 Central Valley Regional Water Quality Control Board

The Regional Water Quality Control Board regulates waters of the State pursuant to Sections 13260(a)(1) and 13050(e) of the State Water Code, and the Porter Cologne Act. In addition, anyone proposing to conduct a project that requires a federal permit or involves dredge or fill activities that may result in a discharge to U.S. surface waters and/or "Waters of the State" are required to obtain a Clean Water Act (CWA) Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) from the Regional Water Quality Control Board, verifying that the project activities will comply with state water quality standards. The most common federal permit for dredge and fill activities is a CWA Section 404 permit issued by the Corps of Engineers (North Coast Regional Water Quality Control Board, 2007). In general, the RWQCB employs similar wetland delineation techniques for identifying wetland areas potentially subject to its regulation.

Section 401 of the CWA grants each state the right to ensure that the State's interests are protected on any federally permitted activity occurring in or adjacent to Waters of the State. In California, the Regional Water Quality Control Boards (Regional Board) are the agency mandated to ensure protection of the State's waters. So if a proposed project requires a U.S. Army Corps of Engineers CWA Section 404 permit, falls under other federal jurisdiction, and has the potential to impact Waters of the State, the Regional Water Quality Control Board will regulate the project and associated activities through a Water Quality Certification determination (Section 401) (North Coast Regional Water Quality Control Board, 2007).

However, if a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a fill discharge to "Waters of the State", the Regional Board has the option to regulate the project under it's state authority (Porter-Cologne) in the form of Waste Discharge Requirements or Waiver of Waste Discharge Requirements (North Coast Regional Water Quality Control Board, 2007). Waters of the State include isolated wetlands, which are not regulated by the Corps.

2.3 California Department of Fish and Wildlife

Activities that result in the substantial modification of the bed, bank or channel of a stream or lake may require a Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600-1607 of the California Fish and Game Code. On streams, creeks and rivers, the extent of CDFW jurisdiction extends from the top of bank to top of bank or the outer limits of the riparian canopy, whichever is wider. There is no proposed use of the pond and a setback of 150 feet will be maintained. The ephemeral drainage ditch will also be avoided with a setback.

2.4 Background review

Prior to conducting the on-site wetlands assessment within the study area, various background materials relating to the site were reviewed. These include aerials from Google earth and the Middletown U.S.G.S. 7.5-minute quadrangle. A pond was identified south and west of the proposed grow areas but this feature will not be impacted by project activities. Topographic relief suggests the potential occurrence of ephemeral drainages near the property mostly to the north. Asbill Creek is shown as a blue line creek on the USGS map and on Google earth but this creek is well outside the project area to the northwest and upslope of the proposed operation.

Additionally, the Soil Survey of Lake County (web Soil Survey) was reviewed to determine if any of the soils on the project site are mapped as hydric soils. The presence of a hydric soil-mapping unit on a project site suggests the presence of potential wetland habitats and therefore is another tool used in potential wetland identification.

Soils on the site are mapped as Skyhigh-Asbill complex on the northern portion of the site which is mostly chaparral habitat. The remainder of the site, with the exception of the pond, is mapped as Sobrante-Guenoc-Hambright complex 15-30 percent slopes. Neither of these soil units is listed as a hydric soil on the National Hydric Soil List.

2.5 Wetland Assessment and Results

On August 7, 2019 a wetland delineation was conducted within Study Area. The parcels were walked to identify potential wetlands based on visual observation; if a potential wetland feature was identified (primarily by presence of hydrophytic vegetation or soil saturation or ponding or evidence of ponding such as algal matting) a data sample point was taken.

A large pond is located to the west and south of the proposed grow areas but a setback of at least 150 feet per State Water Quality Control Board requirements for perennial watercourses will be maintained for this area. This area is shown on Figure 1 and on the site plans. An ephemeral drainage ditch measuring approximately 2 feet wide was observed on the southern portion of the property north of the pond and west of grow area C. This area has a rocky substrate and appears to only convey water during storm events.

Pond located west and south of proposed grow areas.

3.0 SPECIAL-STATUS SPECIES REGULATORY FRAMEWORK

Special-status plants and animals are legally protected under the State and Federal Endangered Species Acts or other regulations, and species that are considered rare by the scientific community. Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special status invertebrates are all considered special status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal.

To obtain up-to-date conservation information U.S. Fish and Wildlife Service (USFWS) species lists were reviewed for federally listed species (including Proposed and Candidate species) and California Department of Fish and Wildlife (CDFW) species lists for State of California listed species were also reviewed. Special-status species also include those with California Rare Plant Rank (CRPR) 1A (Plants Presumed Extinct in California), CRPR 1B (Plants Rare, Threatened, or

Endangered in California and Elsewhere), or CRPR 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere), as indicated by the CNPS *Inventory* (CNPS 2019). Impacts to these species must be reviewed under the provisions of the California Environmental Quality Act (CEQA) Guidelines.

Rare plants are defined here to include: (1) all plants that are federal- or state listed as rare, threatened, or endangered, or a candidate for listing; (2) all plants ranked by the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1,2, 3, or 4. Locally rare species if present, are also included in this report.

3.1 Special-status Animals

3.1.1 Background Review

The California Department of Fish and Wildlife's Natural Diversity Database (CNDDB) was reviewed (Middletown and surrounding quadrangles) to identify special-status species potentially occurring on or in the vicinity of the project site. Species recorded as occurring within a 5-mile radius are illustrated on Figure 2.

3.1.2 Field Reconnaissance

Located in a rural part of Lake County and abutting large open spaces, the project site and environs provide habitat for a variety of terrestrial wildlife including mountain lion, coyote, fox, rabbits, squirrels and skunks and a variety of avian species including downy woodpecker, Steller's jay, red-tailed hawk and turkey vulture.

On August 7, 2019 a reconnaissance level survey of the site was conducted. The focus of the survey was to identify whether suitable habitat elements for each of the special status species documented in the surrounding vicinity or in the range of the project site are present on the project site or not and whether the project would have the potential to result in impacts to any of these species and/or their habitats either on- or off-site. Habitat elements examined included the presence of: dispersal habitat, foraging habitat, refugia or estivation habitat, and breeding (or nesting) habitat.

3.1.3 Results

Eight special-status wildlife species have been documented within five miles of the Project Site (Figure 2). Based on the biological communities present on the project site, the site and surrounding grasslands has the potential to provide potential habitat for nesting birds and raptors. Western pond turtle may also be present in the pond located east of the site and could use adjacent grasslands for nesting. Trees on the site provide potential habitat for special-status bats but according to the project applicant no trees will be removed with project activities.

Species that may potentially be impacted by the proposed projects are described below.

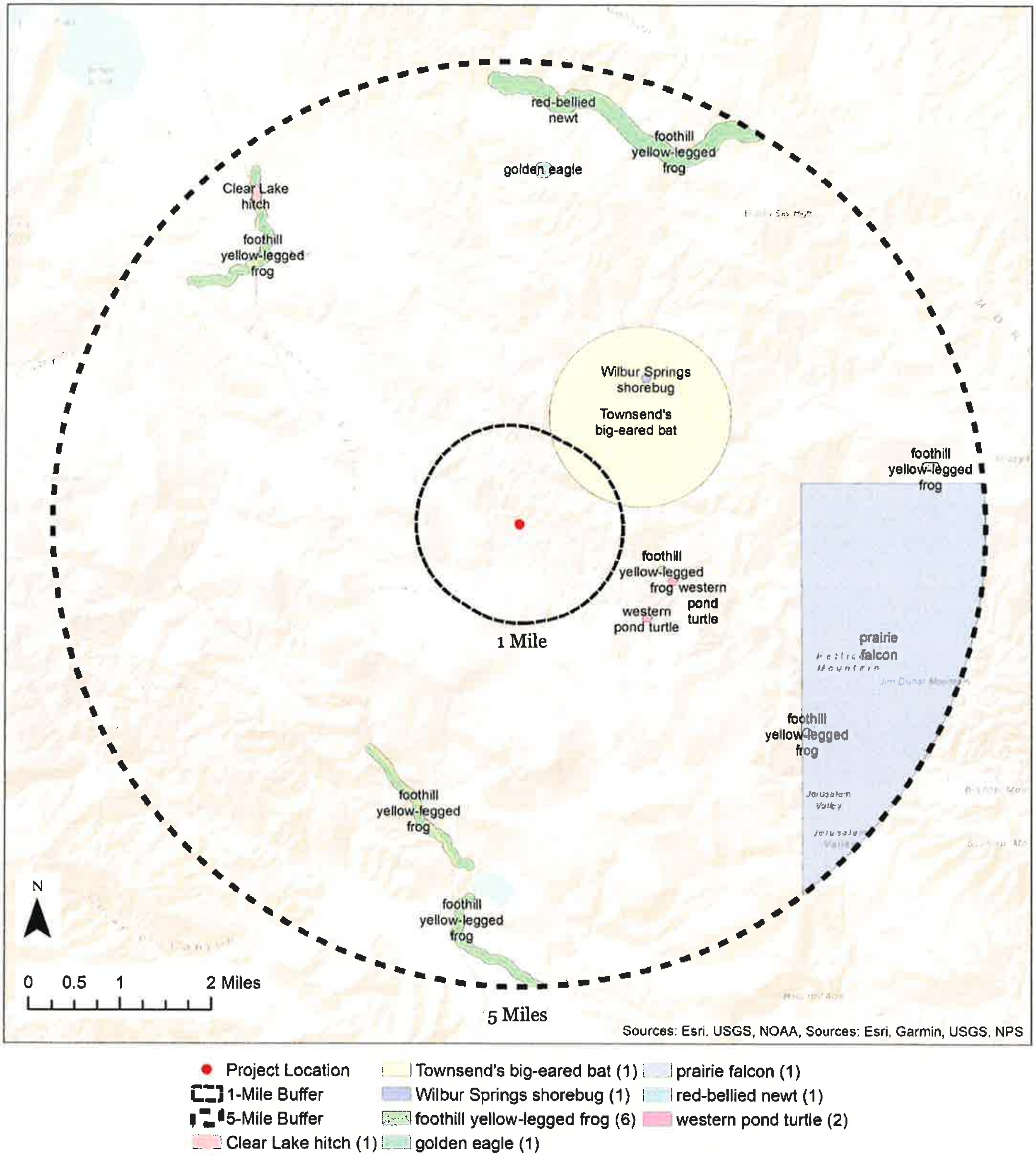
Nesting Birds

The grasslands and oak trees on and adjacent to the site provides potential nesting habitat for a variety of nesting birds and raptors. Birds and raptors are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). Their nest, eggs, and young are also protected under California Fish and Wildlife Code (§3503, §3503.5, and §3800). In addition, raptors such as the prairie falcon (*Falco Mexicanus*) are "fully protected" under Fish and Wildlife Code (§3511). Fully protected raptors cannot be taken or possessed (that is, kept in captivity) at any time. Nesting season for birds in California generally occurs between February 1st and August 15th.

Western pond turtle

The Western pond turtle (*Emys marmorata)*(aka Pacific pond turtle) is the only native freshwater turtle in California. The species is considered a Species of Special Concern by the California Department of Fish and Wildlife. This turtle is uncommon to common in suitable aquatic habitat throughout California. Western pond turtle inhabits annual and perennial aquatic habitats including man-made habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. To escape periods of high water flow, high salinity, or prolonged dry conditions, Western pond turtle may move upstream and/or take refuge in vegetated, upland habitat for up to four months, though aquatic habitat is preferred (Rathbun et al. 2002). Western pond turtle nests from late April through July. This species requires open, dry upland habitat with friable soils for nesting and prefer to nest on unshaded slopes within 5 to 100 meters of suitable aquatic habitat. Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year. Western pond turtle may be present in the pond south and east of the grow site and may use adjacent areas for nesting.

Figure 2 Special Status Animal Species within 1 Mile and 5 Miles of the Project Site
12990 Spruce Grove Road, Lower Lake, CA



Date: 10-16-2019
Data: Sol Ecology Inc., Lake Co., CDFW

Base: ESRI
GIS: AJG

SOL ECOLOGY
solecology.com

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Tables 1 Special-status Animal Species with Potential To Occur on or in Vicinity of Project Site

Animal*	**Status**	**Habitat**	**Potential for Occurrence on and in Vicinity of Site**
Amphibians and Reptiles			
Western pond turtle (*Emys marmorata marmorata*)	CSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites, nest sites may be found up to 0.5 km from water.	Pond on site provides potential habitat. Uplands may provide potential nesting habitat.
Foothill yellow-legged frog (*Rana boylii*)	SCT, CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	No suitable habitat on or immediately adjacent to site.
California giant salamander (*Dicamptodon ensatus)*	CSC	Known from coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Adults may be found under rocks, logs and other debris adjacent to water sources. Aquatic larvae are found in cold, clear streams, sometimes in lakes or ponds.	No suitable habitat on or immediately adjacent to site.
Red-bellied newt (*Taricha rivularis*)	CSC	Coastal drainages from Humboldt County to Sonoma County and inland to Lake County. Lives in terrestrial habitats and typically breeds in streams with moderate flow and clean rocky substrate.	No suitable habitat on or immediately adjacent to site.
Birds**			
Sharp-shinned hawk (*Accipiter striatus*)	CSC	Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian.	Project area provides potential foraging habitat

Animal*	**Status**	**Habitat**	**Potential for Occurrence on and in Vicinity of Site**
Birds**			
Tricolored blackbird (*Agelaius tricolor*)	CSC, BCC	Colonial nester. Most numerous in the Central Valley & Vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Potential for occurrence near pond.
Golden eagle (*Aquila chrysaetos*)	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most part of its range although large tree in open areas, may be used.	Site provides potential foraging habitat.
Bald eagle (*Haliaeetus leucocephalus)*	SE, G5, S3	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dormant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Site provides potential foraging habitat.
Northern harrier (*Circus cyaneus*)	CSC	Prefers open country, like grasslands, steppes, wetlands, meadows, cultivated areas.	Project area provides potential foraging habitat
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC, SE, BCC	(Nesting) Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with low story of blackberry, nettles or wild grape.	Potential for occurrence low.
American peregrine falcon (*Falco peregrinus anatum*)	SFP, BCC	Near wetlands, lakes, rivers or other waters. On cliffs, banks, dunes and mounds as well as human-made structures.	Potential for occurrence low.
Prairie falcon (*Falco mexicanus)*	SFP, BCC	Inhabits dry open terrain, either flat or hilly.	Grasslands provide potential foraging habitat.
Purple martin (*Progne subis*)	CSC	Nesting: inhabits woodlands, low elevation coniferous forest of fir, ponderosa pine, and Monterey pine. Nests in old woodpecker holes mostly, also in human-made structures.	Potential for occurrence in adjacent woodlands.

Animal*	**Status**	**Habitat**	**Potential for Occurrence on and in Vicinity of Site**
Mammals			
Pallid bat (*Antrozous pallidus*)	CSC	Deserts, grasslands, woodlands and forests. Most common in open dry habitats with rocky areas for roosting. Very sensitive to disturbance of roosting sites.	Potential for occurrence in trees on and adjacent to site.
Townsend's big eared bat (*Corynorhinus townsendii*)	CSC	Subalpine and alpine habitats. Requires caves, tunnels, mines, buildings or other human-made structures for roosting.	Potential for occurrence in trees on and adjacent to site.
Silver-haired bat (*Lasionycteris noctivagans)*	CSC	Primarily a coastal and montane dweller feeding over streams, ponds and open brushy areas.	Potential for occurrence in trees on and adjacent to site.
Western red bat *(Lasiurus blossevillii)*	CSC	Roosts primarily in trees, 2-40 ft. above ground, from sea level up through mixed conifer forests.	Potential for occurrence in trees on and adjacent to site.
Hoary bat (*Lasiurus cinereus*)	CSC	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	Potential for occurrence in trees on and adjacent to site.
Fringed myotis (*Myotis thysanodes*)	CSC	Occurs in a wide variety of habitats. Roosts in caves, mines, buildings and crevices.	May forage over project area.
Long-eared myotis (*Myotis evotis*)		Found in all brush, woodland and forest habitats from sea level to about 9000 Ft. Prefers coniferous woodlands and forests.	Potential for occurrence in trees on and adjacent to site.
Fisher – West Coast DPS (*Pekania pennanti*)	ST	Intermediate to large-tree stages of coniferous forests and deciduous riparian area within high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning.	Potential for occurrence low within project area due to lack of dense cover

Animal*	**Status**	**Habitat**	**Potential for Occurrence on and in Vicinity of Site**
American porcupine (*Erethizon dorsatum*)	CSC	Found in a variety of habitats from forest to chaparral to desert.	May pass through project site.
American badger (*Taxidea taxus*)	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	May pass through in vicinity of project site. No recorded occurrences within 5 miles of project site.
Invertebrates			
Obscure bumblebee (*Bombus coliginosus*)	IUCN-VU	Coastal areas from Santa Barbara County to north Washington State. Host plants include coyote bush, lupine, and grindelia.	Adjacent chaparral may provide potential habitat.
Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)	G2, S2	Aquatic, often vernal pools or seasonal wetlands. Recorded occurrence in Bogg's lake and in vernal pools along Butts Canyon Road.	Potential for occurrence in pond.
Serpentine cypress wood-boring scavenger beetle (*Trachykele hartmani*)	G1, S1	Larvae develop in sergeant cypress. Restricted to Lake, Colusa, and Lake counties.	Potential for occurrence low.
Fish			
Sacramento perch (*Archoplites interruptus)*	SCS	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water, aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.	Potential for occurrence low.
Clear Lake Hitch (*Lavinia exilicaudachi)*	FT	Found only in Clear Lake, Lake County, and associated ponds. Spawns in streams flowing into Clear Lake.	No suitable habitat onsite. Outside known occurrence area.

*Note: FSC = U.S. Fish and Wildlife Service Species of Concern; FE = federally listed as endangered; FT = federally listed as threatened; SE = state listed as endangered; ST = state listed as threatened; SFP = State fully protected (may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW). CSC = California species of special concern; CDFS = considered sensitive by the California Department of Forestry. WBWG_H or M = Western Bat Working Group High or Medium Priority. IUCN-V = International Union for Conservation of Nature, vulnerable.
G1 – Critically imperiled globally – at very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors .G2 – Imperiled globally at high risk of extinction to due very restricted range, very few populations (often 20 or fewer), steep declines, or other risk factors. S1 – Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as

very steep declines making it especially vulnerable to extirpation from the state. S2- State rank imperiled because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines or other risk factors making it very vulnerable to extirpation from the state.

**All migratory birds are protected by the Migratory Bird Treaty Act (50 CFR 10), which makes it unlawful to take, possess, buy, sell, purchase or barter any migratory bird, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). In addition, Section 2080 of the California Fish and Game Code prohibits the killing of a listed species, and Sections 3503, 3503.5, and 3800 of the Fish and Game Code prohibit the take, possession, or destruction of birds, their nests, or eggs.

3.1.6 Recommendations and Mitigation Measures

The following mitigation measures are recommended for minimizing potential impacts to special-status species potentially occurring on or in the vicinity of the project site.

Nesting Birds

If project activities occur during the breeding season (February 1 through August 31), a qualified biologist will conduct a breeding bird survey no more than 14 days prior to project activities to determine if any birds are nesting in trees on or adjacent to the study area. This will include areas where water wells and security fencing will be installed.

If active nests are found close enough to the study to affect breeding success, the biologist will establish an appropriate exclusion zone around the nest. This exclusion zone may be modified depending upon the species, nest location, and existing visual buffers. Once all young have become independent of the nest, vegetation removal and grading may take place in the former exclusion zone.

If initial work is delayed or there is a break in project activities of greater than 14 days within the bird-nesting season, then a follow-up nesting bird survey should be performed to ensure no nests have been established in the interim.

Western pond turtle

Western pond turtle if present in the pond south and west of the proposed grow areas may use the adjacent lands to nest.

- Work within 100 meters of the pond should be initiated outside the nesting season for pond turtle, which is from May to October 1. If work cannot be initiated outside the nesting season, then a pre-construction survey in all work areas within 100 meters of the lower pond is recommended. Alternatively, an exclusion fence may be placed between the pond and proposed activities if the fencing is installed prior to May 1.

In addition, prior to construction, all workers on the crew should be trained by a qualified biologist as to the sensitivity of the turtle potentially occurring in the project area.

Best management practices

In addition to the above mitigation measures, the following best management practices are recommended.

- All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day and removed from the site every three days.
- No pets will be allowed on the project site.
- No more than a maximum speed limit of 15 mph will be permitted.
- All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.
- Hazardous materials such as fuels, oils, solvents, etc., will be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 200 feet from any aquatic habitat.

3.2 Special-status Plants

A database query of the CNDDB and the CNPS Electronic Inventory within a 5-mile radius of the parcels was conducted to assess the potential for sensitive communities and/or special-status plant species that may have the potential to occur in the Project Area. These species are listed on Figure 3 and in Table 2.

Based on a review of the literature and site evaluation on August 7, 2019, it was determined that Areas C and D are unlikely to support special-status plants due to the highly disturbed nature of these areas. Areas A and B have a low potential to support special-status plants due to historic agricultural use on the property.

Figure 3 Special Status Plant Species within 1 Mile and 5 Miles of the Project Site
12990 Spruce Grove Road, Lower Lake, CA

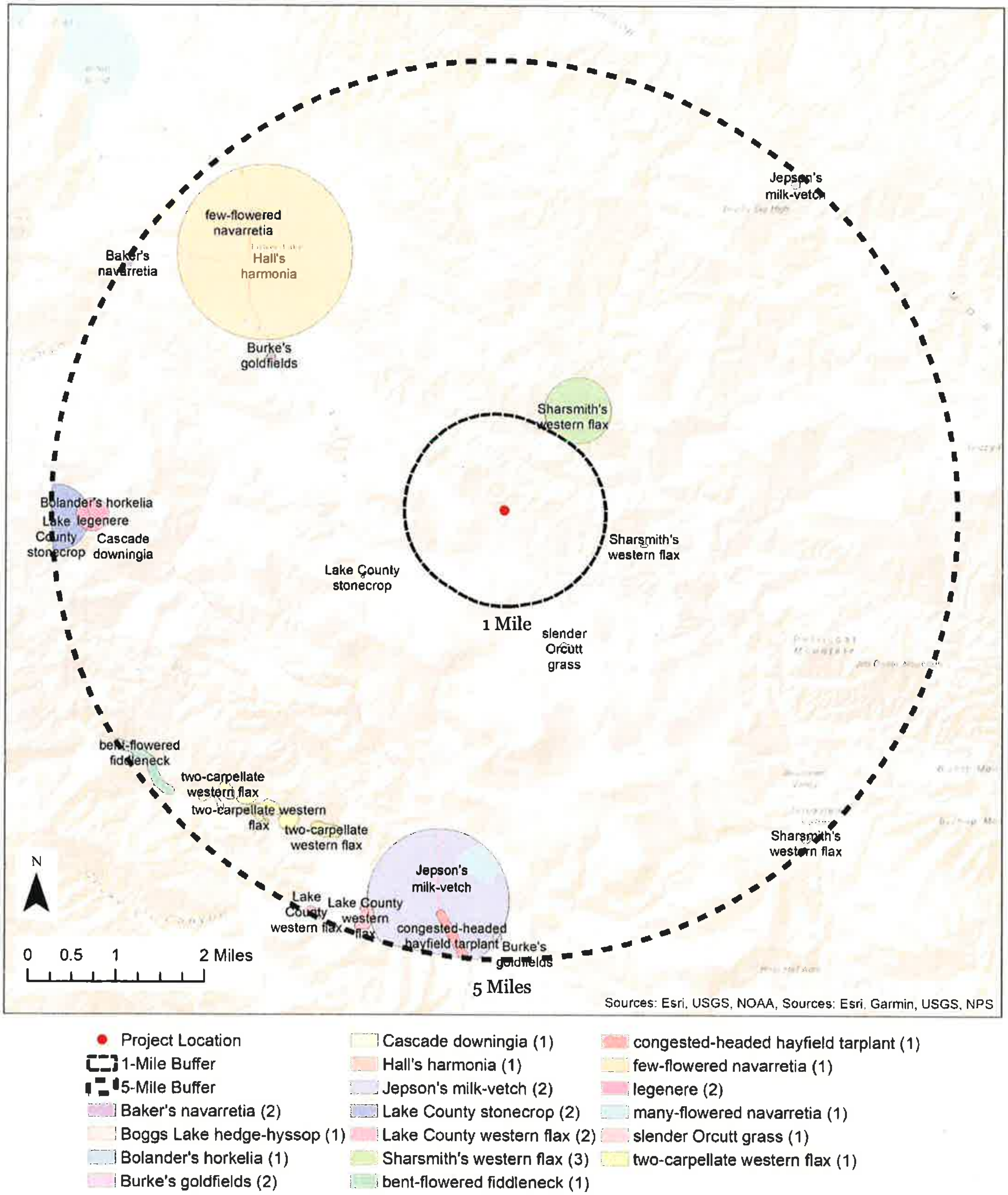

TABLE 2[1] – SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN PROJECT AREA OR ADJACENT HABITAT, 12990 SPRUCE GROVE ROAD, CA

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Napa false indigo (*Amorpha californica* var. *napensis*)	1B.2	Broadleafed upland forest, chaparral, cismontane woodland.	120-2000 m	April-July	**No Potential**. Chaparral habitat not present in areas to be disturbed
Bent-flowered fiddleneck (*Amsinckia lunaris*)	1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland, broadleafed upland forest.	3-500 m	March-June	**Low potential.** Marginal habitat may occur but site is probably above suitable elevation requirement.
Dimorphic snapdragon (*Antirrhinum subcordatum*)	4.3	Chaparral, lower montane coniferous forest.	185-800 m	April-July	**No Potential**. Habitat not present in proposed grow areas.
Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*)	1B.3	Volcanic soil, chaparral, cismontane woodland, lower montane coniferous forest. Associated species: *Arcostaphylos* spp., *Quercus* spp., *Pinus ponderosa, Ceanothus prostratus, Pseudotsuga menzensii*, and *Adenostoma fasciculatum.*	395-1615 m	March-May	**No Potential**. Habitat not present in proposed grow areas.
Raiche's ridge manzanita (*Arctostaphylos stanfordiana* ssp. *raichei*)	1B.1	Chaparral, lower montane coniferous forest (openings)	450-1035 m	February-April	**No Potential**. Habitat not present in proposed grow areas.
Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*)	1B.2	Open grassy areas, chaparral, cismontane woodland, valley and foothill grassland, often serpentine soil. Associated species: *Elymus multisetus, Avena, Trifolium, Lasthenia californica*, and *Hemizonia conjesta ssp. Luzulifolia* at various times of the season.	295-700 m	March-June	**Low Potential.** Only marginal habitat but serpentine soils not present.
Watershield (*Brasonia schreberi*)	2B.3	Marshes and swamps. Associated species: *Potamogeton foliosus, P. diversifolius, Utricularia vulgaris, Elatine heterandra*, and *Myriophyllum hippuroides.*	300-2200 m	June-September	**No potential**. Habitat not present on site.
Narrow-anthered California brodiaea (*Brodiaea californica* var. *leptandra*)	1B.2	Volcanic or serpentine soil, broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland.	110-915 m	May-July	**Low Potential**. Only marginal habitat but serpentine soils not present.

1 Base table comprised by Andrew Georgeades, Senior Botanist, Sol Ecology, Inc. 2018.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Mt. Saint Helena morning glory (*Calystegia collina*)	4.2	Chaparral, lower montane coniferous forest, valley and foothill grassland, serpentinite. Associated species: *Ceanothus* spp., *Pinus ponderosa*, and *Arctostaphylos stanfordiana*.	279-1010 m	April-June	**Low Potential**. Only marginal habitat but serpentine soils not present.
Northern meadow sedge (*Carex practicola*)	2B.2	Meadows and seeps (mesic). Associated species: Sedge-rush series.	0-3200 m	May-July	**No potential**. Habitat not present in proposed grow areas.
Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*)	1B.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grasslands. On serpentine.	20-915 m	April-June	**Low potential.** No serpentine soils present on site.
Rincon Ridge ceanothus (*Ceanothus confusus*)	1B.1	Volcanic or serpentine soil, dry shrubby slopes, closed-cone coniferous forest, chaparral, cismontane woodland. Associated species: *Arctostaphylos stanfordiana* and *Pinus ponderosa*	75-1065 m	February-June	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Calistoga ceanothus (*Ceanothus divergens*)	1B.2	Chaparral (serpentinite, or volcanic, rocky). Associated species: *Ceanothus* ssp.	170-950 m	February-April	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Holly-leaved ceanothus (*Ceanothus purpureus*)	1B.2	Rocky volcanic soil, chaparral, cismontane woodland.	120-640 m	February-June	**No Potential**. Habitat not present in proposed grow areas.
Sonoma ceanothus (*Ceanothus sonomensis*)	1B.2	Chaparral (sandy, serpentinite, or volcanic). Associated species: *Arctostaphylos* spp.	215-800 m	February-April	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Dwarf soaproot (*Chlorogalum pomeridianum* var. *minus*)	1B.2	Chaparral (serpentinite). Associated species: *Cupressus sargentii*	305-1000 m	May-August	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Serpentine cryptantha (*Cryptantha clevelandii* var. *dissita*)	1B.2	Serpentine soil, chaparral. Associated species: *Hesperolinon bicarpellatum* and *Calystegia collina* ssp. *oxyphylla*.	395-580 m	April-June	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Cascade downingia (*Downingia willamettensis*)	2B.2	Cismontane woodland, valley and foothill grasslands, vernal pools.	15-1110 m	June-July	**Low Potential.** Typically found in wet areas, vernal pools. May occur near pond but this area will not be affected.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Brandegee's eriastrum (*Eriastrum brandegeeae*)	1B.1	Chaparral, cismontane woodland. Associated species: *Adenostoma fasciculatum, Ceanothus* spp., *Quercus* spp., *Penstemon centranthifolius, Eriogonum* spp., *Phacelia* spp. *Arctostaphylos, Heteromeles, Bromus* spp., and *Eriodictyon trichocalyx*	425-840 m	April-August	**Low Potential.** Habitat of proposed grow areas not suitable and disturbed.
Greene's narrow-leaved daisy (*Erigeron greenei* [= *E. angustatus*])	1B.2	Serpentine (or possibly volcanic) soil, chaparral.	80-105 m	May-September	**No Potential** Habitat not present in proposed grow areas; serpentine soils not present.
Snow Mountain buckwheat (*Eriogonum nervulosum*)	1B.2	Serpentine soil, dry places, chaparral, serpentine balds and barrens. Associated species: *Ceanothus* spp., *Pinus sabiniana, Arctostaphylos, Quercus, Garrya, Streptanthus* ssp., and *Epilobium minutum*.	300-2105 m	June-September	**No Potential.** Habitat not present in proposed grow areas; serpentine soils not present.
Loch Lomond button-celery (*Eryngium constancei*)	FE, SE, 1B.1	Vernal pools. Associated species: *Pinus ponderosa, Quercus kelloggii, Gratiola ebracteata, Lilaea scilloides, Downingia* spp., *Mimulus tricolor, Navarretia* spp., and *Juncus* spp.	460-855 m	April-June	**No potential.** Vernal pool habitat not present on site.
Adobe-lily (*Fritillaria pluriflora*)	1B.2	Usually adobe or heavy clay soil, valley and foothill grassland, cismontane woodland, chaparral. Associated species: Medusahead, *Trifolium, Ranunculus* and *Hesperevax*.	60-705 m	February-April	**Low Potential.** Most records >20 years.
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	SCE, 1B.2	Marshes and swamps (lake margins), vernal pools. Associated species: *Limnanthes douglasii, Lasthenia* spp., *Allocarya stipitata micrantha. Navarretia* spp., *Orcuttia tenuis, G. ebracteata, Ranunculus uncinatus parviflorus, Eleocharis palustris, Downingia* sp., *Callitriche heterophylla*, and *Parvisedum leiocarpum*.	10-2375 m	April-August	**No potential.** No marsh and swamp or vernal pool habitat within proposed grow areas.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Toren's grimmia (*Grimmia torenii*)	1B.3	Openings, rocky boulders, chaparral, cismontane woodland, lower montane coniferous forest. Serpentine hills and ridges. Associated species: Mixed conifer community, *Bryoerythrophyllum columbianum*.	325-1160 m	None	**Low Potential.** Only marginal habitat mostly disturbed. Serpentine soils not present.
Hall's harmonia (*Harmonia* [*Madia*] *hallii*)	1B.2	Serpentine soil, open rocky areas in chaparral. Associated species: *Ceanothus jepsonii albiflorus* and *Quercus durata*. associates noted in historical collections include *Linanthus, Chaenactis, Collinsia, Arenaria*, etc.	305-975 m	April-June	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Congested-headed hayfield tarplant (*Hemizonia congesta*)	1B.2	Valley and foothill grassland.	20-560 m	April-November	**Low Potential**. Grassland not present; site disturbed with grading after fires.
Glandular western flax (*Hesperolinon adenophyllum*)	1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Associated species: *Quercus durata, Pinus sabiniana, Perideridia kelloggii, Ceanothus jepsonii* var. *albiflorus, Arctostaphylos viscida, Calamagrostis ophitidis, Cordylanthus tenuis, Hordeum jubatum, Poa secunda* ssp. *secunda, Eriogonum vimineum, Allophyllum divaricatum, Eriodictyon californicum, Adenostoma fasciculatum Calycadenia pauciflora, Minuartia douglasii, Gilia capitata, Streptanthus barbiger, Rigiopappus leptocladus*,and *Cupressus sargentii*.	150-1315 m	May-August	**Low Potential.** Habitat not present in proposed grow areas. Most areas disturbed.
Two-carpellate western flax (*Hesperolinon bicarpellatum*)	1B.2	Serpentine soil, chaparral. Associated species: *Onychium densum, Festuca microstachys, Eriophyllum lanatum, Allium falcifolium, Bromus rubens, Brodiaea laxa, Arctostaphylos viscida, Pinus sabiniana, Hesperolinon* sp., *Onychium densum, Festuca microstachys, quercus durata, ceanothus jepsonii albifrons, cupressus sargentii.*	60-1005 m	May-July	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Lake County western flax (*Hesperolinon didymocarpum)*	SE, 1B.2	Serpentinite, chaparral, cismontane woodland, valley and foothill grassland. Associated species: *Calycadenia pauciflora*, *Hesperolinon californicum*, *Adenostoma fasciculatum*, *Ceanothus jepsonii* var. *albiflorus*, *Heteromeles arbutifolia*, and *Quercus durata* var. *durata*.	330-365 m	May-July	**Low Potential**. Only marginal habitat but serpentine soils not present.
Drymaria-like western flax (Hesperolinon drymariodes)	1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland.	200-1109m	May-August	**Low Potential.** Only marginal habitat due to disturbed nature of site.
Sharsmith's western flax (*Hesperolinon sharsmithiae*)	1B.2	Serpentinite, chaparral. Associated species: *Aadenostoma fasciculatum*.	270-300 m	May-July	**No Potential**. Habitat not present in proposed grow areas; serpentine soils not present.
Bolander's horkelia (*Horkelia bolanderi*)	1B.2	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland. Associated species: *Navarretia* spp., *Lasthenia burkei*, *Bromus* spp., *Asclepias fasciculatus*, *Achillea millefolium*, *Pinus ponderosa*, *Arctostaphylos* spp., *Clarkia*, *Madia*, *Festuca*, *Poa*, *Hordeum*, *Mimulus tricolor*, *Downingia*, *Polygonum*, *Eryngium*, *arctostaphylos manzanita* ssp. *elegans*, *Antirrhinum virgate*, *Quercus wislizeni*, *Adenostoma fasciculatum*, *Eleocharis macrostachya*, *Typha*, *Scirpus*, and *Calochortus uniflorus*.	450-1100 m	(May) June-August	**Low Potential**. Meadows and seeps habitat not present.
California satintail (*Imperata brevifolia*)	2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub	0-1215 m	September-May	**No potential**. Coastal scrub, Mojavean desert scrub, meadows and seeps and riparian scrub not present.
Northern California black walnut (*Juglans hindsii*)	1B.1	Deep alluvial soil; riparian forest and woodland. Most occurrences naturalized.		April-May	**High.** Area was formerly a walnut orchard. Occurrences likely naturalized.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Santa Lucia dwarf rush (*Juncus luciensis*)	1B.2	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools.	300-2040 m	April-July	**No potential**. Great basin scrub, meadows and seeps, and vernal pools not present.
Burke's goldfields (*Lasthenia burkei*)	FE, SE, 1B.1	Vernal pools, seasonally moist places in meadows. Associated species: *Lasthenia gracilis*, *Downingia* spp., *Deschampsia danthonioides*, *Eleocharis macrostachya*, *Navarretia leucocephala* ssp. *pauciflora*, *Arctostaphylos manzanita* ssp. *elegans*, *Gratiola* ebracteata, *Mimulus* spp., *Plagiobothrys* spp., *Eryngium* spp., *Callitriche marginata*, and *Bromus mollis*.	15-600 m	April-June	**No Potential**. Vernal pool habitat not present.
Colusa layia (*Layia septentrionalis*)	1B.2	Serpentine or sandy soil, chaparral, cismontane woodland, valley and foothill grassland. Associated species: *Quercus douglasii, Bromus hordeaceous, Triteleia laxa, Iris douglasiana, Collinsia heterophylla, Madia gracilis, Achyrachaena mollis, Micropus amphiboles, Leptosiphon aciculari*, and *Allium*.	100-1095 m	April-May	**Low Potential**. Only marginal habitat but serpentine or sandy soils not present. Site mostly disturbed.
Legenere (*Legenere limosa*)	1B.1	Vernal pools. Associated species: *Llim nanthes douglasii, Lasthenia glaberrima, Allocarya stipitata micrantha, Gratiola* spp., *Orcuttia tenuis, Navarretia leucocephala* ssp. *plieantha, Eleocharis palustris*, and various grass species (not flowering).	1-880 m	April-June	**No potential**. Vernal pool habitat not present.
Jepson's leptosiphon (*Leptosiphon [Linanthus] jepsonii*)	1B.2	Usually volcanic soil (sometimes periphery of serpentine), chaparral, cismontane woodland. Associated species: *Trifolium microdon* and *Lupinus bicolor*	100-500 m	March-May	**Low Potential**. No chaparral or cismontane woodland present within grow areas.
Woolly meadowfoam (*Limnanthes floccosa*)	4.2	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools. Associated species: *Platystemon, Plectritis, Collinsia, Nemophila, Parviflora*, and *Plagiobothrys*.	60-1335 m	March-May (June)	**Low potential**. Vernal pool habitat not present.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Sebastopol meadowfoam (*Limnanthes vinculans*)	FE, SE, 1B.1	Seasonally wet places, vernal pools and swales, meadows and seeps, valley and foothill grassland, valley oak savanna. Associated species: *Sidalcea oregana valida*	15-305 m	April-May	**No potential**. Habitat not present.
Cobb Mountain lupine (*Lupinus sericatus*)	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest. Associated species: *Pinus* spp., *Pseudotsuga menziesii, Arbutus menziesii, Calocedrus decurrens, Quercus* spp., *Arctostaphylos canescens,* and *Festuca californica,*	275-1525 m	March-June	**Low Potential**. Suitable habitat not present.
Elongate copper moss (*Mielichoferia elongata*)	4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest	0-1960 m	None	**No Potential**. No suitable habitat and no records within 5 miles of site.
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	1B.1	Seasonally moist places, cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Associated species: *Lasthenia* spp., *Downingia concolor concolor*	5-1740 m	April-July	**Low Potential**. Vernal pool habitat not present on site.
Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*)	FE, ST, 1B.1	Vernal pools (volcanic ash flow). Associated species: *Leucocephala* ssp. *plieantha, Eryngium constancei, Gratiola heterosepalal, Navarretia* spp., *Quercus* spp., *Adenostoma fasciculatum, Ceanothus* spp., *Arctostaphylos* spp., *Lasthenia* spp., *Parvisedum leiocarpuml, Eryngium aristulatum* var. *aristulatum, Plagiobothrys stipitatus, Downingia*, spp., *Deschampsia danthonioides, Eleocharis macrostachya, Horkelia bolanderi*, and *Calochortus uniflorus.*	400-855 m	May-June	**No Potential**. Habitat not present on site.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*)	FE, SE, 1B.2	Vernal pools in volcanic ash flow substrate. Associated species: *Orcuttia tenuis, Gratiola Heterosepala,Llegenere limosa, Eryngium* spp., *Navarretia* spp., *Limnanthes douglasii, Lasthenia glaberrima, Plagiobothrys stipitatus,* and *Eleocharis palustris.*	30-950 m	May-June	**No Potential.** Habitat not present on site.
Small pincushion navarretia (*Navarretia myersii* ssp. *deminuta*)	1B.1	Vernal pools; known from only one occurrence in clay loam soil. Associated species: *Eryngium aristulatum, Downingia concolor, Psilocarphus brevissimus, Juncus bufonius,* and *isoetes howelli.*	unknown	April-May	**No Potential.** Habitat not present on site.
Porter's navarretia (*Navarretia paradoxinota*)	1B.3	Meadows and seeps. Associated species: *Ceanothus cuneatus, Madia exigua, Psilocarphus tenellus, Leontodon saxatilis, Quercus kelloggii, Agoseris heterophylla, Bromus hordeaceus,* and *Avena* spp.	165-840 m	May-June (July)	**No Potential.** No meadows or seeps on site.
Slender Orcutt grass (*Orcuttia tenuis*)	FT, SE, 1B.1	Vernal pools. *Eleocharis macrostachya, Eryngium aristulatum, Downingia* spp., *Navarretia plieantha, Deschampsia danthonioides,* and *Allocarya stipitata. Gratiola heterosepala* in adjacent pools.	35-1760 m	May-September (October)	**No Potential.** Habitat not present.
Geysers panicum (*Panicum* Geysers panicum *acuminatum* var. *thermal*)	SE, 1B.2	Geothermally-altered soil, sometimes streamsides, closed-cone coniferous forest, riparian forest, valley and foothill grassland. Associated species: *Lolium multiflorum, lamarckia aurea, cynodon dactylon, polygonum hydropiperoides, Mimulus guttatus, Andropogon Virginicus, alnus rubra, Umbellularia californica, Sali,* and *Juncus.*	305-2470 m	June-August	**Low Potential.** No occurrences within 5 miles of site. Geothermally-altered soil not present on site.
Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*)	1B.3	Chaparral (rocky). Associated species: *Pedicularis densiflora, melica californica, penstemon corymbosa, cheilanthes gracillima, arabis breweri, polystichum munitum, torreya californica,* and *erigeron petrophilus,*	700-1370 m	April-August	**Low Potential.** No chaparral habitat on site. Elevation of site unlikely suitable.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Eel-grass pondweed (*Potamogeton zosteriformis*)	2B.2	Marshes and swamps (assorted freshwater)	0-1860 m	June-July	**No potential**. Habitat not present.
Lake County stonecrop (*Sedella leiocarpa*)	FE, SE, 1B.1	Cismontane woodland, valley and foothill grassland, vernal pools. Associated species: *Gayophytum humile, Mimulus tricolor, Lasthenia* spp., *Eryngium* spp., *Quercus douglasii, Bromus hordeaceous, Pogogyne serpylloides, Trifolium depauperatum, Triphysaria eriantha, Aira caryophyllea, Crassula muscosa, Plantago erecta, Downingia cuspidate*, and *Navarretia pauciflora*.	365-790 m	April-May	**Low Potential**. Vernal pool habitat not present.
Marsh checkerbloom (*Sidalcea oregana* ssp. *hydrophila*)	1B.2	Wet places, meadows, riparian forest. Associated species: *Anthoxanthum odoratum, Poa pratensis, Festuca* spp., *Hordeum brachyantherum, Arrhenatherum elatius, Danthonia californica, Juncus* spp., *Carex praegracilis, Deschampsia danthonioides*, , *Bromus* spp., *Elymus glaucus, Wyethia helenioides, Dichelostemma* spp., and *Quercus durata*.	115-150 m	July-August	**Low Potential**. Suitable habitat not present within grow areas.
Keck's checkerbloom (*Sidalcea keckii*)	FE, 1B.1	Cismontane woodland, valley and foothill grassland.	6-130 m	April-May	**Low Potential.** Marginally suitable habitat may be present. Site above elevation for species.
Kenwood Marsh checkerbloom (*Sidalcea oregana* ssp. *valida*)	FE, SE, 1B.1	Freshwater marshes and swamps. Associated species: *Helenium puberulum, Carex* spp., *Juncus* ssp., *grasses, Camassia quamash, Calochortus uniflorus, Hypericum anagalloides, Rubus discolor*, and *Salix lasiolepis*.	115-150 m	June-September	**No potential**. Freshwater marshes and swamps not present in proposed grow areas.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Socrates Mine jewel-flower (*Streptanthus brachiatus* ssp. *brachiatus*)	1B.2	Closed-cone coniferous forest, chaparral, usually serpentine soil. Associated species: *Quercus* spp., *Ceanothus jepsonii, Senecio greenei, Calystegia* spp., *Arctostaphylos viscida, Phacelia* spp., *Eriogonum minutum, Iris, Cupressus sargentii, Pinus sabiniana, Eriophyllum lanatum* var. *achillaeoides, Sitanion, Festuca reflexa, Collomia diversifolia, Collinsia greenei,* and *Marah fabaceus.* Area shaded by *Acer macrophyllum.*	545-1000 m	May-June	**Low Potential**. Serpentine soils not present.
Freed's jewel-flower (*Streptanthus brachiatus* ssp. *hoffmanii*)	1B.2	Serpentine soil, chaparral, cismontane woodland. Associated species: *Ceanothus spp., Cupressus sargentii, Quercus* spp., *Adenostoma, Arctostaphylos viscida, Allium falcifolium, Eriogonum spp., Trichostema laxum, Pinus sabiniana, Solanum parishii, Fremontodendron californicum, and Pedicularis.*	490-1220 m	May-July	**Low Potential**. Serpentine soil not present.
Hoffman's bristly jewelflower (*Streptanthus glandulosus* ssp. *hoffmanii*)	1B.3	Rocky, chaparral, cismontane woodland, valley and foothill grassland (often serpentinite). Associated species: *Pinus, Quercus,* and *Arctostaphylos.*	120-475 m	March-July	**Low Potential**. Serpentine soils not present. No records within 5 miles of project site.
Green jewel-flower (*Streptanthus breweri* var. *hesperidis*)	1B.2	Rocky serpentine soil, chaparral openings, cismontane woodland. Associated species: *Calycadenia pauciflora, Chaenactis glabriuscula, Sidalcea, plantago, Allium, Lagophylla minor, Adenostoma, Quercus durata,* and *pinus sabiniana.*	130-760 m	May-July	**Low Potential**. Serpentine soils not present. No records within 5 miles of project site.
Three Peaks jewel-flower (*Streptanthus morrisonii* ssp. *elatus*)	1B.2	Serpentine soil, chaparral. Associated species: *Hesperolinon serpentinum, lilium bolanderi, cupressus sargentii. Arctostaphylos* spp., *Ceanothus jepsonii, Quercus durata, Erythronium helenae,* and *Allium falcifolium.*	90-815 m	June-September	**No Potential**. Serpentine soils not present. No records within 5 miles of project site.

Plant Species	Status	Habitat and Associated Species	Elevation	Flowering Period	Potential for Occurrence
Early jewel-flower (*Streptanthus vernalis*)	1B.2	Serpentine soil, chaparral, closed-cone coniferous forest. Associated species: *Cupressus sargentii, Pinus sabiniana, Arctostaphylos viscida, Quercus durata, Streptanthus morrisonii* ssp. *elatus, Mimulus brachiatus, Minuartia douglasii, and Epilobium minutum*	None	March-May	**No Potential**. Serpentine soils not present. No records within 5 miles of project site. Proposed grow areas disturbed.
Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpine*)	2B.2	Marshes and swamps (assorted shallow freshwater).	300-2150 m	May-July,	**No potential**. Marshes and swamps not present within proposed grow areas.
Napa bluecurls (*Trichostema ruygtii*)	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools.	30-680 m	June-October	**Low Potential**. Only marginal habitat present. CNPS indicates Uncertain about distribution or identity.
Saline clover (*Trifolium depauperatum* var. *hydrophilum*)	1B.2	Moist places, ± alkaline or saline soil, marshes and swamps, valley and foothill grassland, vernal pools.	0-300 m	April-June	**Low Potential**. Marshes and swamps, vernal pools not present within proposed grow areas.
Oval-leaved viburnum (*Viburnum ellipticum*)	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m	May-June	**Low Potential**. Only marginally suitable habitat present.

FE/SE – Federal/State Endangered
FT/ST – Federal/State Threatened
SCE – State Candidate Endangered
California Rare Plant Rank (CRPR) 1A: Presumed extinct. 1B: Rare, Threatened, or Endangered in California and elsewhere. 2B: Rare, Threatened, or Endangered in California, more common elsewhere. 3: Plants about which more information is needed. 4: Species of Local Concern

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