



JACOBSZOOM & ASSOCIATES, INC.

natural resource planning & management



BIOLOGICAL RESOURCES ASSESSMENT

Prepared For:

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13306 Elk Mountain Rd., Upper Lake, CA 95485
APN: 002-023-90-00

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Section 1.0: Introduction

This report is intended to summarize the background, methods of survey, and results of a biological site assessment conducted on 13306 Elk Mountain Road, Upper Lake, CA 95485 (APN:002-023-90-00) (Appendix D: Figures 1, 2) for the purpose of obtaining a Lake County commercial cannabis permit and CalCannabis State cultivation licensing. This report includes the following:

- Regulations and Project Description; (Section 2)
- Study Area Setting (Section 3)
- Field Survey Methodology (Section 4)
- Field Survey Results (Section 5)
- Assessment Summary and Recommendations (Section 6)
- Tables of Special-Status Plants and Wildlife within CNDDDB five-mile Survey Radius (Appendix A)
- List of Species Observed (Appendix B)
- Representative Photographs of Project Area and Project Buffer (Appendix C)
- Supporting Figures (Appendix D)

Section 2.0: Regulations and Project Description

2.1 Regulatory Setting

In addition to the requirements of Lake County's Ordinance, the proposed Project shall comply with federal, state, and local regulations designed to protect sensitive natural resources. A site visit was conducted on April 22, 2019 to assess biotic resources within the Study Areas (Appendix D: Figure 2).

The following natural resources are protected under one or more of several Federal and/or State regulations and should be considered when designing and/or implementing the Proposed Project within the Study Areas.

Essential Fish Habitat: protected through changes to the Magnuson-Stevens Fishery Conservation and Management Act to maintain sustainable fisheries in the United States, administered by National Marine Fisheries Service (NMFS):

- Includes habitats (rivers, creeks, estuaries) that may support anadromous fish (fish migrating from ocean habitat into freshwater river habitat), as well as commercially and/or ecologically valuable fishes

Local Regulations: The Lake County Regulations for the Cultivation of Medical Marijuana (Article 72 Sec. 21-72) stipulates and outlines rules set forth by the Lake County Board of Supervisors for the purpose of cultivation of medical cannabis. The intent is to limit harmful environmental impacts that are often associated with (illegal) cannabis cultivation and has established standards for such activities.



- Lake County Code Ordinance No. 3073, Amending Chapter 21, Article 27 of the Lake County Code Pertaining to Cannabis Cultivation provides parameters for medical and commercial cannabis cultivation within the County and definitions for adult personal use, qualified patient, and primary caregiver cannabis cultivation. Additionally, the Ordinance describes subcategories including, but not limited to, Enforcement, Development Standards and Restrictions, Permits Required, and Development Standards for the cultivation of medical and commercial cannabis within the County.

Sensitive Natural Communities: protected under the California Fish and Game Code (CFGF), administered by California Department of Fish and Wildlife (CDFW):

- Includes terrestrial vegetation or plant communities that are ranked by NatureServe and considered “threatened” or “endangered” by CDFW, lists of such are included in *List of Vegetation Alliances and Associations* (CDFW 2010)

Special-status Plant and Wildlife Species including Critical Habitat: protected under one or more of the Federal Endangered Species Act (ESA), California Endangered Species Act (CESA), California Environmental Quality Act (CEQA), administered by the U.S. Fish and Wildlife Service (USFWS), and/or CDFW:

- Includes plants listed under the ESA and/or CESA, or those plants ranked by the California Native Plant Society (CNPS) as Rank 1, 2, 3 and 4.
- Includes wildlife listed under the ESA and/or CESA, and wildlife listed by CDFW as Species of Special Concern, Fully Protected Species, and/or Special-status including Invertebrates, Birds of Conservation Concern listed by USFWS, Species of Concern listed by National Marine Fisheries Service (NMFS), Western Bat Working Group (WBWG).

Streams, Lakes, and Riparian Habitat: protected under the California Fish and Game Code (CFGF), administered by the California Department of Fish and Wildlife (CDFW):

- Includes creeks and rivers (bodies where water flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life), and vegetation adjacent to and associated with (riparian habitat)

Waters of the State: protected under the Porter-Cologne Act, administered by the State Water Resources Control Board (SWRCB)

Waters of the U.S.: protected under the Clean Water Act (CWA), administered by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps):

- Includes wetlands, streams, rivers, and other aquatic habitats meeting the guidance issued by the Corps.



2.2 Project Description

It is Jacobszoon and Associates, Inc. understanding that the proposed Project includes the development of open grassland habitat for the purpose of cannabis cultivation within a 34.59-acre parcel (APN: 002-023-90-00) (Appendix D: Figures 1, 2). Such projects must conform to the requirements of the California Department of Fish and Wildlife (CDFW) Lake or Streambed Alteration Agreement per the California Department of Food and Agriculture (CDFA) CalCannabis Program (BPC 26060.1 (b) (3)). One site visit was conducted April 22, 2019 to assess biotic resources within the Study Area.

Section 3.0: Study Area Setting

The following subsections summarize the physical and biological settings of the Study Area.

3.1 Topography and Soils

The property and Study Area are approximately 4.25 miles northwest of Upper Lake, located in Section 23, Township 16N, Range 10W, Mount Diablo Base and Meridian, in the Upper Lake USGS 7.5 minute quadrangle. The Study Area encompasses approximately 15.7 acres of the 34.59-acre property and are located within the Salt Flat Creek-Middle Creek Watershed (HUC-12 180201160204), located within a range of 1440 feet (439 meters) to 1460 feet (445 meters) elevation.

According to the United States Department of Agriculture, Natural Resources Conservation Service's *Web Soil Survey*, the Study Area is underlain by four soil mapping units: Maymen-Hopland-Mayacama association, 20 to 60 percent slopes, Still loam, stratified substratum, Talmage very gravelly sandy loam, Xerofluvents-Riverwash complex. Descriptions of the soil series are as follows:

Maymen-Hopland-Mayacama association (Map Unit Symbol: 173): This series is comprised of a combination of Maymen, Hopland, and Mayacama soils series. The unit is 40 percent Maymen gravelly loam, 20 percent Hopland loam, and 20 percent Mayacama very gravelly sandy loam. Included are small areas of Bressa, Etsel, Henneke, Millsholm, Montara, Sanhedrin, and Speaker soils. Included areas make up about 20 percent of the total acreage. The native vegetation is mainly brush and annual grasses on the Maymen soil and brush and hardwoods with a few conifers on the Hopland and Mayacama soils. Elevation is 1,500 to 3,500 feet.

- Maymen series consists of shallow, somewhat excessively drained soils on mountains. These soils formed in material weathered from sandstone or shale. Slopes range from 15 to 75 percent.
- Hopland series consists of moderately deep well drained soils on hills and mountains. These soils formed in material weathered from sandstone and shale. Slopes range from 15 to 75 percent.



- Mayacama series consists of moderately deep, somewhat excessively drained soils on hills and mountains. These soils formed in material weathered from sandstone or metamorphosed sandstone. Slope is 9 to 75 percent.

Still loam, stratified substratum (Map Unit Symbol: 233): Included in this unit are small areas of Cole, Cole Variant, Kelsey, Lupoyoma, and Talmage soils and Xerofluvents. Included areas make up about 20 percent of the total acreage. The native vegetation in not cultivated areas is mainly annual grasses and forbs with scattered oaks. Elevation is 1,000 to 2,000 feet.

- Still series consists of very deep, well drained soils on alluvial plains. These soils formed in alluvium derived from mixed sources. Slopes range from 0 to 8 percent.

Talmage very gravelly sandy loam (Map Unit Symbol: 237): Included in this unit are small areas of Kelsey soils, Xerofluvents, and soils that are similar to this Talmage soil. These included areas make up approximately 20 percent of the total acreage. The native vegetation is mainly annual grasses and forbs with scattered oaks. Elevation is 1,300 to 1,800 feet.

- Talmage series consists of very deep, somewhat excessively drained soils on alluvial fans and flood plains. These soils formed in alluvium derived from mixed sources. Slope is 0 to 8 percent.

Xerofluvents-Riverwash complex (Map Unit Symbol: 249): Included in this unit are small areas of Kelsey, Maywood Variant, and Talmage soils. These included areas make up approximately 15 percent of the total acreage. The native vegetation is mainly sparse annual grasses and forbs. Elevation is 750 to 2,800 feet.

- Xerofluvents consist of very deep, excessively drained soils that formed in alluvium derived from mixed rock sources.
- Riverwash is very deep water-deposited sediment consisting of sand, gravel, cobbles, and stones in active stream channels.

The cultivation areas fall inside Map Unit 237. Typical pedons for the soils in this Unit are as follows:

Talmage:

A1 - 0 to 9 inches; brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist

A2 - 9 to 19 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist

C1 - 19 to 33 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam, dark brown (10YR 4/3) moist



C2 - 33 to 66 inches; yellowish brown (10YR 5/4) very gravelly coarse loamy sand, dark brown (10YR 4/3) moist

3.2 Biota and Land Use

The dominant vegetation within the Study Area is typical of mid-elevation open grassland (herbaceous) habitat with mixed oak forest alliance (CNPS Manual of California Vegetation). The Study Area is located within a rural property, surrounded by minimally developed parcels, and is currently used for small farm purposes. Moderate annual temperatures and relatively high average annual rainfall¹, supports the preponderance of open grassland (herbaceous) habitat and mixed oak stands along the northern section of the Study Area and along Middle Creek.

The Study Area is characterized by predominantly non-native grassland species, although some native species were present. Plants found to occur in these areas include: wild oat (*Avena fatua*), quaking rattlesnake grass (*Briza major*), soft chess (*Bromus hordeaceus*), velvet grass (*Holcus lanatus*), bull thistle (*Cirsium vulgare*), dogtail grass (*Cynosurus echinatus*), foxtail barley (*Hordium murinum*), creeping rye grass (*Elymus glaucus*) big heron bill (*Erodium botrys*), subterranean clover (*Trifolium subterraneum*), shamrock clover (*Trifolium dubium*), cutleaf geranium (*Geranium dissectum*), buttercup (*Ranunculus* sp.), spring vetch (*Vicia sativa*), western blue eyed grass (*Sisyrinchium bellum*) and other emerging forbs and grasses.

In addition, Middle Creek flows adjacent to the eastern section of the Study Area and small tributary watercourses flow into Middle Creek, traversing the Study Area. Two of the watercourses flow through the open grassland habitat, while the northern-most watercourse is bounded by mixed oak forest alliance and associated riparian vegetation. Floral species noted in this habitat include: bigleaf maple (*Acer macrophyllum*), bur chevril (*Anthriscus caucalis*), Pacific madrone (*Arbutus menziseii*), bull thistle (*Cirsium vulgare*), miner's lettuce (*Claytonia perfoliata*), wild geranium (*Geranium dissectum*), purple dead nettle (*Lamium purpureum*), California black oak (*Quercus kelloggii*), Himalayan blackberry (*Rubus armeniacus*), and poison oak (*Toxicodendron diversilobum*).

Section 5 provides a detailed account of the biological communities found on-site, including sensitive and non-sensitive biological communities, and additionally the special-status flora and fauna with potential to occur within the Study Area.

¹ According to weather.com, Upper Lake average annual precipitation – rainfall is 31.59 inches.



Section 4.0: Field Survey Methodology

4.1 Assessment Methods

The biological resource assessment is designed to assess the potential for the presence of sensitive wildlife species and to determine whether habitat for sensitive plant species and plant communities may or may not be present. The purpose of this analysis is to assess the potential for cumulative impacts to biological resources that may occur as a result of the proposed project.

The basis of the biological assessment analysis is a comparison of existing habitat conditions within the Study Areas to the geographic range and habitat requirements of sensitive plant and wildlife species. Input includes plant community (including development stage), soil structure, and special features such as presence of water, snags, cover, and food (fruit, seeds, insects, etc.). The approach is conservative in that it tends to over-estimate the actual number of species present.

4.2 Database Resource Descriptions

The potential for occurrences of rare, threatened, endangered or plant and animal species of concern within or near the Study Areas were evaluated by reviewing topographic maps, aerial photography, the California Native Plant Society's Rare Plant Rank (CRPR) electronic inventory (online edition, v8-03 0.39), the California Natural Diversity Database (CNDDB) Spotted Owl Data Viewer (online edition, v5.77.14) and the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) Quick Viewer (online edition, v5.77.14). Lake County also maintains a mapped database of biological resources including special features such as wetland, vernal pool, aquatic, and riparian communities. This database was also reviewed, and no special or unique biological resources are noted within the Study Area.

The CRPR database produces a list of sensitive plants potentially occurring at a site based on various site characteristics (location of the Study Area with regard to the geographic range of sensitive plant species, location(s) of known populations of sensitive plant species as mapped in the CNDDB, soils of the Study Area, elevation, presence/absence of special habitat features, and plant communities existing within the Study Area).

While use of the CRPR inventory does not eliminate the need for an in-season botanical survey, it can, when used in conjunction with other information, provide a very good indication of the suitability of a site as habitat for sensitive plant species. The CNDDB database consists of mapped overlays of all known populations of sensitive plants and wildlife. The database is continually updated with new sensitive species population data.



Rare, threatened, and endangered plants are not necessarily limited to those species which have been “listed” by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:

A species, subspecies, or variety of plant is “**endangered**” when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is “**threatened**” when it is likely to become endangered in the foreseeable future in the absence of protection measures.

A plant is “**rare**” when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its habitat continues to deteriorate.

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database’s List of California Terrestrial Natural Communities was used as a guide to the names and status of communities.

The rare plants (native, vascular and non-vascular) and animals assessed are of limited abundance in California, with known occurrence or distribution in Mendocino County, and were derived from the following lists:

- Federal listed or threatened or endangered plants or species of concern (FT, FE, FSC)
- California State listed or rare, threatened or endangered plants or species of concern (SR, ST, SE, SP, SSC)
- Board of Forestry Sensitive (BFS)
- California Department of Fish and Wildlife (CDFW) Status animals: Fully Protected, Species of Special Concern and Watch List (FP, SSC, WL)
- California Native Plant Society Rare Plant Rank (CRPR) list 1A species (plants presumed extirpated in California, and either rare or extinct elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 1B species (plants rare, threatened or endangered in California and elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 2A species (plants presumed extirpated in California but more common elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 2B species (plants rare, threatened, or endangered in California but more common elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 3 (plants which more information is needed- a review list)
- California Native Plant Society Rare Plant Rank (CRPR) list 4 (plants of limited distribution – a watch list)



4.3 Database Assessment Results

For the identification of species and habitats, a scoping was performed that extended to the nine quads surrounding and including the Upper Lake 7.5-minute USGS Quadrangle. The distance is chosen to account for the possible distribution of animal and plant species and habitats. In addition, a 1.3-mile radius scoping area was completed for the identification of northern spotted owl (NSO) Activity Centers. No spotted owl territories (Activity Centers) are located within the 1.3-mile buffer.

Biological communities present in the Study Area were classified based on existing plant community descriptions described by Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) or the Manual of California Vegetation, Online Edition (CNPS 2017b). However, in some cases it may be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

To characterize existing biological conditions and identify potential impacts to sensitive habitats resulting from implementation of the proposed project, Jacobszoon & Associate's biologist Aaron Unroe conducted a biological assessment of the Study Areas on April 22, 2019, consisting of approximately 2.5 hours. The Study Area was assessed to document: (1) the on-site plant communities, (2) existing conditions and to determine if such conditions provide suitable habitat for any special-status plant or wildlife species, and (3) if sensitive biological communities (e.g. wetlands) are present. Plant species observed during the site assessment were recorded and are listed in Appendix B.

Plants listed in Appendix B were identified using *The Jepson Manual: Vascular Plants of California 2nd Edition* (Baldwin et al. 2012) to the taxonomic level necessary to determine rarity. Names given follow *The Jepson Flora Project* (JFP 2017).

4.4 Biological Communities

4.4.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations, and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species, and are described in section 5.1 below.

4.4.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that may be afforded special consideration under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.



Sensitive Natural Communities

In addition to surveying sensitive aquatic resources (e.g., tributary watercourses, Middle Creek, etc.), Jacobszoon & Associates, Inc. biologist evaluated the Study Area for presence of sensitive natural communities. Sources for assessing sensitive natural communities include *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *List of Vegetation Alliances* (CDFW 2010), and *A Manual of California Vegetation* (CNPS 2017b).

4.5 Special-status Species

Prior to the site visit, databases (listed above) were accessed to determine whether special-status species were documented within the CNDDDB five-mile survey radius around the Study Area. During the site visit, existing habitat conditions were evaluated and used to assess the potential for presence of special-status species. The potential for each special-status species to occur in the Study Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the Study Areas is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or very poor quality. The species is not likely to be found on-site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Study Areas is unsuitable. The species has a moderate probability of being found on-site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Study Areas is highly suitable. The species has a high probability of being found on-site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDDB) on-site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for special-status species known to occur within the Study Area. The site visit does not constitute a full season protocol-level survey and is not intended to determine the actual presence or absence of a species. If a special-status species is observed during the site visit, its presence will be recorded and discussed. All plant and wildlife species observed were recorded and are included in Appendix B.

Critical habitat is a term defined by the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species.



Federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species, but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

Section 5.0: Field Survey Results

5.1 Biological Communities

Non-sensitive biological communities in the Study Area include a mixture of native/non-native grassland (herbaceous habitat) and adjacent mixed oak and conifer stands. Sensitive biological communities located within the property and adjacent to the Study Area include tributary watercourses and Middle Creek (Figures 1, 2, Appendix D).

5.1.1 Non-sensitive Biological Communities

Disturbed grassland

Mixed native/non-native annual grasslands occur on fine-textured soils, throughout cismontane California at elevations below 4,000 feet (Holland 1986). Non-native grasslands typically have dense to sparse cover of annual grasses and is often associated with native and non-native forbs. Plant species found to occur in these areas include: wild oat (*Avena fatua*), quaking rattlesnake grass (*Briza major*), soft chess (*Bromus hordeaceus*), velvet grass (*Holcus lanatus*), bull thistle (*Cirsium vulgare*), dogtail grass (*Cynosurus echinatus*), foxtail barley (*Hordeum murinum*), creeping rye grass (*Elymus glaucus*), big heron bill (*Erodium botrys*), subterranean clover (*Trifolium subterraneum*), shamrock clover (*Trifolium dubium*), cutleaf geranium (*Geranium dissectum*), buttercup (*Ranunculus sp.*), spring vetch (*Vicia sativa*), and other emerging grasses.

Mixed oak forest Alliance

Quercus agrifolia, *Quercus douglasii*, *Quercus garryana*, *Quercus kelloggii*, *Quercus lobata* and/or *Quercus wislizeni* are co-dominant in the tree canopy with *Aesculus californica*, *Arbutus menziesii*, *Pinus sabiniana*, *Pseudotsuga menziesii* and *Umbellularia californica*. Trees < 30m height; canopy is intermittent to continuous, and it may be two tiered. Shrubs are infrequent or common. Herbaceous layer is sparse or abundant, may be grassy.

Habitat adjacent to the Study Area (disturbed grassland) has a mixture of native and non-native trees sparsely placed throughout primarily the northern section of the Study Area and along the watercourse and Middle Creek. Species include bigleaf maple (*Acer macrophyllum*), Pacific madrone (*Arbutus menziesii*), bull pine (*Pinus sabiniana*), domestic almond (*Prunus dulcis*), and California black oak (*Quercus kelloggii*).



5.1.2 Sensitive Biological Communities

Water is a limited resource in Lake County, particularly in the summer months. As a result, creeks/streams which flow for more than a few months due to seasonal rains support riparian vegetation, and thereby contribute a unique habitat on the landscape. Three (3) watercourses traverse the Study Area tributary to Middle Creek; however, do dry in the summer months.

5.2 Special-status Species

5.2.1 Special-status Plant Species

Upon review of the resource databases listed in Section 4.2, 52 special-status plant species have been documented within the vicinity of the Study Area. Please refer to Appendix A for a table of all special-status plant species which occur within a nine-quad search surrounding the Study Area, as well as additional discussion of the potential for each species to occur within the Study Area. Special-status species documented within the CNDDDB five-mile survey radius are depicted in Figure 3 (Biological Assessment CNDDDB Map). Of the 52 of the special-status plant species documented within the vicinity 48 are unlikely or have no potential to occur due to:

- Hydrologic conditions (e.g., vernal pools, riverine) necessary to support the special-status plant species are not present within the Study Areas;
- Edaphic conditions (soils, e.g., rocky outcrops, serpentinite) necessary to support the special-status plant species are not present within the Study Areas;
- Topographic conditions (e.g., montane) necessary to support the special-status plant species are not present within the Study Areas;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present within the Study Areas;
- Associated vegetation communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present within the Study Areas;
- The Study Areas are geographically isolated (e.g., outside of required elevations, coastal environment) from the documented range of the special-status plant species;
- Ecological conditions (last recorded observations, human-made or natural disturbance) have encroached on species to a point to cause presumed extinction.

The 4 special-status species with potential to occur within the Study Area is described below.

Bent-flowered fiddleneck (*Amsinckia lunaris*). Rare Plant Species Rank 1B.2. Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation ranges from 10 to 2609 feet (3 to 795 meters). An annual herb, the blooming period is from Mar-Jun.

Brewer's milk-vetch (*Astragalus breweri*). Rare Plant Species Rank 4.2. Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland. Often in grassy flats, meadows moist in spring, and open slopes in chaparral. Commonly on or near volcanic or serpentine. Elevation ranges from 296 to 2395 feet (90 to 730 meters). An annual herb, the blooming period is from Apr-Jun.



Mt. Diablo cottonweed (*Micropus amphibolus*). Rare Plant Species Rank 3.2. Valley and foothill grassland, cismontane woodland, chaparral, broadleaved upland forest, often in bare, grassy or rocky slopes. Elevation ranges from 148 to 2707 feet (45 to 825 meters). An annual herb, the blooming period is from Mar-May.

Beaked tracyina (*Tracyina rostrata*). Rare Plant Species Rank 1B.2. Cismontane woodland, valley and foothill grassland, chaparral, often observed in open grassy meadows commonly within oak woodland and grassland habitats. Elevation ranges from 492 to 2609 feet (150 to 795 meters). An annual herb, the blooming period is from May-Jun.

5.2.2 *Special-status Animal species*

A total of 50 special-status wildlife species have been documented within the vicinity of the Study Area. Please refer to Appendix A for a table of all special-status wildlife species which occur within the vicinity of the Study Area, and discussion of the potential for each species to occur within the Study Area. Special-status species documented within the vicinity are depicted in Figure 3 (Biological Assessment CNDDDB Map). Of the 50 special-status wildlife species recorded within the vicinity of the Study Area only 10 special-status wildlife species recorded have a moderate potential to occur within the Study Areas. The remaining 40 special-status wildlife species documented within the vicinity of the Study Area do not have the potential to occur due to one or more of the following reasons:

- Aquatic Habitats (e.g., streams, rivers, vernal pools) necessary to support special-status wildlife species are not present within the Study Area;
- Vegetation Habitats (e.g., forested area, riparian, grassland) that provide nesting and/or foraging resources necessary to support special-status wildlife species are not present within the Study Area;
- Physical Structures and Vegetation (e.g., caves, old-growth trees) that provide nesting, cover, and/or foraging habitat necessary to support special-status wildlife species are not present within the Study Area;
- Host Plants (e.g., *Cirsium sp.*) that provide larval and nectar resources necessary to support special-status wildlife species are not present within the Study Area;
- Historic and Contemporary Disturbance (e.g., cattle grazing, agriculture) deter the presence of the special-status wildlife species from occupying the Study Area;
- The Study Areas are outside the documented nesting range of special-status wildlife species.

The 10 special-status wildlife species with potential to occur within the Study Area are described below.



Foothill yellow-legged frog (*Rana boylei*). CDFW Species of Special Concern, State Candidate Threatened. The foothill yellow-legged frog (FYLF) occupies a diverse range of ephemeral and permanent streams, rivers, and adjacent moist terrestrial habitats. Occupied streams are often partly shaded, low gradient, and dominated by coarse, unconsolidated rocky substrates. Adults breed and tadpoles develop in slow water velocity habitats.

Grasshopper sparrow (*Ammodramus savannarum*). CDFW Species of Special Concern, IUCN Least Concern. An uncommon and local, summer resident in foothills and lowlands west of the Cascade- Sierra Nevada crest from Mendocino and Trinity Counties south to San Diego County. *A. savannarum* nests on the ground in grasslands, prairie, cultivated fields, and grassy clearings in forests (Baicich and Harrison 2005); particularly in areas with a variety of grasses and tall forbs and scattered shrubs for singing perches. Nests are typically found at the base of a small clump of overhanging grass or other vegetation, perhaps in close proximity to other breeding grasshopper sparrows, and may double or triple clutch (Baicich and Harrison 2005).

White-tailed kite (*Elanus leucurus*). BLM Sensitive, CDFW Fully Protected, IUCN Least Concern. Often found in coastal, valley lowlands and agricultural areas, *E. leucurus* inhabit herbaceous and open stages of most habitats especially in cismontane California. This species' primary diet consists of small mammals (voles and other rodents), found in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (Waian et. al. 1970). Nests are often found in isolated, dense-topped trees.

Obscure bumble bee (*Bombus caliginosus*). CDFW Species of Special Concern, IUCN Vulnerable. *B. caliginosus* are often found in coastal areas from Santa Barbara county north to Washington state. Food plant genera includes *Baccharis*, *Crisum*, *Lupinus*, *Lotus*, *Grindelia*, and *Phacelia*.

Western bumble bee (*Bombus occidentalis*). CDFW Species of Special Concern, Xerces Imperiled. Formerly common throughout much of western North America, populations from southern British Columbia to central California have nearly disappeared (Xerces 2017). This species occurs in a wide variety of habitat types and are considered a generalist pollinator. This genus is most commonly encountered along stream banks, in meadows, recently burned or logged areas, or on flowers by roadsides.

Pallid bat (*Antrozous pallidus*). BLM Sensitive, CDFW Species of Special Concern, IUCN Least Concern, USFS Sensitive, WBWG High Priority. Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roosting sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.



North American porcupine (*Erethizon dorsatum*). CDFW Species of Special Concern, IUCN Least Concern, WBWG Medium Priority. *E. dorsatum* are commonly found in coniferous and mixed forested areas, and can also inhabit shrublands, tundra and deserts, albeit less frequently as this species tends to spend much of its time in trees. This herbivore eats leaves, twigs, and green plants like Skunk cabbage (*Symplocarpus foetidus*) and clovers (*Trifolium spp.*). This species makes its dens in hollow trees, decaying logs and caves in rocky areas. Recognized as primarily solitary and nocturnal, *E. dorsatum* may be seen foraging during daytime.

Humboldt marten (*Martes caurina humboldtensis*). State Endangered, CDFW Species of Special Concern, USFS Sensitive. *M. caurina humboldtensis* favors old-growth, conifer-dominated forests with dense shrub cover in large, contiguous patches. This species occurs only in the coastal redwood zone from the Oregon border south to Sonoma County, CA. This species uses hollow trees and fallen logs for resting and protection.

Yuma myotis (*Myotis yumanensis*). CDFW Species of Special Concern, BLM Sensitive, IUCN Least Concern, WBWG Low-Moderate Priority. *M. yumanensis* commonly inhabits open forests and woodlands from British Columbia across the western U.S. and south into Baja and southern Mexico. This species will use a variety of lowland habitats from scrub to coniferous forest, always near slow-moving or standing water habitats. Foraging occurs almost exclusively over water, with distribution being closely tied to bodies of water. Typical roosting habitat are caves, mines, buildings, under bridges and in cliff and tree crevices. Maternity colonies are often in caves, mines, buildings and crevices.

American badger (*Taxidea taxus*). CDFW Species of Special Concern, IUCN Least Concern. A small carnivore, with a distinctive white badge-like mark on its forehead. This species is most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils (Zeiner et al. 1990b). They dig burrows in the friable soils and frequently reuse old burrows. They prey on burrowing rodents, especially ground squirrels and pocket gophers, also on birds, insects, reptiles and carrion. Their diet shifts seasonally depending on the availability of prey. American badgers are non-migratory and are found throughout most of California, except the northern North Coast area.



Section 6.0: Assessment Summary and Recommendations

14 special-status plant and wildlife species have the potential to occur within the Study Area based on present habitat. Additionally, one sensitive biological habitat is present on-site (tributary watercourses), and no tree removal is proposed for any cannabis developments. Details of the sensitive resources are discussed in Section 5.1.2. It is recommended that any cultivation within the Study Area adhere to the prescribed State Water Resources Control Board watercourse setbacks² to protect sensitive aquatic and riparian resources, including Middle Creek. Additionally, the biological assessment was conducted outside of the blooming period for beaked tracyina (*Tracyina rostrata*) which has a moderate potential to be found within the Study Area. It is recommended that a follow-up survey be conducted within the blooming period (May-June) to assess presence or absence within the Study Area prior to any earthmoving activities within the open grassland habitat.

6.1 Biological Communities

The Study Area occurs within valley and foothill grassland habitat, with a mixed oak forest alliance biotic community (CNPS 2019b) bordering the Study Area. Additionally, Middle Creek flowing adjacent to the Study Area and subsequent floodplain come up to the property boundary. Middle Creek is considered a fish-bearing waterbody (Class I) with riffle, pooling and flatwater habitat types, a moderate gradient, and minimal vegetative cover adjacent to the Study Area. Middle Creek provides aquatic habitat for numerous resident fish, amphibian, reptilian, avian, mammal and macroinvertebrate species who may utilize this aquatic and riparian habitat.

6.2 Special-status Species

Four special-status plant and ten special-status wildlife species have a moderate potential to occur within the Study Area.

6.2.1 Special-status Plant Species

While these special-status species have the moderate potential to occur within the Study Area based on available habitat, none were observed during the biological site assessment. As the biological survey took place on April 22, 2019, outside of the blooming period for one species (*Tracyina rostrata*) with moderate potential to occur within the Study Area, it cannot be conclusively determined that this species does or does not exist within the Study Area. If earth moving work is to take place within the Study Area, it is highly recommended that a follow-up survey be conducted within the blooming period (May-June) to assess presence or absence.

² State Water Resources Control Board setbacks from watercourses for development of new cannabis cultivation sites at the time of this report are as follows: Class III watercourse (50'), Class II watercourse (100'), Class I watercourse (150').



6.2.2 Special-status Wildlife Species

Ten special-status wildlife species have a moderate or high potential to occur within the Study Area and include: foothill yellow-legged frog (*Rana boylei*), grasshopper sparrow (*Ammodramus savannarum*), white-tailed kite (*Elanus leucurus*), obscure bumble bee (*Bombus caliginosus*), western bumble bee (*Bombus occidentalis*), pallid bat (*Antrozous pallidus*), North American porcupine (*Erethizon dorsatum*), Humboldt marten (*Martes caurina humboldtensis*), Yuma myotis (*Myotis yumanensis*) and American badger (*Taxidea taxus*). While these special-status species have the potential to occur within the Study Area, none were observed within the Study Area during the biological site assessment.

Amphibians

Development within the Study Area has the potential to significantly impact amphibian species that rely on tributary watercourses that may be present within the Study Area. All development shall adhere to mandatory watercourse setbacks set forth by the State Water Resources Control Board. Additionally, any work that is to take place within any watercourses should be done when the channel is dry. If this is not an option, and a coffer dam is used, then surveys for amphibian species of concern should be conducted prior to any work being conducted.

Avifauna

Development within the Study Area has potential to significantly impact wildlife species, if present. The existing vegetation within the Study Area provides potential nesting and foraging habitat for birds, however there are no known occurrences of special-status avian species that overlap with the Study Area. Vegetation removal within the Study Area during breeding periods could significantly impact nesting bird species. Additionally, activities within the Study Area may result in the indirect visual and acoustic disturbance to avian species and has the potential to result in nest abandonment. Hence all development activities which occur between March 1st and August 31st of any year, require pre-development nesting surveys prior to the commencement of any ground moving activities.

Mammals

Development within the Study Area has potential to significantly impact mammalian wildlife species, if present. As no trees are proposed to be removed at this time, then immediate impact to any of the above listed mammal species would be reduced. As mentioned for avifauna, an impact could also be indirect via the form of visual or acoustic disturbance. Hence, prior to any ground disturbing activities within the grassland habitat, it is strongly recommended that surveys be conducted prior to construction. In addition, if any trees are to be removed elsewhere, assessment of those trees for potential bat roosts, tree vole nests, or porcupine dens should be conducted.



CWHR

CWHR Predicted Habitat Suitability is a dataset accessed through CNDDB BIOS Commercial/Spotted Owl Viewer that represents areas of suitable habitat within the species ranges based on California Wildlife Habitat Relationships (CWHR). Habitat suitability ranks of Low (less than 0.34), Medium (0.34-0.66) and High (greater than 0.66) suitability are based on the mean expert opinion suitability value for each habitat type for breeding, foraging, and cover (CDFW 2019).

Examination of the CWHR dataset was applied when: 1) the data is available for the species of concern, and 2) when there is a moderate to high potential for an animal to occur on or within 100 feet of the Study Area. As with all models, these maps are not perfect, and do not predict the occurrence of an organism, it just examines whether the areas being examined in the biological assessment is habitat which *may* support a species of special concern. This information not only informs the landowner of what may occur on their property, but also assists the biologist when conducting a survey.

6.3 Wildlife Corridors

No change to foraging or wintering habitat for migratory birds is expected as a result of the Proposed Project activities. Additionally, no significant impacts to migratory corridors for amphibian, aquatic, avian, mammalian, or reptilian species is expected as a result of the Proposed Project activities.

6.4 Critical Habitat

The Study Areas do not contain any critical habitat for federal or state-listed species.



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Appendix A: Table of Potential for Special-Status Plants and Wildlife within the Study Area



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Amphibians				
foothill yellow-legged frog <i>Rana boylei</i>	SCT BLM: S CDFW: SSC IUCN: NT USFS: S	<i>R. boylei</i> occupy a diverse range of ephemeral and permanent streams, rivers, and adjacent moist terrestrial habitats. Occupied streams are often partly shaded, low gradient, and dominated by coarse, unconsolidated rocky substrates. Adults breed and tadpoles develop in slow water velocity habitats. Dispersing juvenile and adult frogs will seek refugia in Class II streams pre-and-post breeding, opposite of salmonids.	Moderate Potential. Suitable breeding habitat exists within Middle Creek and juvenile winter refugia habitat for this species exists within the tributary watercourses on the property.	Suitable habitat exists within the Study Area and adjacent within Middle Creek, however, no work is proposed within any watercourse and this species was not observed during the biological assessment, no further recommendations for this species.
California red-legged frog <i>Rana draytonii</i>	CDFW: SSC IUCN: VU	California red-legged frogs (CRLF) primarily inhabit permanent or nearly permanent water sources (quiet streams, marshes, and ponds). Breeding tends to occur primarily in ponds, less likely in streams, and happens from November to April. This ranid frog will also use upland habitats outside of the breeding season and may be discovered under logs, rocks, and other debris during wet conditions. CRLF were historically believed to prefer only habitats and shorelines with extensive vegetation. New evidence, however, shows that the presence of American bullfrogs may influence the use of cover, and therefore predator avoidance, by CRLF.	Unlikely. Marginal breeding habitat exists within Middle Creek adjacent to the Study Area, potentially in slower-moving sections or eddies, however it is not considered preferred habitat for <i>R. draytonii</i> .	As there is no work proposed that would impact potential winter refugia habitat, there are no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
southern torrent salamander <i>Rhyacotriton variegatus</i>	CDFW: SSC IUCN: LC USFS: S	<i>R. variegatus</i> inhabit coastal redwood, Douglas-fir, mixed conifer, montane riparian and montane hardwood-conifer habitats, often within old-growth forest. This species is primarily aquatic and prefers cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water. Eggs are laid loosely in clutches of 8-11 eggs, found under rocks in streams with gravel substrates. Larvae develop in the water and may take between 3-5 years to metamorphose. <i>R. variegatus</i> are extremely moisture-dependent, when temperatures raise and flows decrease they tend to burrow into streambed substrates to reduce desiccation.	Unlikely. Suitable habitat for this species is marginal within drainages that traverse the Study Area, however, the habitat within the Study Area is not comprised of conifer, which this species prefers.	As there is no work proposed that would impact drainages (watercourses) that traverse the Study Area, there are no further recommendations for this species.
red-bellied newt <i>Taricha rivularis</i>	CDFW: SSC IUCN: LC	Inhabits coastal forests, typically in redwood (<i>Sequoia sempervirens</i>) forest habitat although also found in other forest types (hardwood etc.). Adults are terrestrial and fossorial. Transformed juveniles leave aquatic environments and go into hiding in underground shelters, often until ready to reproduce. Breeding occurs in streams often with relatively strong flows.	Unlikely. Suitable habitat for this species is marginal within drainages that traverse the Study Area, however, the habitat within the Study Area is not comprised of conifer, which this species prefers.	As there is no work proposed that would impact drainages (watercourses) that traverse the Study Area, there are no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Avifauna				
Northern goshawk <i>Accipiter gentilis</i>	BLM: S CDF: S CDFW: SSC IUCN: LC USFS: S	<i>A. gentilis</i> are often found in dense, mature and old-growth stands of conifer and deciduous habitats. Younger seral stands that include larger residual or defective trees are also used. Nest often on cooler (northerly or easterly) moderate slopes in dense vegetation or within riparian zones, but close to openings (Squires, Reynolds 1997). Nest sites are often located next to water, which may provide a break in canopy for easy access to the nest stand or may influence microclimate or prey distribution.	Unlikely. The Study Area does not contain dense, mature and old-growth stands of conifer that this species prefers.	As that the preferred habitat for this species does not exist within the Study Area and there are no proposed trees for removal, there are no further recommendations for this species.
tricolored blackbird <i>Agelaius tricolor</i>	SCE BLM: S CDFW: SSC IUCN: EN NABCI: RWL USFWS: BCC	Breeding and foraging occur in a variety of habitats including salt marshes, moist grasslands, freshwater marshes, bay-shore habitats, riparian forests and oak savannahs. <i>A. tricolor</i> use dense riparian vegetation such as Himalayan blackberry (<i>Rubus armeniacus</i>) for nesting and forage in cultivated fields, wetlands, and feedlots associated with dairy farms.	No Potential. Suitable habitat for this species does not exist within the Study Area.	There are no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
grasshopper sparrow <i>Ammodramus</i> <i>savannarum</i>	CDFW: SSC IUCN: LC	An uncommon and local, summer resident in foothills and lowlands west of the Cascade-Sierra Nevada crest from Mendocino and Trinity Counties south to San Diego County. <i>A. savannarum</i> nests on the ground in grasslands, prairie, cultivated fields, and grassy clearings in forests (Baicich and Harrison 2005); particularly in areas with a variety of grasses and tall forbs and scattered shrubs for singing perches. Nests are typically found at the base of a small clump of overhanging grass or other vegetation, perhaps in close proximity to other breeding grasshopper sparrows, and may double or triple clutch (Baicich and Harrison 2005).	Moderate Potential. Typical foraging and nesting habitat for this species exists within the Study Area, as they are comprised primarily of native/non-native emergent grassland. Vegetation removal within the Study Area during breeding periods could impact nests of this species. Additionally, project activities may result in indirect visual and acoustic disturbance to common nesting birds from construction and has the potential to result in nest abandonment.	Potential significant impacts to breeding special-status and other native birds will be mitigated through avoiding disturbance to active nests. Prior to development of the grasslands it is recommended that pre-development nesting bird surveys are performed within 14 days of initial ground disturbance or vegetation removal, if development is proposed to occur between March 1 and August 31.
golden eagle <i>Aquila chrysaetos</i>	BLM: S CDF: S CDFW: FP, WL IUCN: LC USFWS: BCC	<i>A. chrysaetos</i> inhabit rolling foothills, mountain areas, sage-juniper flats and desert. This species frequently nests in cliff-walled canyons and large trees in open areas. A carnivore that feeds primarily on small mammals (rabbits, ground squirrels etc.) sometimes includes snakes, juvenile ungulates and carrion.	No Potential. Habitat for this species does not exist within the Study Area.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
great egret <i>Ardea alba</i>	CDF: S IUCN: LC	This species requires groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas. Prey on small fish, aquatic insects, crabs, frogs, etc. Prefer to forage in shallow, relatively still waters of estuaries, lakes, slow moving watercourses, salt ponds, or mud flats. Colonial nesters that build groups of platform nests in large trees or snags, usually near a feeding area. Great egrets are highly dependent upon wetland habitats and riparian areas. The great egret requires forested areas for nesting and roosting and aquatic habitat for foraging. Night roosting and nesting occurs in trees; day roosting occurs in feeding habitat. Typical feeding habitats include fresh and saline emergent wetlands, the edges of estuaries, lakes and slow-moving rivers, mudflats and salt ponds and irrigated croplands and pastures. The method of hunting is similar to the great blue heron--standing motionless or stalking slowing then rapidly striking their prey is customary.	Unlikely. Nesting habitat for this species does not exist within the Study Area, however potential foraging habitat exists within Middle Creek which is located adjacent to the Study Area.	As there is no proposed impact to Middle Creek and no nesting habitat exists within the Study Area, no further recommendations for this species.
great blue heron <i>Ardea herodias</i>	CDF: S IUCN: LC	<i>A. herodias</i> are commonly found in shallow estuaries and fresh and saline emergent wetlands. Foraging areas include river and creek banks, ponds, lakes, and watercourses in mountainous areas. Diet consists primarily of aquatic invertebrates, frogs, snakes and fish (Cogswell 1977). This species often nests in colonies within a rookery tree.	Unlikely. Nesting habitat for this species does not exist within the Study Area, however potential foraging habitat exists within Middle Creek which is located adjacent to the Study Area.	As there is no proposed impact to Middle Creek and no nesting habitat exists within the Study Area, no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
oak titmouse <i>Baeolophus inornatus</i>	IUCN: LC NABCI: YWL USFWS: BCC	<i>B. inornatus</i> are cavity-nesters found within oak or oak-pine woodlands, and many will use scrub oaks or other brush with woodlands nearby. This species occurs within montane hardwood-conifer, montane hardwood, oak woodlands (blue, valley, and coastal oak species). <i>B. inornatus</i> typically eats seeds, various plant materials, insects and other invertebrates, foraging from the ground floor up to approximately 30 ft off the ground.	Unlikely. Foraging habitat for this species is marginal within the Study Area, however nesting habitat is sparse along Middle Creek within the Study Area. The primary habitat within the Study Area is comprised of open valley grasslands with sparse oak stands.	As that the preferred habitat for this species does not exist within the Study Area and there are no proposed trees for removal, there are no further recommendations for this species.
cackling goose <i>Branta hutchinsii leucopareia</i>	CDFW: SSC	<i>B. hutchinsii leucopareia</i> winters on lakes and inland prairies. Foraging occurs on natural pasture or that cultivated to grain; loaf on lakes, reservoirs and ponds. This species is found within natural/artificial standing waters and valley and foothill grasslands.	Unlikely. Loafing habitat for this species is marginal within the Study Area within the open valley grassland.	As there were no signs of <i>B. hutchinsii leucopareia</i> or any other goose species, and the majority of habitat adjacent to Middle Creek is suitable foraging habitat, no further recommendations for this species.
northern harrier <i>Circus hudsonius</i>	CDFW: SSC IUCN: LC	Northern harriers are year-long residents of Mendocino County. They frequent meadows, alpine meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands and are seldom found in wooded areas. Breeding occurs on meadows and marshland, both salt and freshwater. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	No Potential. Habitat for this species does not exist within the Study Area.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
<p>snowy egret <i>Egretta thula</i></p>	<p>CDFW: SSC IUCN: LC</p>	<p>The snowy egret is widespread in California along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. Snowy egrets nest in colonies on thick vegetation in isolate places – such as barrier islands, dredge-spoil islands, salt marsh islands, swamps, and marshes. They often change location from year to year. During the breeding season they feed in estuaries, salt marshes, tidal channels, shallow bays, and mangroves. They roost in dense, emergent vegetation and in trees near water. They winter in mangroves, saltwater lagoons, freshwater swamps, grassy ponds, and temporary pools. Snowy egrets forage on beaches, shallow reefs and wet fields.</p>	<p>No Potential. Habitat for this species does not exist within the Study Area.</p>	<p>No further recommendations for this species.</p>
<p>white-tailed kite <i>Elanus leucurus</i></p>	<p>BLM: S CDFW: FP IUCN: LC</p>	<p>Often found in coastal, valley lowlands and agricultural areas, <i>E. leucurus</i> inhabit herbaceous and open stages of most habitats especially in cismontane California. This species' primary diet consists of small mammals (voles and other rodents), found in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (Waiian et. al. 1970). Nests are often found in isolated, dense-topped trees.</p>	<p>Moderate Potential. The Study Area provides marginal foraging habitat for this species and the surrounding area provides marginal nesting habitat within black oak and conifer stands.</p>	<p>As no active nests or nest structures were observed within the Study Area and no trees are proposed for removal, there are no further recommendations for this species.</p>



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
prairie falcon <i>Falco mexicanus</i>	CDFW: SSC IUCN: LC USFWS: BCC	Prairie falcons breed in open country wherever they find bluffs and cliffs to nest on, including alpine habitat to about 11,000 feet. Breeding habitats include grasslands, shrubsteppe desert, areas of mixed shrubs and grasslands, or alpine tundra that supports abundant ground squirrel or pika (<i>Ochotona princeps</i>) populations. Winter habitat includes grasslands, sage scrub, dry-farmed wheat fields, irrigated cropland, and cattle feedlots. Their diet primarily consists of small mammals (ground squirrel, pika), mourning doves, horned larks, western meadowlarks, and European starlings.	Unlikely. The Study Area provides marginal foraging habitat for this species as their preferred prey (ground squirrels) are known to inhabit that area. The likelihood of this species being found within the Study Area is low due to a lack of available breeding or nesting sites within the Study Area.	There are no further recommendations for this species.
bald eagle <i>Haliaeetus leucocephalus</i>	SE BLM:S CDF: S CDFW: FP IUCN: LC USFS: S USFWS: BCC	Ocean shore, lake margins, and rivers for both nesting and wintering are required for <i>H. leucocephalus</i> and nests are often within 1 mile of water. This species often nests in large, dominant large trees such as Ponderosa pine (<i>Pinus ponderosa</i>) within old-growth or lower montane coniferous forest.	No Potential. Typical foraging and nesting habitat for this species does not exist within the Study Area.	No further recommendations for this species.
yellow-breasted chat <i>Icteria virens</i>	CDFW: SSC IUCN: LC	<i>I. virens</i> inhabit riparian thickets of willow and other brushy tangles near watercourses. Required habitat for this species is riparian forest, woodland, or scrub. Nests in low, dense riparian habitat often consisting of willow, blackberry, and wild grape within 10ft. of the ground. <i>I. virens</i> is a frugivore and insectivore, eating mostly insects gleaned from foliage.	No Potential. Typical foraging and nesting habitat for this species does not exist within the Study Area.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
black-crowned night heron <i>Nycticorax nycticorax</i>	CDFW: SSC IUCN: LC	Black-crowned night herons are common in wetlands across North America, including saltmarshes, freshwater marshes, swamps, streams, rivers, lakes, ponds, lagoons, tidal mudflats, canals, reservoirs, and wet agricultural fields. They require aquatic habitat for foraging and terrestrial vegetation for cover. They nest and roost in dense-foliated trees and dense emergent wetlands. They are very common in large nesting colonies and feed along the margins of lacustrine, large riverine, and fresh and saline emergent habitats. They spend the winter in southern and coastal portions of their breeding range as well as across Mexico and Central America, where they use mangroves, marshes, swamps, lagoons, and flooded rice fields.	Unlikely. Typical foraging and nesting habitat for this species does not exist within the Study Area, however adjacent Middle Creek may provide marginal foraging habitat.	No further recommendations for this species.
osprey <i>Pandion haliaetus</i>	CDF: S CDFW: WL IUCN: LC	<i>P. haliaetus</i> are strictly associated with large, fish-bearing waters, primarily in ponderosa pine and mixed conifer stands. Foraging habitat consists of open, clear waters, rivers, lakes, reservoirs, estuaries, lagoons, swamps, marshes, and bays. Diet consists almost exclusively live fish. Large trees, snags, and blown-out tree tops are used for cover and nesting. Nests are located on or near the tops of trees, snags, cliffs, or human-made structures.	Unlikely. Typical foraging and nesting habitat for this species does not exist within the Study Area, however adjacent Middle Creek may provide marginal foraging habitat.	As no active nests or nest structures were observed within the Study Area, the required foraging habitat does not exist within the Study Area and no trees are proposed for removal, there are no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
double-crested cormorant <i>Phalacrocorax auritus</i>	CDFW: WL IUCN: LC	The double-crested cormorant is a year-long resident along the entire coast of California and on inland lakes, in fresh, salt, and estuarine waters. They rest in the daytime and roost overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines. Their perching sites must be barren of vegetation. They require a considerable length of water, or elevated perch, for a labored take-off. The cormorant's diet is nearly exclusively fish, supplemented with insects, crustaceans, or amphibians. Nests are mostly made of finger-size sticks, often with seaweed and flotsam, lined with grass.	No Potential. Typical foraging and nesting habitat for this species does not exist within the Study Area.	No further recommendations for this species.
purple martin <i>Progne subis</i>	CDFW: SSC IUCN: LC	<i>P. subis</i> often inhabit tall old-growth trees or snags in coniferous forests with multilayered canopy and are second-cavity nesters using old woodpecker cavities, crevices in rocks, trees and cactus (Baicich et. al. 2005). Typically, <i>P. subis</i> forage in open areas near water, and their diet consists primarily of invertebrates (dragonflies, beetles, flies etc.).	No Potential. Typical foraging and nesting habitat for this species does not exist within the Study Area.	No further recommendations for this species.
yellow warbler <i>Setophaga petechia</i>	CDFW: SSC USFWS: BCC	<i>S. petechia</i> often inhabits riparian deciduous habitats of willows, alders, cottonwoods, and sometimes brushy mixed conifer habitats. Diet consists mostly of invertebrates, including midges, caterpillars, beetles, leafhoppers and wasps. <i>S. petechia</i> has strong associations with water and riparian habitat.	Unlikely. Typical foraging and nesting habitat for this species does not exist within the Study Area.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
northern spotted owl <i>Strix occidentalis caurina</i>	FT, ST CDF: S CDFW: SSC IUCN: NT NABCI: YWL	<i>S. occidentalis caurina</i> are year-round residents in dense, structurally complex forests, primarily with old-growth conifers. Nests on snags and within tree cavities, and often is associated with existing structures (old raptor nests, squirrel nests and <i>A. pomu</i> nests).	No Potential. Required dense, structurally complex forests with old-growth coniferous habitat does not occur within the Study Area or surrounding area.	No further recommendations for this species.
Fish				
Sacramento perch <i>Archoplites interruptus</i>	CDFW: SSC AFS: TH	Historically found in the sloughs, slow moving rivers and lakes of the Central Valley. This species prefers warm water and requires aquatic vegetation for juveniles. <i>A. interruptus</i> tolerates a wide range of physio-chemical water conditions.	No Potential. Middle Creek adjacent to the Study Area does not provide much in the way of aquatic vegetation required for juveniles.	As no work is proposed that may impact Middle Creek and associated habitat, no further recommendations for this species.
Russian River tule perch <i>Hysterocarpus traskii pomu</i>	AFS: VU CDFW: SSC	<i>H. traskii pomu</i> inhabits clear, flowing streams and rivers, and occupy deep pools that have complex cover in the form of aquatic and overhanging vegetation. This species is endemic to the Russian River and the lower parts of its tributaries. They feed on invertebrates, plants, and zooplankton. Mating occurs in July-Sept. In May-June the female bears 10-60 live fish.	No Potential. Middle Creek adjacent to the Study Area does not provide deep pools with complex cover (overhanging vegetation) that this species requires.	As no work is proposed that may impact Middle Creek and associated habitat, no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Clear Lake hitch <i>Lavinia exilicauda chi</i>	ST AFS: VU USFS: S	<i>L. exilicauda chi</i> are found exclusively in Clear Lake, Lake County, and associated ponds. This species spawns in tributary streams flowing into Clear Lake. Individuals over 80 days old (4-5 cm SL) are often found in the limnetic zone of Clear Lake; juveniles occupy near-shore shallow waters with protective aquatic vegetation (Moyle et al. 1989). <i>L. exilicauda chi</i> requires clean, fine-to-medium gravel substrate for spawning and egg-laying, in lower reaches of intermittent tributary streams, mostly in sections that dry up in summer (Moyle et al. 1989).	No Potential. The Study Area is not located within Clear Lake, and does not provide lake habitat required for this species.	No further recommendations for this species.
Clear Lake - Russian River roach <i>Lavinia symmetricus ssp. 4</i>	CDFW: SSC	<i>L. symmetricus ssp. 4</i> occupy diverse stream habitats, from headwater reaches to warm, low-elevation mainstem reaches. They are most abundant in warm, exposed, mid-to-low-elevation stream reaches where they prefer quiet water, especially in pools. In the Clear Lake basin, roach abundance is positively correlated with stream temperature, conductivity, gradient, coarse substrates and bedrock, and negatively correlated with depth, cover, canopy (shade), and fast water.	No Potential. Middle Creek adjacent to the Study Area may provide suitable habitat for this species.	As no work is proposed that may impact Middle Creek and associated habitat, no further recommendations for this species.
steelhead - central California coast DPS <i>Oncorhynchus mykiss irideus pop. 8</i>	FT AFS: TH	Steelhead are anadromous coastal rainbow trout. As adults, this species requires high flows, with depths of at least 18cm for passage (Bjornn and Reiser 1991). Clean well-aerated gravel beds, typically in steep, rocky reaches of upper tributaries are needed for spawning. The central California coast DPS are found from the Russian River south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins. This DPS does not include summer-run steelhead.	No Potential. Middle Creek adjacent to the Study Area does not provide suitable habitat for this species.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
steelhead – northern California DPS <i>Oncorhynchus mykiss irideus pop. 16</i>	FT AFS; TH	Steelhead are anadromous coastal rainbow trout. As adults, this species requires high flows, with depths of at least 18cm for passage (Bjornn and Reiser 1991). Clean well-aerated gravel beds, typically in steep, rocky reaches of upper tributaries are needed for spawning. The central California coast DPS are found from the Russian River south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins. This DPS does not include summer-run steelhead.	No Potential . Middle Creek adjacent to the Study Area does not provide suitable habitat for this species.	No further recommendations for this species.
chinook salmon – California coastal ESU <i>Oncorhynchus tshawytscha pop. 17</i>	FT AFS; TH	The California coastal ESU includes all naturally spawned populations of Chinook salmon from the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures greater than 27°C are lethal.	No Potential . Middle Creek adjacent to the Study Area does not provide suitable habitat for this species.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Insects				
Blennosperma vernal pool andrenid bee <i>Andrena blennospermatis</i>	CDFW: SSC	Blennosperma vernal pool andrenid bees are associated with the early spring bloom of Common stickseed (<i>Blennosperma nanum</i>) and Baker's stickseed (<i>Blennosperma bakeri</i>). The blooming period for Common stickseed is commonly from February through April, whereas the blooming period for Baker's stickseed is from March through May. <i>A. blennospermatis</i> is a solitary, ground-nesting bee. Adults emerge early in the spring, with males emerging slightly earlier and dying off sooner than females. After emergence, the females of this species mate, and then begin excavating nests in the upland areas around vernal pools. The flight period for females ranges from late February to late April (Thorp and Leong, 1995). <i>A. blennospermatis</i> spatially restricts its foraging activities to near-neighbor flowers. Thus, bees may have difficulty colonizing areas around artificially constructed vernal pools, because of their limited flight ability and low dispersal tendencies (Leong 1994, Thorp and Leong 1995, Leong, Randolph, and Thorp 1995).	Unlikely. Neither stickseed species (<i>B. nanum</i> , <i>B. bakeri</i>) was observed within the Study Area and no vernal pools exist within the Study Area.	No further recommendations for this species.
obscure bumble bee <i>Bombus caliginosus</i>	CDFW: SSC IUCN: VU	<i>B. caliginosus</i> are often found in coastal areas from Santa Barbara county north to Washington state. Food plant genera includes <i>Baccharis</i> , <i>Crisum</i> , <i>Lupinus</i> , <i>Lotus</i> , <i>Grindelia</i> , and <i>Phacelia</i> .	Moderate Potential. The Study Area provides marginal foraging habitat for this species, as they exist within open grassland surrounded by mixed oak stands.	No bee nests were observed within the Study Area. It is unlikely that the limited removal of foraging area in the grassland habitat would impact species due to surrounding foraging area still widely available.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
western bumble bee <i>Bombus occidentalis</i>	USFS: S Xerces: IM	Formerly common throughout much of western North America, populations from southern British Columbia to central California have nearly disappeared (Xerces 2017). This species occurs in a wide variety of habitat types and are considered a generalist pollinator. This genus is most commonly encountered along stream banks, in meadows, recently burned or logged areas, or on flowers by roadsides.	Moderate Potential. The Study Area provides marginal nesting and foraging habitat for this species.	No bee nests were observed within the Study Area. It is unlikely that the limited removal of foraging area in the grassland habitat would impact species due to surrounding foraging area still widely available.
brownish dubiraphian riffle beetle <i>Dubiraphia brunnescens</i>	CDFW: SSC	Found within the Upper Cache watershed (HUC 18020116+) within Lake county, CA, the brownish dubiraphian riffle beetle occurs in shallow water among submerged roots of various species of aquatic plant life (including <i>Salex sp.</i>) and on rocky shores.	No Potential. This species may be found within Middle Creek adjacent to the Study Area.	No further recommendations for this species.
Mammals				
pallid bat <i>Antrozous pallidus</i>	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roosting sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Moderate Potential. One outbuilding within the Study Area was observed which may provide marginal roosting habitat for <i>A. pallidus</i> . No signs of bat usage (guano) within the rafters or on the floor was observed. According to CWHR Predicted Habitat Suitability ³ , the Study Area falls within a range of Low (0.33) to Medium (0.55) suitability for this species.	As the CWHR Predicted Habitat Suitability is Low within the open grassland portion of the Study Area and no signs of bat presence was observed within the outbuilding, there are no further recommendations for this species.

³ CWHR Predicted Habitat Suitability is a dataset that represents areas of suitable habitat within the species ranges based on California Wildlife Habitat Relationships (CWHR 2016). Habitat suitability ranks of Low (less than 0.34), Medium (0.34-0.66) and High (greater than 0.66) suitability are based on the mean expert opinion suitability value for each habitat type for breeding, foraging, and cover.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Sonoma tree vole <i>Arborimus pomo</i>	CDFW: SSC IUCN: NT	<i>A. pomo</i> lives only in humid coastal forests consisting of Douglas-fir, grand fir, western hemlock, and/or Sitka spruce. This species requires Douglas-fir and grand fir needles as a food source and nesting materials. Nests are frequently found in trees along the bole, in branch crotches, or in the top of snags. Nests are most often found along roads, skid trails, or forest edges; however, they could exist further in the forest with dense canopies making nest identification difficult. This species is distributed along the North Coast from Sonoma County north to the Oregon border, being practically restricted to the fog belt.	No Potential. Study Area does not provide suitable habitat for this species.	No further recommendations for this species.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	<i>C. townsendii</i> is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	Unlikely. No suitable nesting habitat for this species is located within the Study Area, however marginal foraging habitat exists along Middle Creek. According to CWHR Predicted Habitat Suitability, the Study Area has a Low suitability for this species (0.33).	As the CWHR Predicted Habitat Suitability is Low for the Study Area and presence of bat species or suitable roosting habitat was not observed within the Study Area, there are no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
North American porcupine <i>Erethizon dorsatum</i>	CDFW: SSC IUCN: LC	<i>E. dorsatum</i> are commonly found in coniferous and mixed forested areas, and can also inhabit shrublands, tundra and deserts, albeit less frequently as this species tends to spend much of its time in trees. This herbivore eats leaves, twigs, and green plants like Skunk cabbage (<i>Symplocarpus foetidus</i>) and clovers (<i>Trifolium spp.</i>). This species makes its dens in hollow trees, decaying logs and caves in rocky areas. Recognized as primarily solitary and nocturnal, <i>E. dorsatum</i> may be seen foraging during daytime.	Moderate Potential. According to CWHR Predicted Habitat Suitability approximately half of the property does not fall within suitable habitat for <i>E. dorsatum</i> . The Study Area and proposed cultivation are located within this non-habitat zone. Please note, according to CWHR the northern portion of the property (riparian area) falls within a range of suitability from Medium (0.55) to High (0.77).	As work is not proposed within the riparian, no further recommendations for this species.
silver-haired bat <i>Lasiomycteris noctivagans</i>	CDFW: SSC IUCN: LC WBWG: M	<i>L. noctivagans</i> is primarily a coastal and montane forest dweller, feeding over streams, ponds, and open brushy areas. This species roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes and rarely under rocks. Additionally, <i>L. noctivagans</i> requires a water sources for drinking.	Unlikely. Preferred forest and riparian habitat exist adjacent to Study Area. The habitat within the property is comprised primarily of open grasslands and mixed stands of black oak, various conifers and maple along a riparian corridor in the northern section of the Study Area. Middle Creek (adjacent to Study Area) may provide suitable foraging habitat. According to CWHR Predicted Habitat Suitability, the Study Area is not mapped. Roosting habitat for this species does not exist within the Study Area.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Humboldt marten <i>Martes caurina humboldtensis</i>	SE CDFW: SSC USFS: S	<i>M. caurina humboldtensis</i> favors old-growth, conifer-dominated forests with dense shrub cover in large, contiguous patches. This species occurs only in the coastal redwood zone from the Oregon border south to Sonoma County, CA. This species uses hollow trees and fallen logs for resting and protection.	Moderate Potential. The Study Area is not located within the coastal redwood zone and preferred old-growth, conifer-dominated habitat does not exist within the Study Area, however, suitable habitat exists to the west within mixed stands of conifer and oak adjacent to the Study Area. According to CWHR Predicted Habitat Suitability, the Study Area falls within Low (0.22) habitat suitability.	No further recommendations for this species.
little brown bat <i>Myotis lucifugus</i>	CDFW: SSC IUCN: LC WBWG: M	<i>M. lucifugus</i> is found in most of the United States and Canada, except for the south central and southeastern United States and northern Alaska and Canada. <i>M. lucifugus</i> typically lives and feeds in forested areas near or over water, mainly on aquatic insects such as caddisflies, mayflies, moths, wasps, beetles, and midges. The little brown bat lives in three different roosting sites throughout the year: day roosts, night roosts, and hibernation roosts. Stable, ambient temperatures greatly influence site selection. Human-made structures are often selected, however both day and night roosts may be found in trees, under rocks, and in piles of wood. Day roosts provide excellent shelter, limited to no light, and typically have southwestern exposure. Night roosts are larger areas these bats can use when outside temperatures necessitate communal congregation for warmth. Hibernaculum habitats tend to include mines and caves and are typically warmer and more humid.	Unlikely. The Study Area does not provide suitable roosting habitat for this species, however Middle Creek adjacent to the Study Area provides suitable foraging habitat for this species. According to CWHR Predicted Habitat Suitability, the Study Area falls within Low (0.11) habitat suitability, however Middle Creek falls within High (0.67) habitat suitability.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
fringed myotis <i>Myotis thysanodes</i>	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	The fringed myotis is widespread in California, occurring in a wide variety of habitats including piñon-juniper, valley foothill hardwood and hardwood-conifer, generally found at 1300-2200m elevations (4000-7000ft) (Harris). They forage around streams, lakes, and ponds and their prey consists mainly of beetles and other insects. Typical roosting habitat includes caves, mine tunnels, rock crevices and old buildings.	Unlikely. The Study Area does not provide suitable roosting habitat for this species, however Middle Creek adjacent to the Study Area provides suitable foraging habitat for this species. According to CWHR Predicted Habitat Suitability, the Study Area falls within Low (0.11) habitat suitability, however Middle Creek falls within High (0.77) habitat suitability.	No further recommendations for this species.
Yuma myotis <i>Myotis yumanensis</i>	CDFW: SSC BLM: S IUCN: LC WBWG: LM	<i>M. yumanensis</i> commonly inhabits open forests and woodlands from British Columbia across the western U.S. and south into Baja and southern Mexico. This species will use a variety of lowland habitats from scrub to coniferous forest, always near slow-moving or standing water habitats. Foraging occurs almost exclusively over water, with distribution being closely tied to bodies of water. Typical roosting habitat are caves, mines, buildings, under bridges and in cliff and tree crevices. Maternity colonies are often in caves, mines, buildings and crevices.	Moderate Potential. Preferred forest habitat is marginal adjacent to Study Area. The habitat within the Study Area is comprised primarily of open grasslands and mixed stands of black oak and occasional bigleaf maple. According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to Medium (0.66) habitat suitability for this species. It is expected that <i>M. yumanensis</i> may use the open areas and riparian habitat for foraging and not for roosting.	No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
fisher [West Coast DPS] <i>Pekania pennanti</i>	ST CDFW: SSC USFS: S	Primarily solitary, except during breeding season (February - April), <i>P. pennanti</i> inhabit forest stands with late-successional characteristics including intermediate-to-large tree stages of coniferous forest and deciduous-riparian areas with high percent canopy closure. Den site and prey availability are often associated with these characteristics. <i>P. pennanti</i> use cavities, snags, logs and rocky areas for cover and denning and require large areas of mature, dense forest (CDFW 2019).	Unlikely. The Study Areas are not located within late-successional forest stands and do not provide the required habitat characteristics for this species. According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of no habitat suitability to Low (0.22) within the northern section of the Study Area adjacent to the riparian area.	No further recommendations for this species.
American badger <i>Taxidea taxus</i>	CDFW: SSC IUCN: LC	A small carnivore, with a distinctive white badge-like mark on its forehead. This species is most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils (Zeiner et al. 1990b). They dig burrows in the friable soils and frequently reuse old burrows. They prey on burrowing rodents, especially ground squirrels and pocket gophers, also on birds, insects, reptiles and carrion. Their diet shifts seasonally depending on the availability of prey. American badgers are non-migratory and are found throughout most of California, except the northern North Coast area.	Moderate Potential. The Study Area is located within open grassland habitat. According to CWHR Predicted Habitat Suitability, the Study Area falls within Medium (0.66) habitat suitability.	It is recommended that prior to development of the Study Area surveys for <i>T. taxus</i> be conducted following CDFW's survey protocol. ⁴

⁴ CDFW American Badger Survey Protocol: No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, CDFW will conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If CDFW determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3 to 5-day period. After a CDFW-qualified biologist determines the den sites are no longer active, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a CDFW-qualified biologist.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Mollusks				
Oregon floater <i>Anodonta oregonensis</i>	CDFW: SSC	<i>A. oregonensis</i> is distributed across western North America, including Oregon, Washington, California, Nevada and British Columbia. This species prefers low-gradient and low-elevation rivers, lakes and reservoirs and often overlaps with <i>A. californiensis</i> in habitat. Coho salmon (<i>Oncorhynchus kisutch</i>) are considered host species for <i>A. oregonensis</i> .	No Potential. The Study Area is located within open grassland (herbaceous) and mixed black oak and conifer habitat. Adjacent Middle Creek may provide potentially suitable habitat for this species.	As no work is proposed that would impact Middle Creek, no further recommendations for this species.
western ridged mussel <i>Gonidea angulata</i>	CDFW: SSC	<i>G. angulata</i> inhabits cold creeks and streams from low-to-mid elevations that are seasonally and not continuously turbid. <i>G. angulata</i> requires a host species to reproduce and disperse and can be found in diverse substrates from firm mud to coarse particles. Documented fish hosts for this species include hardhead (<i>Mylopharodon conocephalus</i>), pit sculpin (<i>Cottus pitensis</i>), and Tule perch (<i>Hysterocarpus traski</i>).	No Potential. The Study Area is located within open grassland (herbaceous) and mixed black oak and conifer habitat. Adjacent Middle Creek may provide potentially suitable habitat for this species.	As no work is proposed that would impact Middle Creek, no further recommendations for this species.
western pearlshell <i>Margaritifera falcata</i>	CDFW: SSC	<i>M. falcata</i> populations occur in cold, clear streams and rivers, often in reaches having fast currents and coarse substrate. This species is intolerant of heavy nutrient loads, siltation, and water pollution. This mollusk requires a fish host for its larval stage.	No Potential. The Study Area is located within open grassland (herbaceous) and mixed black oak and conifer habitat. Adjacent Middle Creek may provide potentially suitable habitat for this species.	As no work is proposed that would impact Middle Creek, no further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Reptiles				
western pond turtle <i>Emys marmorata</i>	BLM: S CDFW: SSC IUCN: VU USFS: S	<i>E. marmorata</i> are associated with permanent ponds, lakes, streams, stock ponds, marshes, seasonal wetlands, artificial areas including reservoirs or irrigation ditches, or permanent pools along intermittent streams in a wide variety of habitats. This species requires basking sites in the aquatic environment or upland, grassy openings with loose soil for nesting and overwintering. Nest sites can be found from 100-500 meters from aquatic habitat.	No Potential. The Study Area is located within open grassland (herbaceous) and mixed black oak and conifer habitat. Adjacent Middle Creek may provide potentially suitable habitat for this species, however no basking sites were observed.	As no work is proposed that would impact Middle Creek, no further recommendations for this species.
Plants				
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation ranges from 10 to 2609 feet (3 to 795 meters). An annual herb, the blooming period is from Mar-Jun.	High Potential. The Study Area provides marginally suitable habitat for this species and common fiddleneck (<i>Amsinckia intermedia</i>) was observed during the biological assessment.	Not Observed. As this species was not observed within the Study Area during the blooming period, no further recommendations for this species.
scabrid alpine tarplant <i>Anisocarpus scabridus</i>	Rank 1B.3	Upper montane coniferous forest, open stony ridges, metamorphic scree slopes of mountain peaks and cliffs in, or near red fir forest. Elevation ranges from 3773 to 7710 feet (1150 to 2350 meters). A perennial herb, the blooming period is from Jul-Aug.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
twig-like snapdragon <i>Antirrhinum virga</i>	Rank 4.3	Chaparral, lower montane coniferous forest, rocky openings, often on serpentine. Elevation ranges from 328 to 6611 feet (100 to 2015 meters). A perennial herb, the blooming period is from Jun-Jul.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Konociti manzanita <i>Arctostaphylos stanfordiana ssp. elegans</i>	Rank 1B.3	Chaparral, cismontane woodland, lower montane coniferous forest, often on volcanic soils. Elevation ranges from 738 to 6004 feet (225 to 1830 meters). A shrub, the blooming period is from Mar-May.	Unlikely. This species is known to occur on volcanic soils not present within the Study Areas.	Not Present. No further recommendations for this species.
Raiche's manzanita <i>Arctostaphylos stanfordiana ssp. raichei</i>	Rank 1B.1	Chaparral, lower montane coniferous forest (openings), rocky, serpentine sites, often on slopes and ridges. Elevation ranges from 1591 to 3511 feet (485 to 1070 meters). A perennial evergreen shrub, the blooming period is from Feb-Apr.	Unlikely. This species is known to occur on serpentine soils not present within the Study Areas.	Not Present. No further recommendations for this species.
serpentine milkweed <i>Asclepias solanoana</i>	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, often grows on serpentine soils, confined to clearings and gentle slopes with southern exposure. Elevation ranges from 755 to 6103 feet (230 to 1860 meters). A perennial herb, the blooming period is from May-Jul.	Unlikely. This species is known to occur on serpentine soils not present within the Study Areas.	Not Present. No further recommendations for this species.
Brewer's milk-vetch <i>Astragalus breweri</i>	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland. Often in grassy flats, meadows moist in spring, and open slopes in chaparral. Commonly on or near volcanics or serpentine. Elevation ranges from 296 to 2395 feet (90 to 730 meters). An annual herb, the blooming period is from Apr-Jun.	Moderate Potential. The Study Area provides marginal habitat for this species. The Study Area is comprised primarily of open grassland (herbaceous) and disturbed non-native cultivation areas.	Not Observed. As habitat is marginal and this species was not observed during the biological assessment, no further recommendations for this species.
Cleveland's milk-vetch <i>Astragalus clevelandii</i>	Rank 4.3	Chaparral, cismontane woodland, riparian forest, ultramafic seeps and creeks; sandy stream banks, gravel bars moist in spring, hillside seeps on slopes. Elevation ranges from 656 to 4922 feet (200 to 1500 meters). A perennial herb, the blooming period is from Jun-Sep.	Unlikely. This species is unlikely to be within the open grasslands (Study Area) however, potentially suitable habitat adjacent to the riparian corridor and adjacent to Middle Creek exists.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Snow Mountain rockcress <i>Boechera ultralsa</i>	Rank 1B.1	Upper montane coniferous forest, rocky sites. No distinct elevation range. A perennial herb, the blooming period is from Jun-Jul.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
scalloped moonwort <i>Botrychium crenulatum</i>	Rank 2B.2	Bogs and fens, meadows and seeps, upper montane coniferous forest, lower montane coniferous forest, marshes and swamps, moist meadows, freshwater marsh and near creeks. Elevation ranges from 3888 to 10204 feet (1185 to 3110 meters). A fern (rhizomatous), the blooming period is from Jun-Sep.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
watershield <i>Brasenia schreberi</i>	Rank 2B.3	Freshwater marshes and swamps. Aquatic, known from water bodies both natural and artificial. Elevation ranges from 3 to 7152 feet (1 to 2180 meters). A perennial rhizomatous herb (aquatic), the blooming period is from Jun-Sep.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
small-flowered calycadenia <i>Calycadenia micrantha</i>	Rank 1B.2	Chaparral, valley and foothill grassland, meadows and seeps. Rocky talus or scree; sparsely vegetated areas, occasionally on roadsides, sometimes serpentine. Elevation ranges from 1427 to 4610 feet (435 to 1405 meters). An annual herb, the blooming period is from Jun-Sep.	Unlikely. This species is known to occur in rocky talus, scree or serpentine habitats that are not present within the Study Area, however the Study Area is located within valley and foothill grassland habitat.	Not Present. No further recommendations for this species.
bristly sedge <i>Carex comosa</i>	Rank 2B.1	Marshes and swamps, coastal prairie, valley and foothill grasslands, lake margins, wetlands. Elevation ranges from 17 to 3314 feet (5 to 1010 meters). A perennial rhizomatous herb, the blooming period is from May-Sep.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Rincon Ridge <i>Ceanothus</i> <i>Ceanothus confusus</i>	Rank 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, known from volcanic or serpentine soils, dry shrubby slopes. Elevation ranges from 492 to 4200 feet (150 to 1280 meters). A shrub, the blooming period is from Feb-Jun.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
Tracy's clarkia <i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Rank 4.2	Chaparral, openings, usually on serpentine. Elevation ranges from 214 to 2133 feet (65 to 650 meters). An annual herb, the blooming period is from Apr-Jul.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
serpentine collomia <i>Collomia diversifolia</i>	Rank 4.3	Chaparral, cismontane woodland, on ultramafic soils, rocky or gravelly sites. Elevation ranges from 985 to 1969 feet (300 to 600 meters). An annual herb, the blooming period is from May-Jun.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
serpentine cryptantha <i>Cryptantha dissita</i>	Rank 1B.2	Chaparral, serpentine outcrops, ultramafic. Elevation ranges from 443 to 2412 feet (135 to 735 meters). An annual herb, the blooming period is from Apr-Jun.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
Jepson's dodder <i>Cuscuta jepsonii</i>	Rank 1B.2	Upper montane coniferous forest, lower montane coniferous forest, broadleaved upland forest, found on host species (<i>Ceanothus diversifolius</i> and <i>Ceanothus prostratus</i>). Elevation ranges from 3937 to 9006 feet (1200 to 2745 meters). An annual vine (parasitic), the blooming period is from (Jun)Jul-Sep.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
Cascade downingia <i>Downingia</i> <i>willamettensis</i>	Rank 2B.2	Cismontane woodland, valley and foothill grassland, vernal pools, often along lake margins. Elevation ranges from 49 to 3642 feet (15 to 1110 meters). An annual herb, the blooming period is from Jun-Jul.	Unlikely. Study Area does not provide suitable habitat for this species.	Not Observed. The biological assessment was conducted outside of the blooming period, however the lake-margin habitat this species is often found on does not exist within the Study Area. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Koch's cord moss <i>Entosthodon kochii</i>	Rank 1B.3	Cismontane woodland, moss growing on soil of riverbanks. Elevation ranges from 607 to 1198 feet (185 to 365 meters). A moss, there is no distinct blooming period.	No Potential. Study Area does not provide suitable habitat for this species.	Not Present. No further recommendations for this species.
Snow Mountain willowherb <i>Epilobium nivium</i>	Rank 1B.2	Upper montane coniferous forest, chaparral, often found in crevices of volcanic and metavalcanics rock outcrops and associated talus. Elevation ranges from 4593 to 7218 feet (1400 to 2200 meters). A perennial herb, the blooming period is from Jun-Oct.	No Potential. This species is known to occur in serpentine soils which are not present within the Study Area.	Not Present. No further recommendations for this species.
bare monkeyflower <i>Erythranthe nudata</i>	Rank 4.3	Chaparral, cismontane woodland, moist areas, often along drainages and roadsides in serpentine seeps. Elevation ranges from 820 to 2297 feet (250 to 700 meters). An annual herb, the blooming period is from May-Jun.	No Potential. This species is known to occur in serpentine soils which are not present within the Study Area.	Not Present. No further recommendations for this species.
Siskiyou fritillaria <i>Fritillaria glauca</i>	Rank 4.2	Upper montane coniferous forest, alpine boulder and rock field, subalpine coniferous forest, often found on serpentine, talus slopes. Elevation ranges from 5693 to 8005 feet (1735 to 2440 meters). A perennial herb, the blooming period is from Jun-Jul.	No Potential. This species is known to occur in serpentine soils which are not present within the Study Area.	Not Present. No further recommendations for this species.
Purdy's fritillary <i>Fritillaria purdyi</i>	Rank 4.3	Chaparral, cismontane woodland, lower montane coniferous forest, usually on serpentine. Elevation ranges from 574 to 7399 feet (175 to 2255 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	No Potential. This species is known to occur in serpentine soils which are not present within the Study Area.	Not Present. No further recommendations for this species.
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	Rank 1B.2	Marshes and swamps (freshwater), vernal pools, often found in clay soils, usually in vernal pools or sometimes lake margins. Elevation ranges from 13 to 7907 feet (4 to 2410 meters). An annual herb, the blooming period is from Apr-Aug.	No Potential. This species is known to occur in mesic sites (vernal pools, swamps etc.) which are not present within the Study Area.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Toren's grimmia <i>Grimmia torenii</i>	Rank 1B.3	Cismontane woodland, lower montane coniferous forest, chaparral, often found in openings, rocky, boulder and rock walls, carbonate, volcanic. Elevation ranges from 1067 to 3806 feet (325 to 1160 meters). A moss, no distinct blooming period.	No Potential. This species is known to occur in rocky openings, sometimes on volcanic soils which are not present within the Study Area.	Not Present. No further recommendations for this species.
amethyst stickseed <i>Hackelia amethystina</i>	Rank 4.3	Lower montane coniferous forest, upper montane coniferous forest, meadows and seeps, forest clearings, or along streambanks and roadsides, often in deep soil. Elevation ranges from 4922 to 7595 feet (1500 to 2315 meters). A perennial herb, the blooming period is from Jun-Jul.	Unlikely. This species is known to along streambanks or within meadows and seeps (mesic), which are marginal within the Study Area.	Not Present. The biological assessment was conducted outside of the blooming period, however as no work is proposed within 150' of any watercourse and habitat is marginal within the Study Area, no further recommendations for this species.
serpentine sunflower <i>Helianthus exilis</i>	Rank 4.2	Chaparral, cismontane woodland, serpentine seeps. Elevation ranges from 492 to 5004 feet (150 to 1525 meters). An annual herb, the blooming period is from Jun-Nov.	No Potential. Known to occur in serpentine soils, not present within the Study Area.	Not Present. No further recommendations for this species.
Mendocino tarplant <i>Hemizonia congesta</i> <i>ssp. calyculata</i>	Rank 4.3	Cismontane woodland, valley and foothill grassland, open woods and forests, sometimes on serpentine. Elevation ranges from 738 to 4593 feet (225 to 1400 meters). An annual herb, the blooming period is from Jul-Nov.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland), however this species is known to occur in serpentine soils which are not present within the Study Area.	Not Present. No further recommendations for this species.
glandular western flax <i>Hesperolinon adenophyllum</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils, generally found in serpentine chaparral. Elevation ranges from 1395 to 4413 feet (425 to 1345 meters). An annual herb, the blooming period is from May-Aug.	No Potential. The required habitat types are not present in the Study Areas.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
two-carpetate western flax <i>Hesperolinon bicarpellatum</i>	Rank 1B.2	Serpentine barrens at edges of chaparral. Elevation ranges from 574 to 2707 feet (175 to 825 meters). An annual herb, the blooming period is from May-Jul.	No Potential. The required habitat types are not present in the Study Area.	Not Present. No further recommendations for this species.
drymaria-like western flax <i>Hesperolinon drymarioides</i>	Rank 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland, often associated with serpentine soils mostly within chaparral. Elevation ranges from 1313 to 3609 feet (400 to 1100 meters). An annual herb, the blooming period is from May-Aug.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland), however this species is known to occur more commonly in serpentine soils in chaparral which is not present within the Study Area.	Not Present. No further recommendations for this species.
Bolander's horkelia <i>Horkelia bolanderi</i>	Rank 1B.2	Lower montane coniferous forest, chaparral, meadows and seeps, valley and foothill grassland, often found in grassy margins of vernal pools and meadows. Elevation ranges from 1493 to 2805 feet (455 to 855 meters). A perennial herb, the blooming period is from Jun-Aug.	Unlikely. Grassland is present within the Study Area; however, this species commonly occurs in mesic areas and grassy margins of vernal pools, which are not present within the Study Area.	Not Present. No further recommendations for this species.
small groundcone <i>Kopsiopsis hookeri</i>	Rank 2B.3	North coast coniferous forest, open woods, shrubby places, generally on Gautheria shallon. Elevation ranges from 394 to 4708 feet (120 to 1435 meters). A perennial herb, the blooming period is from Apr-Aug.	No Potential. The required habitat types are not present in the Study Area.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
<i>Colusa layia</i> <i>Layia septentrionalis</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, scattered colonies in fields and grassy slopes in sandy or serpentine soil. Elevation ranges from 49 to 3609 feet (15 to 1100 meters). An annual herb, the blooming period is from Apr-May.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland), however this species is known to occur in serpentine soils which are not present within the Study Area.	Not Observed. Biological assessment was conducted during the blooming period, no further recommendations for this species.
bristly leptosiphon <i>Leptosiphon acicularis</i>	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 181 to 4922 feet (55 to 1500 meters). An annual herb, the blooming period is from Apr-Jul.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland).	Not Observed. Biological assessment was conducted during the blooming period, no further recommendations for this species.
broad-lobed leptosiphon <i>Leptosiphon latiseclus</i>	Rank 4.3	Broadleaved upland forest, cismontane woodland. Elevation ranges from 558 to 4922 feet (170 to 1500 meters). An annual herb, the blooming period is from Apr-Jun.	No Potential. Suitable habitat for this species is not present within the Study Areas.	Not Present. No further recommendations for this species.
Rattan's leptosiphon <i>Leptosiphon rattanii</i>	Rank 4.3	Cismontane woodland, lower montane coniferous forest, often on rocky or gravelly soils. Elevation ranges from 5578 to 6562 feet (1700 to 2000 meters). An annual herb, the blooming period is from May-Jul.	No Potential. The required habitat types are not present in the Study Areas.	Not Present. No further recommendations for this species.
redwood lily <i>Lilium rubescens</i>	Rank 4.2	Chaparral, lower montane coniferous forest, broadleaved upland forest, upper montane coniferous forest, north coast coniferous forest, sometimes on serpentine. Elevation ranges from 99 to 6267 feet (30 to 1910 meters). A perennial herb (bulb), the blooming period is from Apr-Aug.	No Potential. The required habitat types are not present in the Study Area.	Not Present. No further recommendations for this species.
Anthony Peak lupine <i>Lupinus antoninus</i>	Rank 1B.2	Upper montane coniferous forest, lower montane coniferous forest, often in open areas with surrounding forest; rocky sites. Elevation ranges from 3986 to 7399 feet (1215 to 2255 meters). A perennial herb, the blooming period is from May-Jul.	No Potential. The required habitat types are not present in the Study Area.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	Rank 3.2	Valley and foothill grassland, cismontane woodland, chaparral, broadleaved upland forest, often in bare, grassy or rocky slopes. Elevation ranges from 148 to 2707 feet (45 to 825 meters). An annual herb, the blooming period is from Mar-May.	Moderate Potential. Habitat is marginal within the Study Areas (valley and foothill grassland).	Not Observed. Biological assessment was conducted during the blooming period and the species was not observed. No further recommendations for this species.
green monardella <i>Monardella viridis</i>	Rank 4.3	Broadleaved upland forest, chaparral, cismontane woodland. Elevation ranges from 328 to 3314 feet (100 to 1010 meters). A perennial herb, the blooming period is from Jun-Sep.	No Potential. The required habitat types are not present in the Study Area.	Not Present. No further recommendations for this species.
Gairdner's yampah <i>Perideridia gairdneri</i> <i>ssp. gairdneri</i>	Rank 4.2	Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Often found on adobe flats or grasslands, wet meadows and vernal pools, under <i>Pinus radiata</i> along the coast; mesic sites. Elevation ranges from 0 to 2002 feet (0 to 610 meters). A perennial herb, the blooming period is from Jun-Oct.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland) however, this species has a strong affinity for mesic sites which are not located within the Study Area.	Not Present. No further recommendations for this species.
Mayacamas popcornflower <i>Plagiobothrys lithocaryus</i>	Rank 1A	Chaparral, cismontane woodland, valley and foothill grassland, moist sites. Elevation ranges from 985 to 1477 feet (300 to 450 meters). An annual herb, the blooming period is from Apr-May.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland) however, this species has a strong affinity for mesic sites which are not located within the Study Area.	Not Present. No further recommendations for this species.
eel-grass pondweed <i>Potamogeton zosteriformis</i>	Rank 2B.2	Marshes and swamps, ponds, lakes, streams. Elevation ranges from 296 to 7005 feet (90 to 2135 meters). An annual herb (aquatic), the blooming period is from Jun-Jul.	No Potential. Suitable habitat for this species is not present within the Study Area.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	Rank 4.2	Cismontane woodland, valley and foothill grassland, vernal pools and mesic sites, north coast coniferous forest. Elevation ranges from 49 to 1542 feet (15 to 470 meters). An annual herb (aquatic), the blooming period is from Feb-May.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland) however, this species has a strong affinity for mesic sites (vernal pools) which are not located within the Study Area.	Not Present. No further recommendations for this species.
marsh checkerbloom <i>Sidalcea oregana</i> <i>ssp. hydrophila</i>	Rank 1B.2	Meadows and seeps, riparian forest, meadows, wet soils along streambanks. Elevation ranges from 1493 to 6660 feet (455 to 2030 meters). A perennial herb, the blooming period is from Jul-Aug.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland) however, this species has a strong affinity for mesic sites which are not located within the Study Area.	Not Present. No further recommendations for this species.
pubescent needle grass <i>Stipa lemmonii</i> var. <i>pubescens</i>	Rank 3.2	Chaparral, lower montane coniferous forest, mostly found in serpentine chaparral. At upper elevations it may be found in Ponderosa pine (<i>Pinus ponderosa</i>) forest. Elevation ranges from 3380 to 4315 feet (1030 to 1315 meters). A perennial grass, the blooming period is from May-Jul.	No Potential. Suitable habitat for this species is not present within the Study Area.	Not Present. No further recommendations for this species.
Hoffman's bristly jewelflower <i>Streptanthus glandulosus</i> ssp. <i>hoffmannii</i>	Rank 1B.3	Chaparral, cismontane woodland, valley and foothill grassland, moist, steep rocky banks in serpentine and non-serpentine soils. Elevation ranges from 197 to 2510 feet (60 to 765 meters). An annual herb, the blooming period is from Mar-Jul.	Unlikely. Habitat is marginal within the Study Areas (valley and foothill grassland) however, this species has a strong affinity for mesic sites which are not located within the Study Area.	Not Present. No further recommendations for this species.
green jewelflower <i>Streptanthus hesperidis</i>	Rank 1B.2	Cismontane woodland, openings in chaparral or woodland, serpentine, rocky sites. Elevation ranges from 788 to 2510 feet (240 to 765 meters). An annual herb, the blooming period is from May-Jul.	No Potential. The required habitat types are not present in the Study Area.	Not Present. No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
beaked tracyina <i>Tracyina rostrata</i>	Rank 1B.2	Cismontane woodland, valley and foothill grassland, chaparral, often observed in open grassy meadows commonly within oak woodland and grassland habitats. Elevation ranges from 492 to 2609 feet (150 to 795 meters). An annual herb, the blooming period is from May-Jun.	Moderate Potential. Habitat is marginal within the Study Areas (valley and foothill grassland).	Not Observed. Biological assessment was conducted outside of the blooming period, it is recommended that a follow-up survey be conducted during the blooming period.
oval-leaved viburnum <i>Viburnum ellipticum</i>	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 706 to 4593 feet (215 to 1400 meters). A shrub, the blooming period is from May-Jun.	No Potential. Suitable habitat for this species is not present within the Study Areas.	Not Present. No further recommendations for this species.



Abbreviation	Organization
FC	Federal Candidate
FE	Federal Endangered
FT	Federal Threatened
FPE	Federally Proposed for listing as Endangered
FPT	Federally Proposed for listing as Threatened
FPD	Federally Proposed for delisting
SC	State Candidate
SE	State Endangered
ST	State Threatened
SCE	State Candidate for listing as Endangered
SCT	State Candidate for listing as Threatened
SCD	State Candidate for delisting
Rank 1A	CRPR Rank 1A: Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	CRPR Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2B	CRPR Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CRPR Rank 3: Plants about which CNPS needs more information (a review list)

Potential to Occur:

No Potential. Habitat on and within 100 feet adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and within 100 feet adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or within 100 feet adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or within 100 feet adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Results and Recommendations:

Present. Species was observed on the site or has been recorded (i.e. CNDDb, other reports) on the site recently.

Not Present. Species is assumed to not be present due to a lack of key habitat components.

Not Observed. Species was not observed during surveys.



Abbreviation	Organization
AFS_EN	American Fisheries Society - Endangered
AFS_TH	American Fisheries Society - Threatened
AFS_VU	American Fisheries Society – Vulnerable
BLM_S	Bureau of Land Management – Sensitive
BCC	USFWS Birds of Conservation Concern
CDF_S	Calif. Dept. of Forestry & Fire Protection – Sensitive
CDFW_SSC	Calif. Dept. of Fish & Wildlife – Species of Special Concern
CDFW_FP	Calif. Dept. of Fish & Wildlife – Fully Protected
CDFW_WL	Calif. Dept. of Fish & Wildlife – Watch List
IUCN_CR	IUCN – Critically Endangered
IUCN_EN	IUCN – Endangered
IUCN_NT	IUCN – Near Threatened
IUCN_VU	IUCN – Vulnerable
IUCN_LC	IUCN – Least Concern
IUCN_DD	IUCN – Data Deficient
IUCN_CD	IUCN – Conservation Dependent
NABCI_RWL	North American Bird Conservation Initiative – Red Watch List
NABCI_YWL	North American Bird Conservation Initiative – Yellow Watch List
NMFS_SC	National Marine Fisheries Service – Species of Concern
USFS_S	U. S. Forest Service - Sensitive
USFWS_BCC	U. S. Fish & Wildlife Service Birds of Conservation Concern
WBWG_H	Western Bat Working Group – High Priority
WBWG_MH	Western Bat Working Group – Medium-High Priority
WBWG_M	Western Bat Working Group – Medium Priority
WBWG_LM	Western Bat Working Group – Low-Medium Priority
Xerces: CI	Xerces Society – Critically Imperiled
Xerces: IM	Xerces Society – Imperiled
Xerces: VU	Xerces Society – Vulnerable
Xerces: DD	Xerces Society – Data Deficient



Appendix B: List of Species Observed



SCIENTIFIC NAME	COMMON NAME
Plants	
<i>Acer macrophyllum</i>	bigleaf maple
<i>Anthriscus caucalis</i>	bur chevril
<i>Amsinckia intermedia</i>	common fiddleneck
<i>Arbutus menziseii</i>	Pacific madrone
<i>Avena barbata</i>	slim oat
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus hordeaceus</i>	soft chess
<i>Castilleja attenuate</i>	narrow leaved owl's clover
<i>Castilleja tenuis</i>	hairy indian paintbrush
<i>Centaurea solstitialis</i>	yellow star thistle
<i>Cirsium vulgare</i>	bullthistle
<i>Claytonia perfoliate</i>	miner's lettuce
<i>Dichelostemma congestum</i>	fork toothed ookow
<i>Erodium cicutarium</i>	coastal heron's bill
<i>Eschscholzia californica</i>	California poppy
<i>Geranium dissectum</i>	wild geranium
<i>Hordeum murinum</i>	foxtail barley
<i>Lamium purpureum</i>	purple dead nettle
<i>Linaria vulgaris</i>	butter and eggs
<i>Medicago minima</i>	small bull clover
<i>Pinus sabiniana</i>	bull pine
<i>Plantago lanceolate</i>	ribwort
<i>Poa annua</i>	annual blue grass
<i>Poa bulbosa ssp. vivipara</i>	bulbous blue grass
<i>Prunella vulgaris var. lanceolate</i>	mountain selfheal
<i>Prunus dulcis</i>	almond
<i>Quercus kelloggii</i>	California black oak
<i>Raphanus raphanistrum</i>	wild radish
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Sinapis arvensis</i>	wild mustard
<i>Toxicodendron diversilobum</i>	poison oak
<i>Trifolium sp.</i>	clover
<i>Vicia villosa</i>	hairy vetch



SCIENTIFIC NAME	COMMON NAME
Wildlife	
Amphibians	
<i>N/A</i>	-
Avifauna	
<i>Cathartes aura</i>	turkey vulture
<i>Junco hyemalis</i>	dark-eyed junco
<i>Zonotrichia atricapilla</i>	golden-crowned sparrow
Crustaceans	
<i>N/A</i>	-
Fish	
<i>N/A</i>	-
Insects	
<i>N/A</i>	-
Mammals	
<i>N/A</i>	-
Mollusks	
<i>N/A</i>	-
Reptiles	
<i>N/A</i>	-



Appendix C: Representative Photographs of the Study Area





Photo 1: Open grassland habitat within the Study Area

Date: April 22, 2019





Photo 2: Open grassland habitat within the Study Area

Date: April 22, 2019





Photo 3: Open-sided barn structure within grassland habitat

Date: April 22, 2019





Photo 4: Small structure (and almond tree) adjacent to the open-sided barn structure within grassland habitat

Date: April 22, 2019





Photo 5: Middle Creek adjacent to the open grassland habitat within the Study Area

Date: April 22, 2019





Photo 6: Pooling event in Middle Creek adjacent to the open grassland habitat within the Study Area

Date: April 22, 2019





Photo 7: Middle Creek adjacent to the open grassland habitat within the Study Area

Date: April 22, 2019





Photo 8: Class II watercourse flowing west-to-east, tributary to Middle Creek, located within the northern section of the Study Area

Date: April 22, 2019



Appendix D: Supporting Figures (Maps)



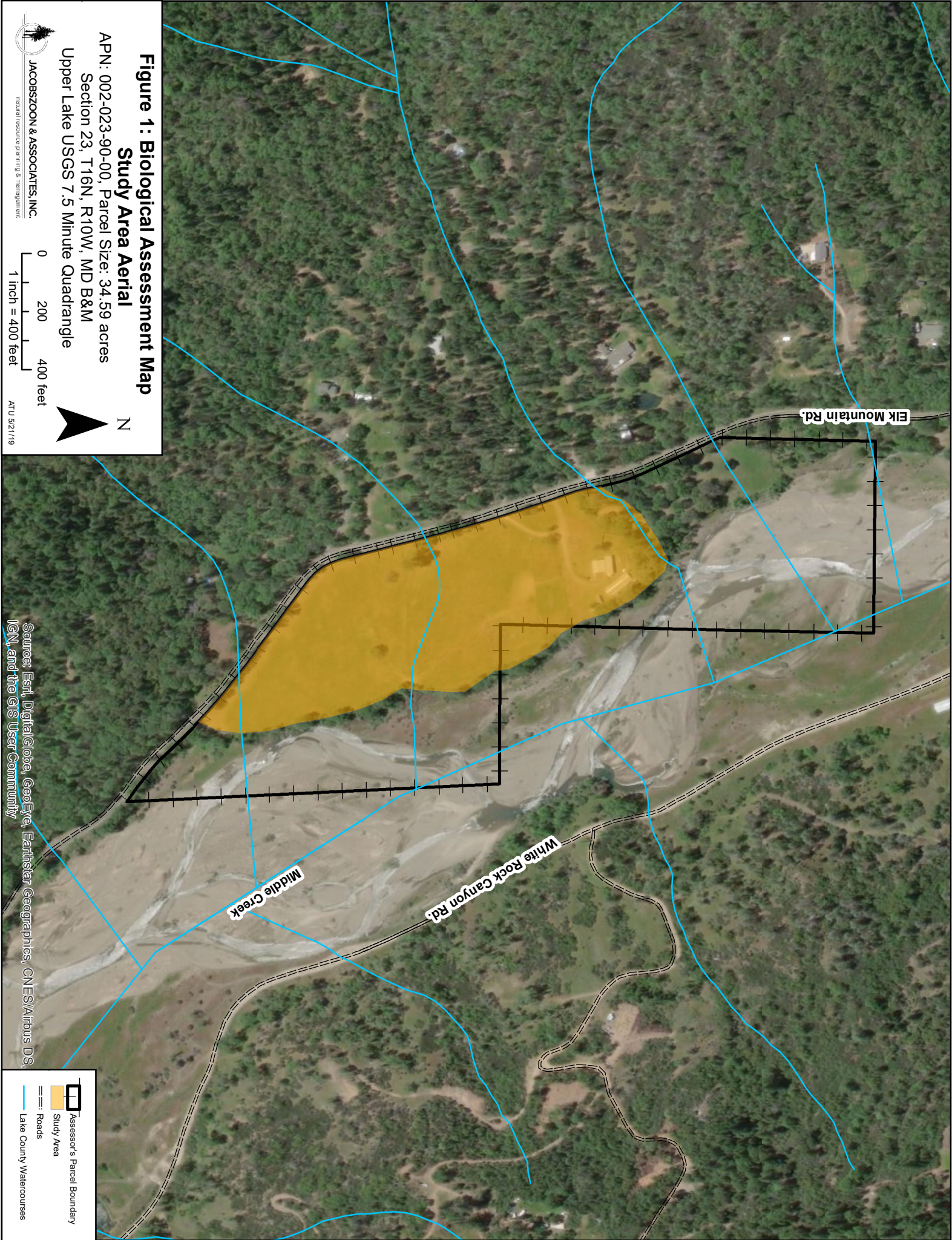


Figure 1: Biological Assessment Map

Study Area Aerial

APN: 002-023-90-00, Parcel Size: 34.59 acres

Section 23, T16N, R10W, MD B&M

Upper Lake USGS 7.5 Minute Quadrangle

JACOBSZON & ASSOCIATES, INC.
Natural Resource Planning & Management

0 200 400 feet
1 inch = 400 feet



ATU 5/21/19

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, IGN, and the GIS User Community

Assessor's Parcel Boundary
Study Area
Roads
Lake County Watercourses

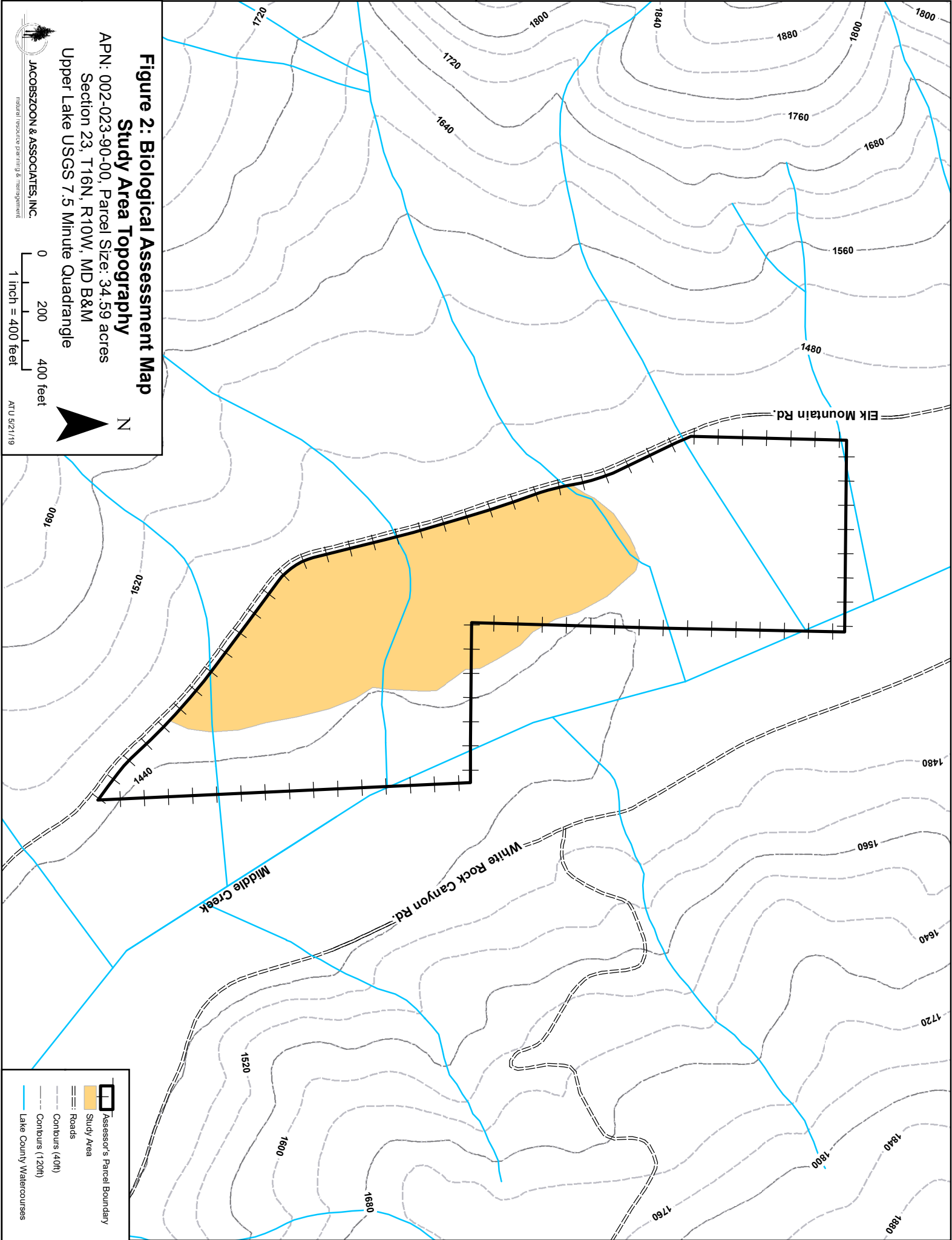


Figure 2: Biological Assessment Map

Study Area Topography

APN: 002-023-90-00, Parcel Size: 34.59 acres
Section 23, T16N, R10W, MD B&M
Upper Lake USGS 7.5 Minute Quadrangle

