Attachment 5

JACOBSZOON & ASSOCIATES, INC.

natural resource planning & management

BIOLOGICAL RESOURCES ASSESSMENT

Prepared For:

CA USA Global
15263, 15095, 15187, 15365 Elk Mountain Road,
Upper Lake, CA 95485

APNs: 002-021-150-000, 002-021-160-000, 002-021-170-000, 002-021-040-000

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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 15263, 15095, 15187, 15365 Elk Mountain Road, Upper Lake, CA 95485 (APNs: 002-021-150, 002-021-160, 002-021-170, 002-021-040, Appendix D: Figures 1-4) 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)
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- Field Survey Results (Section 5)
- Assessment Summary and Recommendations (Section 6)
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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. Three (3) biological assessments were conducted to assess biotic resources within the Study Area on June 3, 2019, July 24, 2019 and April 14, 2020. 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 Area:

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 (CFGC), 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 (CFGC), 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 existing lower montane coniferous forest *Pinus ponderosa-Pseudotsuga menziesii* (MCV2 Alliance) habitat, cismontane woodland *Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grassland Association) and grassland habitat (*Avena barbata, fatua* – MCV2 Alliance) for the cultivation of commercial cannabis within four (4) parcels (Appendix D: Figures 1-4). 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). Refer to Appendix B for a full list of species observed during the biological assessments 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 Areas are approximately 7 miles northwest of Upper Lake, within the unincorporated community of Vann. The properties are located along Elk Mountain Road, located in Sections 3, 4, 10, 32, 33 Townships 16N, 17N, Range 10W, Mount Diablo Base and Meridian, in the Elk Mountain USGS 7.5 minute quadrangle. The properties are located within the West Fork Middle Creek Watershed (HUC-12 180201160202), located within a range of 1560 feet (476 meters) to 2640 feet (805 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 (4) soil mapping units: Maymen-Hopland-Mayacama association, 20 to 60 percent slopes, Sanhedrin-Kekawaka-Speaker complex complex, 30 to 50 percent slopes, Xerofluvents-Riverwash complex, and Yorktree-Hopland-Squawrock complex, 15 to 50 percent slopes. 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.

Sanhedrin-Kekawaka-Speaker complex (Map Unit Symbol: 202): This series is comprised of a combination of Sanhedrin, Kekawaka, and Speaker soils series. The unit is 35 percent Sanhedrin gravelly loam, 30 percent Kekawaka loam, and 15 percent Speaker gravelly loam. Included are small areas of Bamtush, Marpa, and Maymen soils. Included areas make up about 20 percent of the total acreage. The native vegetation is mainly mixed conifers and hardwoods. Elevation is 2,200 to 4,800 feet.

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.

Yorktree-Hopland-Squawrock complex (Map Unit Symbol: 252): This unit is approximately 30 percent Yorktree clay loam, 30 percent Hopland loam, and 15 percent Squawrock gravelly loam. Included with this mapping unit are small areas of Etsel, Mayacama, Maymen, Pomo, and Yorkville soils and Rock outcrop. Included areas make up about 25 percent of the total acreage of the unit. The native vegetation is mainly oaks and annual grasses and forbs on the Yorktree and Hopland soils and annual grasses and forbs with a few scattered oaks on the Squawrock soil. Elevation is 1,800 to 3,000 feet.

Below are details about the soils that make up the above map units.

- 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.
- Sanhedrin series consists of deep, well drained soils on mountains. These soils formed in material weathered from sandstone or shale. Slope is 5 to 75 percent.
- Kekawaka series consists of very deep, well drained soils on hills and mountains. These soils formed in material weathered from sandstone or siltstone. Slopes range from 2 to 75 percent.
- Speaker series consists of moderately deep, well drained soils on mountains. These soils formed in material weathered from sandstone or shale. Slope is 15 to 75 percent.
- Xerofluvents consist of very deep, excessively drained soils that formed in alluvium derived from mixed rock sources.

- Yorktree series consists of deep, well drained soils on hills and mountains. These soils formed in material weathered from graywacke, shale, sandstone, or siltstone. Slopes range from 15 to 75 percent.
- Squawrock series consists of moderately deep, well drained soils on hills and mountains. These soils formed in material weathered from sandstone. Slopes range from 15 to 75 percent.

3.2 Biota and Land Use

The dominant vegetation within the Study Area is typical of mid-elevation lower montane coniferous forest (*Pinus ponderosa-Pseudotsuga menziesii* (MCV2 Alliance)), cismontane woodland with a mixed tree canopy (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii* – *Q. lobata* / grass Association), and annual grasses and forbs (*Avena* spp. – *Bromus* spp. – MCV2 Alliance) within the herbaceous layer. The overstory within the Study Area is comprised primarily of mixed oaks (*Quercus lobata, Q. douglasii, Q. garryana, Q. kelloggii*), Pacific madrone (*Arbutus menziseii*), Ponderosa pine (*Pinus ponderosa*), bull pine (*Pinus sabiniana*) and Douglas fir (*Pseudotsuga menziesii*). The understory within the Study Area is comprised primarily of mixed native/non-native grassland species and does not have dense shrubby vegetation.

West Fork Middle Creek flows through the parcels and provides aquatic/riparian habitat for special-status amphibian, fish, and invertebrate species, as well as foraging habitat for some avian and mammalian species. Willows (*Salix* sp.) exist within and adjacent to the watercourse and provide aquatic vegetation for avian species to utilize. Tributary watercourses flow into West Fork Middle Creek following the topography and may provide suitable amphibian habitat, including winter refugia for juvenile dispersing foothill yellow-legged frogs (*Rana boylii*). One (1) pond was observed within the Study Area (Appendix D: Figures 1-4). Western pond turtles (*Emys marmorata*) were observed within the pond basking on floating wooden debris and along the bank. It is expected that the surrounding cismontane woodland and mixed native/non-native grassland habitat provides *E. marmorata* with suitable nesting habitat. No *E. marmorata* nests were observed during the biological assessments.

A pre-existing orchard was observed within the Study Area which provides a flat, open expanse mostly cleared of native vegetation. The Study Area is located within rural properties, currently used for small farm purposes. Recent fires have caused significant damage to the existing flora within the Study Area and have likely removed much of the understory vegetation within the burned areas.

For a complete list of all species observed during the biological assessment see Appendix B: List of Species Observed. 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.

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 within the Study Areas.

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 was evaluated by reviewing topographic maps, aerial photography, the California Native Plant Society's Rare Plant Rank (CRPR) electronic inventory (online edition, v8-03 0.45), the California Natural Diversity Database (CNDDB) Spotted Owl Data Viewer (online edition, v5.89.14c) and the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) Quick Viewer (online edition, v5.89.14c). Lake County also maintains a mapped database of biological resources including special features such as wetland, vernal pool, aquatic, and riparian communities.

The CRPR database produces a list of sensitive plants potentially occurring at a site based on various site characteristics including the 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, is 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 Lake 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 Elk Mountain 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 2020b). 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 biologists conducted assessments of the Study Area on June 3, 2019, July 24, 2019, and April 14, 2020 consisting of approximately 11.5 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, vernal pools) 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 2019).

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 for the presence of sensitive aquatic resources (e.g. watercourses, vernal pools, etc.), Jacobszoon & Associates, Inc. biologists evaluated the Study Area for presence of sensitive terrestrial natural communities (e.g. coastal and valley freshwater marsh). Sources for assessing sensitive terrestrial or aquatic 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 2020b).

4.5 Special-status Species

Prior to the site visit, databases (listed above) were accessed to determine whether special-status species (CNDDB) were documented within five (5) miles of the Study Area. During the site visits, 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 Areas was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the Study Area 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 Study Area 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 Area 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 Area 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. CNDDB) on-site recently.

The site assessments are intended to identify the presence or absence of suitable habitat for special-status species known to occur within the Study Area. A 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

Biological communities in the Study Areas include cismontane woodland habitat including mixed oak stands (*Quercus kelloggii* (MCV2 Alliance)), lower montane coniferous forest (*Pinus ponderosa – Pseudotsuga menziesii (*MCV2 Alliance)), mixed native/non-native grassland herbaceous habitat (*Avena barbata, fatua* (MCV2 Alliance)) within clearings and orchards. The West Fork Middle Creek and tributary watercourses provide riparian habitat throughout the Study Areas (Appendix D: Figures 1-4).

5.1.1 Non-sensitive Biological Communities

Wild oats and annual brome grasslands *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance – MCV2 Alliance, Non-native grassland (Holland), Avena fatua herbaceous alliance (NVCS (2009)), Non-native/ornamental grass (CalVeg), Valley grassland (Munz)

Avena barbata, Avena fatua, Brachypodium distachyon, Briza maxima, Bromus diandrus, Bromus hordeaceus and/or *Hordeum murinum* is dominant or co-dominant with other non-natives in the herbaceous layer such as *Atriplex semibaccata* and *Hordeum* spp. Emergent trees and shrubs may be present at low cover. Herbs < 1.2 m; cover is open to continuous. Habitats: All topographic settings in foothills, waste places, rangelands, and openings in woodlands. The USFWS Wetland Inventory (2012 national list) recognizes *Bromus hordeaceus* as a FACU plant. Membership rules:

- *Avena fatua* > 50% relative cover, and native herbs relatively low in cover in the herbaceous layer (Keeler-Wolf and Evens 2006).
- *Avena* spp. > 50% relative cover, and native herbs < 10% relative cover in the herbaceous layer (Evens and Kentner 2006, Klein et al. 2007).
- *Avena* spp. > 75% relative cover; other non-native or native plants < 5% absolute cover, if present, in the herbaceous layer (Evens and San 2004).
- *Brachypodium distachyon* > 60% relative cover in the herbaceous layer (Keeler-Wolf et al. 2003a).

- *Bromus diandrus, B. hordeaceus,* and/or *Brachypodium distachyon* > 80% relative cover separately or co-dominant with non-natives; natives usually with low or insignificant cover (Klein et al. 2007).
- *Bromus hordeaceus* > 50% relative cover in the herbaceous layer (Jimerson et al. 2000).
- *Avena* spp., *Brachypodium* spp., *Briza* spp., *Bromus diandrus, Bromus hordeaceus* and/or *Erodium* spp. > 50% relative cover individually or in combination (Klein et al. 2015).

Ponderosa pine – Douglas fir forest and woodland *Pinus ponderosa – Pseudotsuga menziesii* MCV2 Alliance, Coast range mixed coniferous forest (Holland), *Pinus ponderosa – Pseudotsuga menziesii* forest alliance (NVCS (2009)), Douglas-fir-Ponderosa pine (CalVeg), Yellow pine forest (Munz)

Pinus ponderosa and *Pseudotsuga menziesii* are co-dominant in the tree canopy with *Abies concolor, Arbutus menziesii, Calocedrus decurrens, Pinus jeffreyi, Pinus lamertiana, Quercus chrysolepis, Quercus garryana* and *Quercus kelloggii*. Trees < 75m; canopy is continuous or intermittent. Shrub layer is sparse or intermittent. Herbaceous layer is sparse. Habitats: Raised stream benches, terraces, slopes and ridges of all aspects. Soils are deep and well drained. The USFWS Wetland Inventory (1996 national list) recognizes *Pinus ponderosa* and *Pseudotsuga menziesii* as FACU plants. Membership rules:

- *Pseudotsuga menziesii* and *Pinus ponderosa* both > 30% relative cover in the canopy (Bingham 1999).

California black oak forest and woodland *Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grass Association, Black oak woodland (Holland), *Quercus kelloggii* forest alliance (NVCS (2009)), California black oak (CalVeg), Mixed evergreen forest (Munz)

Quercus kelloggii is dominant or co-dominant in the tree canopy with *Abies concolor, Arbutus menziesii, Calocedrus decurrens, Pinus attenuate, Pinus ponderosa, Pseudotsuga menziesii, Quercus agrifolia, Quercus chrysolepis, Quercus garryana, Quercus lobata* and *Umbellularia californica.* Trees < 40m; canopy is open to continuous, or savanna-like. Shrub layer is open to intermittent. Herbaceous layer is sparse or grassy. Habitats: All aspects and topographic settings. Soils are moderately to excessively drained. Membership rules:

- *Quercus kelloggii* > 50% relative cover in overstory, and conifers are not conspicuous; or *Q. kelloggii* > 30% relative cover in the overstory and *Pinus ponderosa* may co-dominate (Klein et al. 2007).
- *Quercus kelloggii* > 50% relative cover in the tree canopy; emergent conifers < 10% relative cover (Keeler-wolf et al. 2003b, Evens and San 2005).
- *Quercus kelloggii* and *Pinus ponderosa* 30-60% relative cover in the overstory (cf. Keeler-Wolf et al. 2003b).

5.1.2 Sensitive Biological Communities

Water is a limited resource is Lake County, due to the Mediterranean climate and prolific usage, particularly in the summer months. As a result, creeks and 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. The West Fork Middle Creek flows through the parcels along the valley floor and provides unique/rare aquatic and riparian habitat in the region (Appendix D: Figures 1, 2). During the biological assessments water was flowing in the West Fork Middle Creek, providing suitable fish passage and aquatic habitat for amphibian or avian species to utilize. One (1) pond was observed within the Study Area providing aquatic habitat for amphibian and reptile species, including several western pond turtles (*E. marmorata*) observed basking within the pond and along the banks. The pond and watercourses are considered sensitive biological communities which provide rare/unique habitat within the landscape and shall be protected from development. As per CalCannabis regulations, ponds have a 150ft buffer to minimize disturbance.

5.2 Special-status Species

5.2.1 Special-status Plant Species

Upon review of the resource databases listed in Section 4.2, forty-seven (47) special-status plant species and one (1) terrestrial plant community (Coastal and Valley Freshwater Marsh) 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 (CNDDB) documented within five (5) miles of the Study Area are depicted (Appendix D: Figure 3 CNDDB Map). Of the forty-seven (47) of the special-status plant species documented within the vicinity, seven (7) special-status plant species have a moderate to high potential to occur within the Study Area based on the habitat present. The terrestrial plant community (Coastal and Valley Freshwater Marsh) does not occur within the Study Area. The remaining forty (40) special-status plant 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:

- Hydrologic conditions (e.g., vernal pools, riverine) necessary to support the special-status plant species are not present within the Study Area;
- Edaphic conditions (soils, e.g., rocky outcrops, serpentinite) necessary to support the special-status plant species are not present within the Study Area;
- Topographic conditions (e.g., montane) necessary to support the special-status plant species are not present within the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present within the Study Area;
- Associated vegetation communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present within the Study Area;
- The Study Area is 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 seven (7) special-status species with potential to occur within the Study Area are 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.

bare monkeyflower (*Erythranthe nudata*). Rare Plant Species 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.

Mendocino tarplant (*Hemizonia congesta* ssp. *calyculata*). 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.

Bolander's horkelia (*Horkelia bolanderi*). Rare Plant Species 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.

Bristly leptosiphon (*Leptosiphon acicularis*). Rare Plant Species 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.

Broad-lobed leptosiphon (*Leptosiphon latisectus*). Rare Plant Species 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.

Mayacamas popcornflower (*Plagiobothrys lithocaryus*). Rare Plant Species 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.

5.2.2 Special-status Animal species

Upon review of the resource databases listed in Section 4.2, forty-four (44) 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 (Appendix D: Figure 3 CNDDB Map). Of the forty-four (44) special-status wildlife species within the vicinity of the Study Area, eighteen (18) special-status wildlife species recorded have a moderate to high potential to occur within the Study Area based on habitat present. The remaining tweny-six (26) 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 Area is outside the documented nesting range of special-status wildlife species.

The eighteen (18) special-status wildlife species with potential to occur within the Study Areas are described below.

northern goshawk (*Accipiter gentilis*). BLM Sensitive, CDF Sensitive, CDFW Species of Special Concern, IUCN Least Concern, USFS Sensitive. *A. gentilis* 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.

golden eagle (*Aquila chrysaetos*). BLM Sensitive, CDF Sensitive, CDFW Fully Protected, Watch List, IUCN Least Concern, USFWS Bird of Conservation Concern. *A. chrysaetos* 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.

great blue heron (*Ardea herodias*). CDF Sensitive, IUCN Least Concern. *A. herodias* 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.

American peregrine falcon (*Falco peregrinus anatum*). CDF Sensitive, CDFW Fully Protected, USFWS Bird of Conservation Concern. American peregrine falcons are year-long residents in Mendocino and Lake County. Peregrine falcons require protected cliffs and ledges for cover. Peregrines often breed near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes or mounds (Zeiner et al. 1990a); however, they will nest on human-made structures and will occasionally use snag cavities or old nests of other raptors. Nests are a scrape on a depression or ledge in an open site. Peregrines feed almost exclusively on other birds, usually songbirds, pigeons, shorebirds and waterfowl, which they kill in midair. The Peregrine falcon has re-occupied most of its historical breeding range in California, including the Coast and Cascade Ranges. They inhabit all counties in the state at various times of the year.

osprey (*Pandion haliaetus*). CDF Sensitive, CDFW Watch List, IUCN Least Concern. *I. virens* 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. virens* is a frugivore and insectivore, eating mostly insects gleaned from foliage.

purple martin (*Progne subis*). CDFW Species of Special Concern, IUCN Least Concern. *P. haliaetus* 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 treetops are used for cover and nesting. Nests are located on or near the tops of trees, snags, cliffs, or human-made structures.

yellow warbler (*Setophaga petechia*). CDFW Species of Special Concern, USFWS Bird of Conservation Concern. *S. petechia* 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. *S. petechia* has strong associations with water and riparian habitat.

Clear Lake hitch (*Lavinia exilicauda chi*). State Threatened, AFS Vulnerable, USFS Sensitive. *L. exilicauda chi* 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). *L. exilicauda chi* requires clean, fine-to-medium gravel substrate for spawing and egg-laying, in lower reaches of intermittent tributary streams, mostly in sections that dry up in summer (Moyle et al. 1989).

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*). State Candidate Endangered, 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.

western red bat (*Ladiurus blossevillii*). CDFW Species of Special Concern, IUCN Least Concern, WBWG High Priority. *L. blossevillii* prefer habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Roosting sites are often in trees found from sea level through mixed conifer forests. This species is often associated with riparian habitats set within coniferous forests and meadows.

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.

fringed myotis (*Myotis thysanodes*). CDFW Species of Special Concern, BLM Sensitive, IUCN Least Concern, USFS Sensitive, WBWG High Priority. The fringed myotis is widespread in California, occurring in a wide variety of habitats including pinyon-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.

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.

fisher [West Coast DPS] (*Pekania pennanti*). State Threated, CDFW Species of Special Concern, USFS Sensitive. *P. pennanti* are primarily solitary, except during breeding season (February – April and they 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. *P. pennanti* use cavities, snags, logs and rocky areas for cover and denning and require large areas of mature, dense forest (CDFW 2020).

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.

western pond turtle (*Emys marmorata*). BLM Sensitive, CDFW Species of Special Concern, IUCN Vulnerable, USFS Sensitive. *E. marmorata* 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.

Section 6.0: Assessment Summary and Recommendations

Seven (7) special-status plants and eighteen (18) wildlife species have the potential to occur within the Study Area based on present habitat. Recent fires in the region have burned significant swaths through the properties and trees may need to be felled as these burnt trees may be considered hazardous. It is recommended that surveys for nesting birds, denning mammals (bats, marten, fisher), and burrowing mammals (American badger) are conducted prior to any groundbreaking[1] activities or removal of trees in an effort to reduce incidental take[2] of any species of special concern within the Study Area.

West Fork Middle Creek flows through the valley floor (adjacent to/within the Study Area) and provides unique riparian habitat within the region. Additionally, an off-stream pond is located within the Study Area (Appendix D: Figure 1, 2) and western pond turtles (*Emys marmorata*) were observed basking within the pond during the biological assessment. All watercourses and the pond are considered sensitive aquatic habitats. Details of the sensitive resources are discussed in Section 5.1.2. It is recommended that any proposed work that may impact aquatic habitats be conducted outside the State Water Resources Control Board's setbacks[3] to protect sensitive aquatic resources.

6.1 Biological Communities

The Study Area is comprised of lower montane coniferous forest (*Pinus ponderosa-Pseudotsuga menziesii* (MCV2 Alliance)), cismontane woodland with a mixed tree canopy (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii* – *Q. lobata* / grass Association), and annual grasses and forbs (*Avena* spp. – *Bromus* spp. – MCV2 Alliance) within the herbaceous layer. West Fork Middle Creek provides suitable riparian/aquatic habitat for avian, and mammalian species to utilize. Additionally, the pond within the Study Area provides suitable aquatic habitat for reptile species to utilize within the Study Area.

6.2 Special-status Species

Seven (7) special-status plant species and eighteen (18) special-status wildlife species have a moderate or high potential to occur within the Study Area based on present habitat.

[1] Groundbreaking activities include vegetation removal, earthmoving/grading or excavation.
[2] "Take" includes all activities listed in Section 86 of the Fish and Game Code, as well as collecting, handling, marking, manipulating or conducting other procedures on wildlife, whether wildlife are released, or retained in possession (https://www.wildlife.ca.gov/Licensing/Scientific-Collecting).
[3] 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').

6.2.1 Special-status Plant Species

Seven (7) special-status plant species have a moderate or high potential to occur within the Study Area and include bent-flowered fiddleneck (*Amsinckia lunaris*), bare monkeyflower (*Erythranthe nudata*), Mendocino tarplant (*Hemizonia congesta ssp. calyculata*), Bolander's horkelia (*Horkelia bolanderi*), bristly leptosiphon (*Leptosiphon acicularis*), broad-lobed leptosiphon (*Leptosiphon latisectus*), Mayacamas popcornflower (*Plagiobothrys lithocaryus*). 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 assessments. The biological assessments were conducted within the blooming period for all species.

6.2.2 Special-status Wildlife Species

Eighteen (18) special-status wildlife species have a moderate or high potential to occur within the Study Area and include: northern goshawk (*Accipiter gentilis*), golden eagle (*Aquila chrysaetos*), great blue heron (*Ardea herodias*), American peregrine falcon (*Falco peregrinus anatum*), osprey (*Pandion haliaetus*), purple martin (*Progne subis*), yellow warbler (*Setophaga petechia*), Clear Lake hitch (*Lavinia exilicauda chi*), obscure bumble bee (*Bombus caliginosus*), western bumble bee (*Bombus occidentalis*), pallid bat (*Antrozous pallidus*), western red bat (*Ladiurus blossevillii*), Humboldt marten (*Martes caurina humboldtensis*), fringed myotis (*Myotis thysanodes*), Yuma myotis (*Myotis yumanensis*), fisher [West Coast DPS] (*Pekania pennanti*), American badger (*Taxidea taxus*), and western pond turtle (*Emys marmorata*). While these special-status species have the potential to occur within the Study Area, only western pond turtles were observed within the pond during the biological site assessments.

<u>Amphibians</u>

Development within the Study Area does not have the potential to significantly impact amphibian species. It is Jacobszoon & Associates, Inc. understanding that no work is proposed within West Fork Middle Creek or the pond. If any work within or with the ability to impact any watercourses or the pond is proposed, the work shall be conducted in compliance with CDFW's Lake and Streambed Alteration Agreement and 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 the potential to significantly impact wildlife species, including bird 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 (Appendix D: Figure 3 CNDDB Map). Groundbreaking activities (vegetation/tree removal) within the Study Area during avian breeding periods[4] 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. Any development activities that include vegetation or tree removal which occur between March 1st and August 31st of any year, require pre-development nesting bird surveys prior to the commencement of any groundbreaking activities within areas of suitable nesting bird habitat.

Mammals

Development within the Study Area has the potential to significantly impact mammalian wildlife species, if present. If trees are not proposed for removal, 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. Prior to any groundbreaking activities within the Study Areas or if trees are to be removed, it is recommended that surveys be conducted prior to construction following CDFW survey protocol.

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. (CDFW's Conservation Measures for Biological Resources That May Be Affected by Program-level Actions – Appendix I).

[4] Typical nesting bird season is March 1st through August 31st

Special-status bat survey protocol: **To avoid and minimize loss of species:** If suitable roosting habitat for special-status bats will be affected by Project construction (e.g. removal of buildings, modification of bridges), a qualified biologist will conduct surveys for special-status bats during the appropriate time of day to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days prior to beginning ground disturbance and/or construction. Survey methodology may include visual surveys of bats (e.g. anabat, etc.). Visual surveys will include trees within 0.25 miles of the Project construction activities. The type of survey will depend on the condition of the potential roosting habitat. If no bats are found, then no further study is required. If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts. If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed prior to implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not re-enter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activities (e.g. during hibernation or while females in maternity colonies are nursing young). **To compensate for loss of habitat:** If roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities may not commence until permanent, elevated bat houses have been installed outside of, but near the construction area. Placement and height will be determined by a qualified wildlife biologist, but the height of bat house will be at least 15 feet. Bat houses will be multi-chambered and be purchased or constructed in accordance with CDFW standards. The number of bat houses required will be dependent upon the size and number of colonies found, but at least one (1) bat house will be installed for each pair of bats (if occurring individually), or of sufficient number to accommodate each colony of bats to be relocated.

Reptiles

It is Jacobszoon & Associates, Inc. understanding that no work is proposed that would have an impact on the pond. If any work is proposed within 500 feet of the pond, it is recommended that surveys for special-status reptile species and nests are conducted prior to any development of the grassland habitat following CDFW survey protocol.

CDFW western pond turtle survey protocol: Pre-construction surveys for western pond turtle (WPT) shall be conducted by a qualified biologist 14 days before and 24 hours before the start of ground-disturbing activities where suitable habitat exists (e.g. along riparian areas and freshwater emergent wetlands). If WPT or their nests are observed during pre-construction surveys, a qualified biologist shall be on-site to monitor construction in suitable WPT habitat. WPT found within the construction area will be allowed to leave of its own volition or it will be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat immediately upstream or downstream from the Project site. If WPT nests are identified in the work area during pre-construction surveys, a 300-foot no disturbance buffer shall be established between the nest and any areas of potential disturbance. Buffers shall be clearly marked with temporary fencing. Construction will not be allowed to commence in the exclusion area until hatchlings have emerged from the nest, or the nest is deemed inactive by a qualified biologist. For research, monitoring and broodstock collection activities, instream sampling equipment (e.g. fyke nets, screw traps) will be inspected daily to ensure no WPT individuals are caught in the equipment. If WPT are found in sampling equipment, a biologist will relocate WPT to suitable downstream habitat.

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 Areas. As with all models, these maps are not perfect and do not predict the occurrence of an organism. CWHR 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 any groundbreaking activities.

6.4 Critical Habitat

No change to critical habitat shall occur as a result of proposed projects within the Study Area.

Section 7.0: References

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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 *Rana boylii*	SCT BLM: S CDFW: SSC IUCN: NT USFS: S	*R. boylii* 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.	**Unlikely.** According to CWHR Predicted Habitat Suitability[5], the Study Area falls within Low (0.33) habitat suitability for this species.	**Not Present.** No work is proposed within any watercourse. There are no recommendations for this species.
red-bellied newt *Taricha rivularis*	CDFW: SSC IUCN: LC	*T. rivularis* inhabits coastal forests, typically in redwood (*Sequoia sempervirens*) 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.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.
Avifauna				
northern goshawk *Accipiter gentilis*	BLM: S CDF: S CDFW: SSC IUCN: LC USFS: S	*A. gentilis* 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.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to High (0.77) habitat suitability for this species.	**Not Observed.** If trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *A. gentilis* or active nests are observed within the Study Area work shall cease and CDFW will be notified.

[5] 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. (Data obtained through CNDDB in BIOS)

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
tricolored blackbird *Agelaius tricolor*	SCE BLM: S CDFW: SSC IUCN: EN NABCI: RWL USFWS: BCC	*A. tricolor* breed and forage in a variety of habitats including salt marshes, moist grasslands, freshwater marshes, bay-shore habitats, riparian forests and oak savannahs. *A. tricolor* use dense riparian vegetation such as Himalayan blackberry (*Rubus armeniacus*) for nesting and forage in cultivated fields, wetlands, and feedlots associated with dairy farms.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.
golden eagle *Aquila chrysaetos*	BLM: S CDF: S CDFW: FP, WL IUCN: LC USFWS: BCC	*A. chrysaetos* 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.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Medium (0.55) to High (0.77) habitat suitability for this species.	**Not Observed.** If trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *A. chrysaetos* or active nests are observed within the Study Area work shall cease and CDFW will be notified.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
great egret *Ardea alba*	CDF: S IUCN: LC	*A. alba* 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.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.
great blue heron *Ardea herodias*	CDF: S IUCN: LC	*A. herodias* 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.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to Medium (0.44) habitat suitability for this species.	**Not Observed.** If trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *A. herodias* or active nests are observed within the Study Area work shall cease and CDFW will be notified.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Bell's sage sparrow *Artemisiospiza belli belli*	CDFW: WL USFWS: BCC	*A. belli belli* inhabit coastal sagebrush, chaparral often dominated by chamise and/or California sagebrush (Johnson and Marten 1992), and other open, scrubby habitats. In chaparral *A. belli belli* tend toward younger, less dense stands, becoming less common in older, taller stands. Nest sites are often found within shrubs, bunchgrasses, and occasionally on the ground under shrubs including California sagebrush, brittlebush, white sage, black sage, California buckwheat, bush mallow, chamise, cholla, and willow. This species is an opportunistic feeder, eating grains and insects from a variety of habitats.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.
American peregrine falcon *Falco peregrinus anatum*	CDF: S CDFW: FP USFWS: BCC	*F. peregrinus anatum* are year-long residents in Mendocino and Lake County. Peregrine falcons require protected cliffs and ledges for cover. Peregrines often breed near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes or mounds (Zeiner et al. 1990a); however, they will nest on human-made structures and will occasionally use snag cavities or old nests of other raptors. Nests are a scrape on a depression or ledge in an open site. Peregrines feed almost exclusively on other birds, usually songbirds, pigeons, shorebirds and waterfowl, which they kill in midair. The Peregrine falcon has re-occupied most of its historical breeding range in California, including the Coast and Cascade Ranges. They inhabit all counties in the state at various times of the year.	**High Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within High (0.88) habitat suitability for this species.	**Not Observed.** No cliff-nesting sites exist within the Study Area; however, if trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *F. peregrinus anatum* or active nests are observed within the Study Area work shall cease and CDFW will be notified.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
bald eagle *Haliaeetus leucocephalus*	BLM: S CDF: S CDFW: FP IUCN: LC USFS: S USFWS: BCC	*H. leucocephalus* require large bodies of water or free-flowing rivers with abundant fish and adjacent snags, cliffs, or perches (Zeiner et al. 1990a). Perches are often high in large-limbed trees on snags, broken-topped trees, or on rocks near water. Nests are found in large, old-growth, or dominant live trees with open branches (Call 1978). Nest stands frequently have less than 40% canopy, with some foliage shading the nest, and are within a mile of a permanent water source. In the winter, they roost communally in dense, sheltered, remote conifer stands often within 10 to 12 miles from feeding areas. Although bald eagle populations are recovering in the western U.S., nesting bald eagles are still very rare in this region. Bald eagles are tolerant of human activity when feeding, and may congregate around fish processing plants, dumps, and below dams where fish concentrate. In winter, bald eagles can also be seen in dry, open uplands if there is access to open water for fishing.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Area falls within Low (0.22) habitat suitability for this species.	**Not Observed.** No suitable nesting sites exist within the Study Area. If *H. leucocephalus* or active nests are observed within the Study Area work shall cease and CDFW will be notified.
yellow-breasted chat *Icteria virens*	CDFW: SSC IUCN: LC	*I. virens* 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. virens* is a frugivore and insectivore, eating mostly insects gleaned from foliage.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
osprey *Pandion haliaetus*	CDF: S CDFW: WL IUCN: LC	*P. haliaetus* 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 treetops are used for cover and nesting. Nests are located on or near the tops of trees, snags, cliffs, or human-made structures.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to High (0.77) habitat suitability for this species.	**Not Observed.** If trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *P. haliaetus* or active nests are observed within the Study Area work shall cease and CDFW will be notified.
double-crested cormorant *Phalacrocorax auritus*	CDFW: WL IUCN: LC	*P. auritus* are 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.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.
purple martin *Progne subis*	CDFW: SSC IUCN: LC	*P. subis* 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, *P. subis* forage in open areas near water, and their diet consists primarily of invertebrates (dragonflies, beetles, flies etc.).	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.33) to High (1.0) habitat suitability for this species.	**Not Observed.** If trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *P. subis* or active nests are observed within the Study Area work shall cease and CDFW will be notified.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
yellow warbler *Setophaga petechia*	CDFW: SSC USFWS: BCC	*S. petechia* 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. *S. petechia* has strong associations with water and riparian habitat.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to High (0.55) habitat suitability for this species.	**Not Observed.** If trees are proposed for removal, it is recommended that nesting bird surveys are completed prior to tree removal. If *S. petechia* or active nests are observed within the Study Area work shall cease and CDFW will be notified.
northern spotted owl *Strix occidentalis caurina*	FT, ST CDF: S CDFW: SSC IUCN: NT NABCI: YWL	*S. occidentalis caurina* 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 *A. pomo* nests).	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region. Required dense, structurally complex forests with old-growth coniferous habitat does not occur within the Study Area.	**Not Present.** There are no recommendations for this species.
Fish				
Pacific lamprey *Entosphenus tridentatus*	AFS: VU BLM: S CDFW: SSC USFS: S	*E. tridentatus* are anadromous, but also with a number of permanent freshwater resident populations. This species is parasitic as adults, feeding on blood and body fluids of its prey. To breed, *E. tridentatus* migrate into fresh water and dig nests. Adults die post-breeding. Larvae/juveniles live 5-6 years in freshwater before returning to the ocean.	**Unlikely.** West Fork Middle Creek may provide suitable habitat for this species; however, according to CNDDB BIOs the Study Area falls outside of the mapped geographic range for *E. tridentatus*.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Russian River tule perch *Hysterocarpus traskii pomo*	AFS: VU CDFW: SSC	*H. traskii pomo* 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.	**Unlikely.** West Fork Middle Creek may provide suitable habitat for this species; however, according to CNDDB BIOs the Study Area falls outside of the mapped geographic range for *H. traskii pomo*.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.
Clear Lake hitch *Lavinia exilicauda chi*	ST AFS: VU USFS: S	*L. exilicauda chi* 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). *L. exilicauda chi* requires clean, fine-to-medium gravel substrate for spawing and egg-laying, in lower reaches of intermittent tributary streams, mostly in sections that dry up in summer (Moyle et al. 1989).	**Moderate Potential.** West Fork Middle Creek may provide suitable habitat for this species. According to CNDDB BIOs the Study Area falls within the mapped geographic range for *L. exilicauda chi*.	**Not Observed.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.
coho salmon – southern Oregon/northern California ESU *Oncorhynchus kisutch pop. 2*	ST FT AFS: TH	*O. kisutch* are anadromous, migrating and spawning in streams that flow directly into the ocean or tributaries of larger rivers. Migration peaks around mid-May till mid-June. Coho lay egg masses (redds), often located between a pool and a riffle. *O. kisutch* juveniles' diet consists primarily of insects. Upon reaching the sea, young feed primarily on planktonic crustaceans, and as they age *O. kisutch* will migrate farther into the sea and hunt larger organisms such as jellyfish, squid, and fishes.	**Unlikely.** West Fork Middle Creek may provide aquatic habitat for fish species; however, according to CNDDB BIOS this stream does not provide the intrinsic potential for this species.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	FT AFS: TH	*O. mykiss irideus* 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.	**Unlikely.** West Fork Middle Creek may provide aquatic habitat for fish species; however, according to CNDDB BIOS this stream does not provide the intrinsic potential for this species.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.
steelhead – northern California DPS *Oncorhynchus mykiss irideus pop. 16*	FT AFS: TH	*O. mykiss irideus* 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 northern California coast DPS are found from in Sacramento/San Joaquin flowing waters from Redwood Creek south to the Gualala River, inclusive. This DPS does not include summer-run steelhead.	**Unlikely.** West Fork Middle Creek may provide aquatic habitat for fish species; however, according to CNDDB BIOS this stream does not provide the intrinsic potential for this species.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.
chinook salmon – California coastal ESU *Oncorhynchus tshawytscha pop. 17*	FT AFS: TH	*O. tshawytscha* 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 for migration and reproductive success. Water temperatures greater than 27°C are lethal.	**Unlikely.** West Fork Middle Creek may provide aquatic habitat for fish species; however, according to CNDDB BIOS this stream does not provide the intrinsic potential for this species.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Klamath crayfish *Pacifastacus leniusculus klamathensis*	CDFW: SSC	*P. leniusculus klamathensis'* range extends from British Columbia in Canada, Idah and south to central California. Habitat ranges from small streams to large rivers and lakes from the coastal to the sub-alpine regions.	**Unlikely.** West Fork Middle Creek may provide suitable habitat for this species; however, according to CNDDB BIOs the Study Area falls outside of the mapped geographic range for *P. leniusculus klamathensis*.	**Not Present.** No work is proposed that would impact West Fork Middle Creek. There are no recommendations for this species.
Insects				
Blennosperma vernal pool andrenid bee *Andrena blennospermatis*	CDFW: SSC	*A. blennospermatis* are associated with the early spring bloom of Common stickyseed (*Blennosperma nanum*) and Baker's stickyseed (*Blennosperma bakeri*). The blooming period for Common stickyseed is commonly from February through April, whereas the blooming period for Baker's stickyseed is from March through May. *A. blennospermatis* 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). *A. blennospermatis* 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.** Suitable habitat for this species does not exist within the Study Areas. Neither stickyseed species (*B. nanum, B. bakeri*) was observed and no vernal pools exist within the Study Area.	**Not Present.** There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
obscure bumble bee *Bombus caliginosus*	CDFW: SSC IUCN: VU	*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*.	**Moderate Potential.** The Study Area provides marginal nesting and foraging habitat for this species, as they exist within open grassland surrounded by mixed oak stands.	**Not Observed.** No bee nests were observed within the Study Area. If bee nests are observed during development, the project will be modified to cause the least impact to the nest.
western bumble bee *Bombus occidentalis*	State: CE USFS: S Xerces: IM	*B. occidentalis* are formerly common throughout much of western North America; however, 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, as they exist within open grassland surrounded by mixed oak stands.	**Not Observed.** No bee nests were observed within the Study Area. If bee nests are observed during development, the project will be modified to cause the least impact to the nest.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Mammals				
pallid bat *Antrozous pallidus*	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	*A. pallidus* are 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.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.11) to High (0.77) suitability for this species.	**Not Observed.** No signs of bat presence (guano, active roosts) were observed within the Study Area. Tree removal within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys are recommended prior to any tree removal. If *A. pallidus* are observed, CDFW shall be notified.
Sonoma tree vole *Arborimus pomo*	CDFW: SSC IUCN: NT	*A. pomo* 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.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Townsend's big-eared bat *Corynorhinus townsendii*	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	*C. townsendii* 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.** According to CWHR Predicted Habitat Suitability, the Study Area falls within Low (0.11) suitability for this species.	**Not Present.** There are no recommendations for this species.
western mastiff bat *Eumops perotis californicus*	BLM: S CDFW: SSC WBWG: H	*E. perotis californicus* occurs in a wide variety of habitats, including chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland (Best et al. 1996; Pierson and Rainey 1998). Roosting sites occur in rocky outcrops, crevices and cliffs with 50-100% rocky slopes. Day roosts are established in crevices in rocky canyons and cliffs, trees, tunnels and buildings with a minimum 2-meter (6.5 foot) drop-off to provide a takeoff or launching area. The animals are strong, fast fliers, with a likely extensive foraging range, up to 15 miles from the nearest possible roosting site (Pierson, Rainey 1998). Foraging occurs in broad, open areas (Pierson, Rainey 1998) woodlands and forest, scrub, chaparral, grassland, riparian and agricultural areas and there is no evidence of this species being habitat specialists.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
silver-haired bat *Lasionycteris noctivagans*	CDFW: SSC IUCN: LC WBWG: M	*L. noctivagans* 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, *L. noctivagans* requires a water sources for drinking.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.
western red bat *Lasiurus blossevillii*	CDFW: SSC IUCN: LC WBWG: H	*L. blossevillii* prefer habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Roosting sites are often in trees found from sea level through mixed conifer forests. This species is often associated with riparian habitats set within coniferous forests and meadows.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to Medium (0.55) suitability for this species.	**Not Observed.** No signs of bat presence (guano, active roosts) were observed within the Study Area. Tree removal within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys are recommended prior to any tree removal. If *L. blossevillii* are observed, CDFW shall be notified.
Humboldt marten *Martes caurina humboldtensis*	SE CDFW: SSC USFS: S	*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.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.33) to High (1.0) suitability for this species.	**Not Observed.** No signs of marten presence (den sites) were observed within the Study Area. Tree removal within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys are recommended prior to any tree removal. If *M. caurina humboldtensis* are observed, CDFW shall be notified

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
little brown bat *Myotis lucifugus*	CDFW: SSC IUCN: LC WBWG: M	*M. lucifugus* is found in most of the United States and Canada, except for the south central and southeastern United States and northern Alaska and Canada. *M. lucifugus* 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.** According to CWHR Predicted Habitat Suitability, the Study Area falls within Low (0.11) suitability for this species.	**Not Present.** No recommendations for this species.
fringed myotis *Myotis thysanodes*	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	*M. thysanodes* are widespread in California, occurring in a wide variety of habitats including pinyon-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.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to High (0.77) habitat suitability for this species.	**Not Observed.** No signs of bat presence (guano, active roosts) were observed within the Study Area. Tree removal within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys are recommended prior to any tree removal. If *M. thysanodes* are observed, CDFW shall be notified.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Yuma myotis *Myotis yumanensis*	CDFW: SSC BLM: S IUCN: LC WBWG: LM	*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.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to High (0.77) habitat suitability for this species.	**Not Observed.** No signs of bat presence (guano, active roosts) were observed within the Study Area. Tree removal within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys are recommended prior to any tree removal. If *M. yumanensis* are observed, CDFW shall be notified.
fisher [West Coast DPS] *Pekania pennanti*	ST CDFW: SSC USFS: S	*P. pennanti* are primarily solitary, except during breeding season (February – April and they 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. *P. pennanti* use cavities, snags, logs and rocky areas for cover and denning and require large areas of mature, dense forest (CDFW 2020).	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.22) to High (0.88) habitat suitability for this species.	**Not Observed.** No signs of fisher presence (dens) were observed within the Study Area. Tree removal within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys are recommended prior to any tree removal. If *P. pennanti* are observed, CDFW shall be notified.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
American badger *Taxidea taxus*	CDFW: SSC IUCN: LC	*T. taxus* are small carnivores 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). *T. taxus* 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. *T. taxus* are non-migratory and are found throughout most of California, except the northern North Coast area.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.33) to High (1.00) habitat suitability for this species.	**Not Observed.** No signs of badger presence (burrows) were observed within the Study Area. Groundbreaking activities within the Study Area could have a moderate impact on this species, if present. Visual encounter surveys following CDFW survey protocols are recommended prior to any groundbreaking activities within the Study Area. If *T. taxus* are observed, CDFW shall be notified.
Mollusks				
western ridged mussel *Gonidea angulata*	CDFW: SSC	*G. angulata* inhabits cold creeks and streams from low-to-mid elevations that are seasonally and not continuously turbid. *G. angulata* 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 (*Mylopharodon conocephalus*), pit sculpin (*Cottus pitensis*), and Tule perch (*Hysterocarpus traski*).	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Area is not mapped, indicating this species is not typically found in the region.	**Not Present.** There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Reptiles				
western pond turtle *Emys marmorata*	BLM: S CDFW: SSC IUCN: VU USFS: S	*E. marmorata* 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.	**High Potential.** According to CWHR Predicted Habitat Suitability, the Study Area falls within a range of Low (0.33) to High (1.0) habitat suitability for this species. Additionally, Western pond turtles were observed basking within the pond on the property.	**Present.** As this species was observed within the Study Areas during the biological assessment it is recommended that pre-development surveys are performed using CDFW's protocol prior to any groundmoving activities within 500m of the pond.
Plants				
bent-flowered fiddleneck *Amsinckia lunaris*	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.	**Moderate Potential.** Study Area does provide suitable habitat for this species to utilize.	**Not Observed.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No recommendations for this species.
scabrid alpine tarplant *Anisocarpus scabridus*	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 to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Konocti manzanita *Arctostaphylos stanfordiana ssp. elegans*	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.** Study Area does provide suitable habitat (cismontane woodland, lower montane coniferous forest) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No volcanic soils exist within the Study Area for this species to utilize. No recommendations for this species.
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	Rank 1B.1	Chaparral, lower montane coniferous forest (openings), rocky, serpentine sites, often on slopes and ridges. *A. stanfordiana ssp. raichei* has a moderate serpentine affinity (2.6, strong indicator). Elevation ranges from 1591 to 3511 feet (485 to 1070 meters). A perennial evergreen shrub, the blooming period is from Feb-Apr.	**Unlikely.** Study Area does provide suitable habitat (lower montane coniferous forest) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.
serpentine milkweed *Asclepias solanoana*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, often grows on serpentine soils, confined to clearings and gentle slopes with southern exposure. *A. solanoana* has a strong serpentine affinity (6.0, strict endemic). Elevation ranges from 755 to 6103 feet (230 to 1860 meters). A perennial herb, the blooming period is from May-Jul.	**No Potential.** Study Area does provide suitable habitat (lower montane coniferous forest) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Brewer's milk-vetch *Astragalus breweri*	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. *A. breweri* has a moderate serpentine affinity (3.2, strong indicator). Elevation ranges from 296 to 2395 feet (90 to 730 meters). An annual herb, the blooming period is from Apr-Jun.	**Unlikely.** Study Area does provide suitable habitat (cismontane woodland, valley and foothill grassland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.
Cleveland's milk-vetch *Astragalus clevelandii*	Rank 4.3	Chaparral, cismontane woodland, riparian forest, ultramafic seeps and creeks; sandy stream banks, gravel bars moist in spring, hillside seeps on slopes. *A. clevelandii* has a strong serpentine affinity (6.1, strict endemic). Elevation ranges from 656 to 4922 feet (200 to 1500 meters). A perennial herb, the blooming period is from Jun-Sep.	**No Potential.** Study Area does provide suitable habitat (cismontane woodland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.
Snow Mountain rockcress *Boechera ultraalsa*	Rank 1B.1	Upper montane coniferous forest, rocky sites. No distinct elevation ranges. A perennial herb, the blooming period is from Jun-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
scalloped moonwort *Botrychium crenulatum*	Rank 2B.2	Bogs and fens (wetlands), 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 to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
watershield *Brasenia schreberi*	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 to utilize.	**Not Present.** No recommendations for this species.
small-flowered calycadenia *Calycadenia micrantha*	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.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
bristly sedge *Carex comosa*	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 to utilize.	**Not Present.** No recommendations for this species.
Rincon Ridge ceanothus *Ceanothus confusus*	Rank 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, known from volcanic or serpentine soils, dry shrubby slopes. *C. confusus* has a minor serpentine affinity (1.3, weak indicator/indifferent). 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 to utilize.	**Not Present.** No recommendations for this species.
Kern ceanothus *Ceanothus pinetorum*	Rank 4.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest, rocky, granitic sites. Elevation ranges from 5250 to 9006 feet (1600 to 2745 meters). A shrub, the blooming period is from May-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
Tracy's clarkia *Clarkia gracilis ssp. tracyi*	Rank 4.2	Chaparral, openings, usually on serpentine. *C. gracilis ssp. tracyi* has a strong serpentine affinity (5, broad endemic). 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 to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
serpentine collomia *Collomia diversifolia*	Rank 4.3	Chaparral, cismontane woodland, on ultramafic soils, rocky or gravelly sites. *C. diversifolia* has a strong serpentine affinity (5.6, strict endemic). 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 to utilize.	**Not Present.** No recommendations for this species.
Jepson's dodder *Cuscuta jepsonii*	Rank 1B.2	Upper montane coniferous forest, lower montane coniferous forest, broadleaved upland forest, found on host species (*Ceanothus diversifolius* and *Ceanothus prostratus*). 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 to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No recommendations for this species.
California beard-moss *Didymodon californicus*	Rank 4.2	Lower montane coniferous forest, openings, rocky streambeds. Elevation ranges from 4511 to 5397 feet (1375 to 1645 meters). A moss, there is no distinct blooming period.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No recommendations for this species.
Cascade downingia *Downingia willamettensis*	Rank 2B.2	Cismontane woodland, Yellow Pine Forest, Douglas-Fir Forest, Redwood Forest, wetland-riparian, valley and foothill grassland, vernal pools, often along lake margins, occurs in wetlands. Elevation ranges from 49 to 3642 feet (15 to 1110 meters). An annual herb, the blooming period is from Jun-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
Snow Mountain willowherb *Epilobium nivium*	Rank 1B.2	Upper montane coniferous forest, chaparral, often found in crevices of volcanic and metavolcanics 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.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No volcanic soils exist. No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Snow Mountain buckwheat *Eriogonum nervulosum*	Rank 1B.2	Chaparral, ultramafic, dry serpentine outcrops, balds and barrens. *E. nervulosum* has a serpentine affinity (6.2, strict endemic). Elevation ranges from 1460 to 6906 feet (445 to 2105 meters). A perennial herb (rhizomatous), the blooming period is from Jun-Sep.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
Greene's buckwheat *Eriogonum strictum var. greenei*	Rank 4.3	Lower montane coniferous forest, rocky, serpentine sites. *E. strictum var. greenei* has a serpentine affinity (5.9, strict endemic). Elevation ranges from 2625 to 6890 feet (800 to 2100 meters). A perennial herb, the blooming period is from Jul-Sep.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
bay buckwheat *Eriogonum umbellatum var. bahiiforme*	Rank 4.2	Cismontane woodland, lower montane coniferous forest, rocky sites, often serpentine. *E. umbellatum var. bahiiforme* has a serpentine affinity (3.5, broad endemic/strong indicator). Elevation ranges from 2297 to 7218 feet (700 to 2200 meters). A perennial herb, the blooming period is from Jul-Sep.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
bare monkeyflower *Erythranthe nudata*	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.	**Moderate Potential.** Study Area does provide suitable habitat (cismontane woodland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Siskiyou fritillaria *Fritillaria glauca*	Rank 4.2	Upper montane coniferous forest, alpine boulder and rock field, subalpine coniferous forest, often found on serpentine, talus slopes. *F. glauca* has a serpentine affinity (4.3, broad endemic/strong indicator). Elevation ranges from 5693 to 8005 feet (1735 to 2440 meters). A perennial herb, the blooming period is from Jun-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No serpentine soils exist. No recommendations for this species.
Purdy's fritillary *Fritillaria purdyi*	Rank 4.3	Chaparral, cismontane woodland, lower montane coniferous forest, usually on serpentine. *F. fritillary* has a serpentine affinity (4.5, broad endemic). Elevation ranges from 574 to 7399 feet (175 to 2255 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
Toren's grimmia *Grimmia torenii*	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.	**Unlikely.** Study Area does provide marginal habitat for this species (cismontane woodland, lower montane coniferous forest) that this species could utilize.	**Not Present.** No recommendations for this species.
amethyst stickseed *Hackelia amethystina*	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.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No recommendations for this species.
serpentine sunflower *Helianthus exilis*	Rank 4.2	Chaparral, cismontane woodland, serpentine seeps. Occurs usually in non-wetlands, sometimes wetlands. *H. exilis* has a serpentine affinity (5.7, strict endemic). Elevation ranges from 492 to 5004 feet (150 to 1525 meters). An annual herb, the blooming period is from Jun-Nov.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Mendocino tarplant *Hemizonia congesta ssp. calyculata*	Rank 4.3	Cismontane woodland, valley and foothill grassland, open woods and forests, sometimes on serpentine. *H. congesta ssp. calyculata* has a minor serpentine affinity (1.5, weak indicator). Elevation ranges from 738 to 4593 feet (225 to 1400 meters). An annual herb, the blooming period is from Jul-Nov.	**Moderate Potential.** Study Area does provide suitable habitat (cismontane woodland, valley and foothill grassland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.
glandular western flax *Hesperolinon adenophyllum*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils, generally found in serpentine chaparral. *H. adenophyllum* has a serpentine affinity (5.7, strict endemic). Elevation ranges from 1395 to 4413 feet (425 to 1345 meters). An annual herb, the blooming period is from May-Aug.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
two-carpellate western flax *Hesperolinon bicarpellatum*	Rank 1B.2	Serpentine barrens at edges of chaparral. *H. bicarpellatum* has a serpentine affinity (6.2, strict endemic). Elevation ranges from 574 to 2707 feet (175 to 825 meters). An annual herb, the blooming period is from May-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
drymaria-like western flax *Hesperolinon drymarioides*	Rank 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland, often associated with serpentine soils mostly within chaparral. *H. drymarioides* has a serpentine affinity (6.1, strict endemic). Elevation ranges from 1313 to 3609 feet (400 to 1100 meters). An annual herb, the blooming period is from May-Aug.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Bolander's horkelia *Horkelia bolanderi*	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.	**Moderate Potential.** Study Area does provide suitable habitat (lower montane coniferous forest, valley and foothill grassland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No recommendations for this species.
bristly leptosiphon *Leptosiphon acicularis*	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.	**Moderate Potential.** Study Area does provide suitable habitat (cismontane woodland, valley and foothill grassland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No recommendations for this species.
broad-lobed leptosiphon *Leptosiphon latisectus*	Rank 4.3	Broadleaved upland forest, cismontane woodland. *L. latisectus* has a minor serpentine affinity (2.0, weak indicator). Elevation ranges from 558 to 4922 feet (170 to 1500 meters). An annual herb, the blooming period is from Apr-Jun.	**Moderate Potential.** Study Area does provide suitable habitat (cismontane woodland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No serpentine soils exist within the Study Area for this species to utilize. No recommendations for this species.
Rattan's leptosiphon *Leptosiphon rattanii*	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.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Anthony Peak lupine *Lupinus antoninus*	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.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No recommendations for this species.
northern adder's-tongue *Ophioglossum pusillum*	Rank 2B.2	Marshes and swamps, meadows and seeps, wetland. Marsh edges, low pastures, grassy roadside ditches, also described as in "open swamp." A fern (rhizomatous), this species blooms in July. Elevation ranges from 3560 to 6234 feet (1085 to 1900 meters).	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** The elevation range that this species is found at exceeds the elevation range of the Study Area. No recommendations for this species.
Mayacamas popcornflower *Plagiobothrys lithocaryus*	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.	**Moderate Potential.** Study Area does provide suitable habitat (cismontane woodland, valley and foothill grassland) for this species to utilize.	**Not Present.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period for this species. No recommendations for this species.
Lake Pillsbury checkerbloom *Sidalcea hickmanii ssp. pillsburiensis*	Rank 1B.2	Chaparral, openings in chaparral on Franciscan soils. No distinct elevation range. A perennial herb, the blooming period is from Jul-Aug.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
Marin checkerbloom *Sidalcea hickmanii ssp. viridis*	Rank 1B.1	Chaparral, ultramafic, serpentine or volcanic soils, sometimes appears after burns. *S. hickmanii ssp. pillsburiensis* has a serpentine affinity (6.3, strict endemic). Elevation ranges from 3.28 to 1395 feet (1 to 425 meters). A perennial herb, the blooming period is from May-Jun.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	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.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
pubescent needle grass *Stipa lemmonii var. pubescens*	Rank 3.2	Chaparral, lower montane coniferous forest, mostly found in serpentine chaparral. At upper elevations it may be found in Ponderosa pine (*Pinus ponderosa*) forest. *S. lemmonii var. pubescens* has a strong serpentine affinity (4.8, broad endemic). Elevation ranges from 3380 to 4315 feet (1030 to 1315 meters). A perennial grass, the blooming period is from May-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
Hoffman's bristly jewelflower *Streptanthus glandulosus ssp. hoffmanii*	Rank 1B.3	Chaparral, cismontane woodland, valley and foothill grassland, moist, steep rocky banks in serpentine and non-serpentine soils. *S. glandulosus ssp. hoffmanii* has a moderate serpentine affinity (3.0, strong indicator). Elevation ranges from 197 to 2510 feet (60 to 765 meters). An annual herb, the blooming period is from Mar-Jul.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
alpine crisp-moss *Tortella alpicola*	Rank 2B.3	Cismontane woodland, moss on volcanic rock, wide ecological tolerance, shaded or exposed, wet or dry, no distinct elevation range. A moss, no distinct blooming period.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.
cylindrical trichodon *Trichodon cylindricus*	Rank 2B.2	*T. cylindricus* grows in acidic habitats, often abundant in stubble fields. Broadleaved upland forest, upper montane coniferous forest, often observed in openings on sandy, gravelly, or clay soils on roadsides, stream banks, trails of in fields. Elevation ranges from 164 to 4922 feet (50 to 1500 meters). A moss, no blooming period.	**No Potential.** Study Area does not provide suitable habitat for this species to utilize.	**Not Present.** No recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Coastal and valley freshwater marsh	N/A	Coastal and valley freshwater marsh is classified as several different alliances by Sawyer et al. (2009) including the Typha (*T. angustifolia, T. domingensis, T. latifolia*) alliance (cattail marshes), *Schoenoplectus acutus* alliance (hardstem bulrush marsh), and *Schoenoplectus californicus* alliance (California bulrush marsh). It is classified as freshwater emergent wetland as described in A Guide to the Wildlife Habitats of California (Mayer and Laudenslayer 1988). Coastal and valley freshwater marsh is characterized by erect, rooted herbaceous hydrophytes (water-adapted plants). All emergent wetlands are flooded frequently so that the roots of vegetation are saturated or submerged in water. Vegetation is generally about 6 feet tall and may vary from small clumps of vegetation to large areas. Coastal and valley freshwater marsh is a nontidal, flooded, depressional wetland type and is considered a palustrine emergent semi-permanently flooded (PEMF) wetland (Cowardin et al. 1979).	**No Potential.** This terrestrial plant community does not exist within the Study Area.	**Not Present.** No recommendations for this terrestrial community.

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	
Acer macrophyllum	bigleaf maple
Achillea millefolium	yarrow
Arbutus menziseii	Pacific madrone
Arctostaphylos manzanita	common manzanita
Avena barbata	slim oat
Briza minor	little rattlesnake grass
Brodiaea elegans	harvest brodiaea
Bromus caroli-henrici	weedy brome
Bromus hordeaceus	soft chess
Bromus secalinus	rye brome
Calochortus coeruleus	blue star tulip
Carduus pycnocephalus	Italian thistle
Castilleja affinis	Indian paintbrush
Centaurea solstitialis	yellow starthistle
Chlorogalum pomeridianum	wavyleaf soap plant
Claytonia perfoliate	miner's lettuce
Convolvulus arvensis	field bindweed
Cynosurus echinatus	dogtail grass
Daucus carota	Queen Anne’s lace
Dichelostemma capitatum	blue dicks
Dichelostemma ida-maia	firecracker flower
Eriodictyon californicum	yerba santa
Eschscholzia californica	California poppy
Festuca perennis	Italian rye grass
Fraxinus sp.	unidentified ash
Funaria hygrometrica	bonfire moss
Galium bolanderi	Bolander’s bedstraw
Geranium dissectum	wild geranium
Grindelia camporum	gumweed
Hemizonia congesta ssp. clevlandii	Cleveland’s tarweed
Hirschfeldia incana	mustard
Hordeum murinum ssp. leporinum	farmer's foxtail
Hordeum sp.	unidentified barley
Hypericum perforatum	Klamathweed
Juglans nigra	black walnut
Lysimachia arvensis	scarlet pimpernel
Lythrum hyssopifolia	hyssop lossestrife
Marrubium vulgare	white horehound
Navarretia intertexta	interwoven navarretia
Pinus ponderosa	Ponderosa pine
Pinus sabiniana	bull pine
Plantago lanceolate	ribwort
Polygala californica	milkwort
Pseudotsuga menziesii	Douglas fir
Pteridium aquilinum	bracken fern
Quercus lobata	valley oak

SCIENTIFIC NAME	COMMON NAME
Quercus douglasii	blue oak
Quercus garryana	Oregon oak
Quercus kelloggii	California black oak
Ranunculus occidentalis	western buttercup
Rosa californica	California wild rose
Rubus armeniacus	Himalayan blackberry
Rumex crispus	curly dock
Salix sp.	willow
Sambucus nigra	black elderberry
Sequoia sempervirens	Coast redwood
Sisymbrium officinale	hedge mustard
Torilis arvensis	field hedge parsley
Toxicodendron diversilobum	poison oak
Trifolium hirtum	rose clover
Triteleia laxa	Ithuriel's spear
Verbascum thapsus	wolly mullein
Verbena lasiostachys	western vervain
Veronica persica	bird's eye speedwell
Vicia sativa	spring vetch
Vicia villosa	hairy vetch
Viola ocellata	western heart's ease
Xanthium spinosum	spiny cocklebur
Wildlife	
Amphibians	
N/A	-
Avifauna	
Aphelocoma californica	California scrub-jay
Cathartes aura	turkey vulture
Charadrius vociferous	killdeer
Callipepla californica	California quail
Junco hyemalis	dark-eyed junco
Meleagris gallopavo	wild turkey
Melozone crissalis	California towhee
Zenaida macroura	mourning dove
Crustaceans	
N/A	-
Fish	
N/A	-
Insects	
N/A	-
Mammals	
Equus ferus	domestic horse

SCIENTIFIC NAME	COMMON NAME
Mollusks	
N/A	-
Reptiles	
Emys marmorata	western pond turtle

Appendix C: Representative Photographs of the Study Areas

Photo 1: Representative photograph of the pond habitat within the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii* – *Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa* – *Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance). Basking turtles (*E. marmorata*) were observed within this pond.

Date: June 3, 2019

Photo 2: Representative photograph of the pond habitat within the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii* – *Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa* – *Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance). Basking turtles (*E. marmorata*) were observed within this pond (red circle).

Date: June 3, 2019

Photo 3: Representative photograph of West Fork Middle Creek within Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii* – *Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa* – *Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance). Photo perspective looking upstream, minimal vegetation overhanging/within the watercourse.

Date: June 3, 2019

Photo 4: Representative photograph of West Fork Middle Creek within Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii* – *Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa* – *Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance). Photo perspective looking downstream, minimal vegetation overhanging/within the watercourse; however, some willow (*Salix* sp.) exists within this stretch of the watercourse.

Date: June 3, 2019

Photo 5: Representative photograph of the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa – Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance).

Date: June 3, 2019

Photo 6: Representative photograph of the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa – Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance).

Date: June 3, 2019

Photo 7: Representative photograph of the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa – Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance).

Date: June 3, 2019

Photo 8: Representative photograph of the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa – Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance).

Date: April 14, 2020

Photo 9: Representative photograph of the Study Area, comprised of a combination of cismontane woodland (*Quercus kelloggii* – MCV2 Alliance with a *Q. kelloggii – Q. lobata* / grass Association), lower montane coniferous forest (*Pinus ponderosa – Pseudotsuga menziesii* (MCV2 Alliance) and valley and foothill grassland (*Avena* spp. – *Bromus* spp. – MCV2 Alliance).

Date: April 14, 2020

Appendix D: Supporting Figures (Maps)

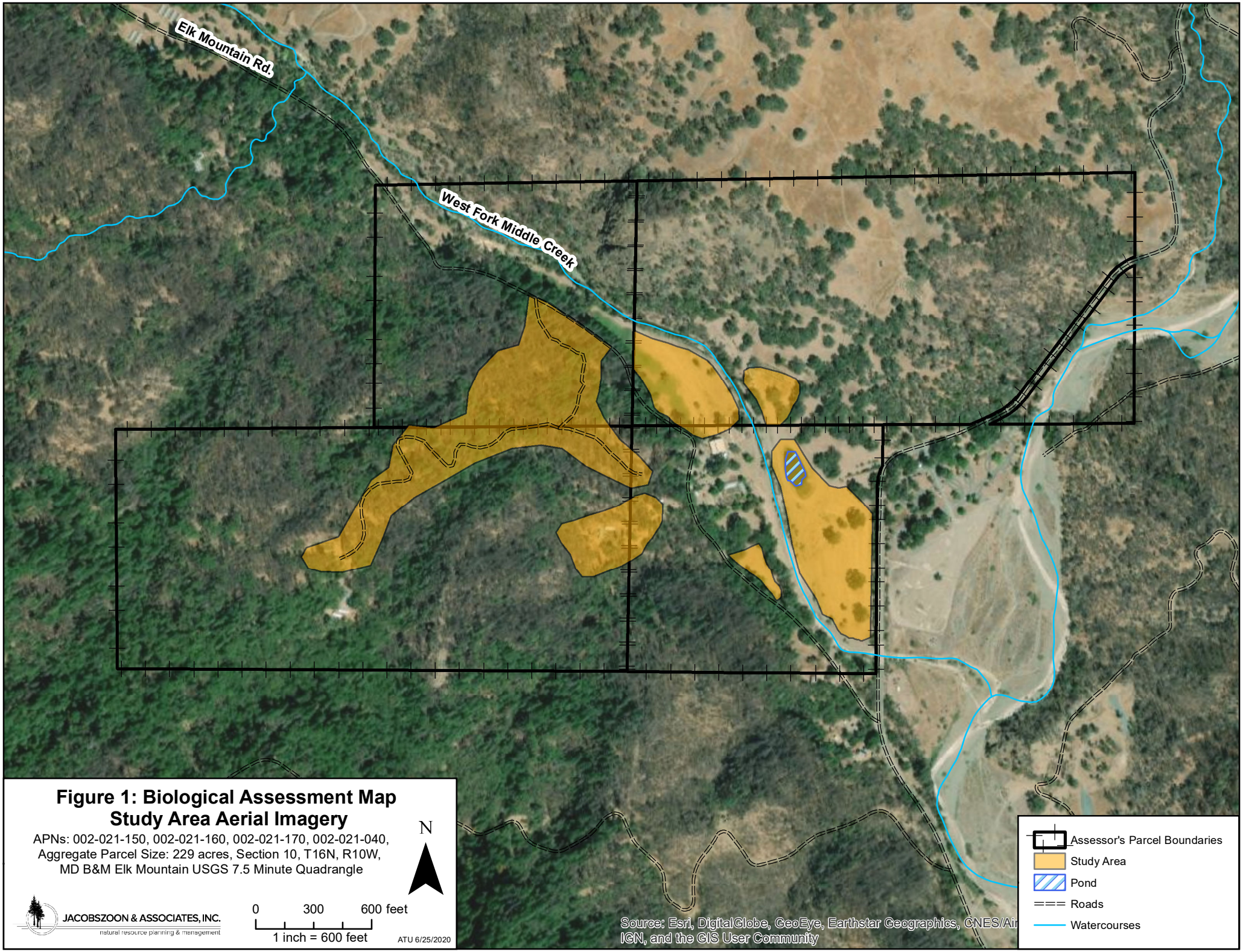

Figure 1: Biological Assessment Map
Study Area Aerial Imagery

APNs: 002-021-150, 002-021-160, 002-021-170, 002-021-040,
Aggregate Parcel Size: 229 acres, Section 10, T16N, R10W,
MD B&M Elk Mountain USGS 7.5 Minute Quadrangle

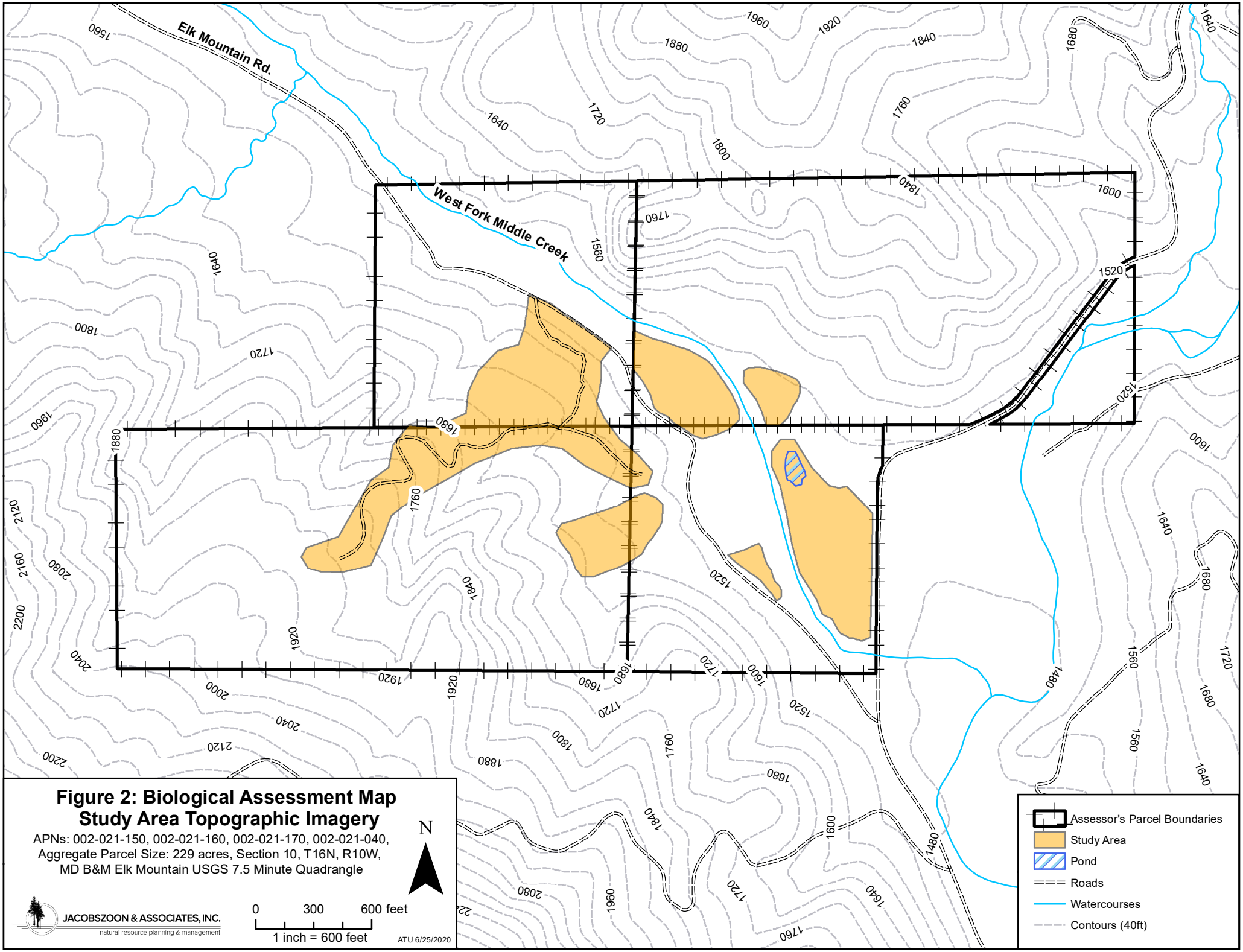

Figure 2: Biological Assessment Map
Study Area Topographic Imagery

APNs: 002-021-150, 002-021-160, 002-021-170, 002-021-040,
Aggregate Parcel Size: 229 acres, Section 10, T16N, R10W,
MD B&M Elk Mountain USGS 7.5 Minute Quadrangle

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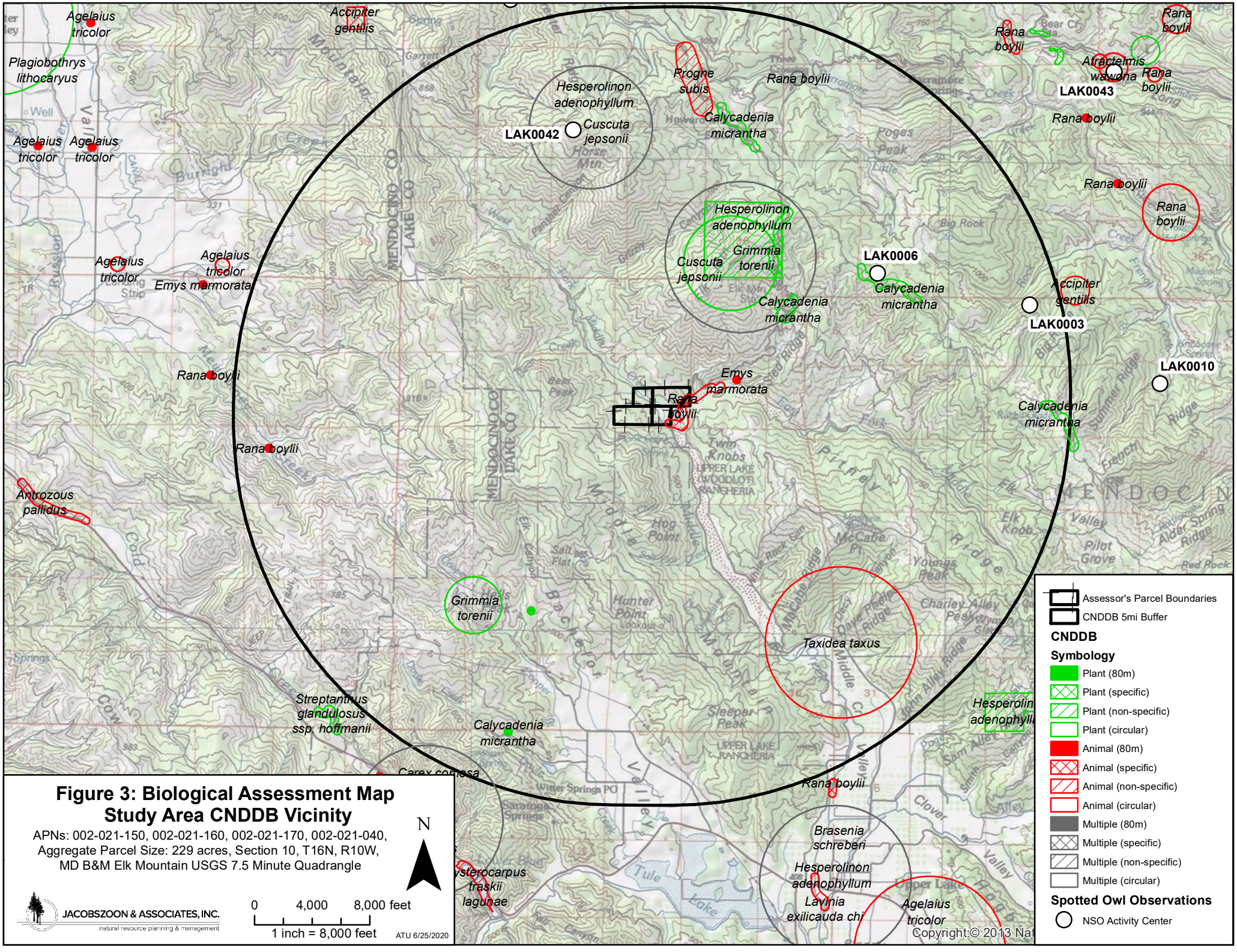

Figure 3: Biological Assessment Map
Study Area CNDDB Vicinity

APNs: 002-021-150, 002-021-160, 002-021-170, 002-021-040,
Aggregate Parcel Size: 229 acres, Section 10, T16N, R10W,
MD B&M Elk Mountain USGS 7.5 Minute Quadrangle

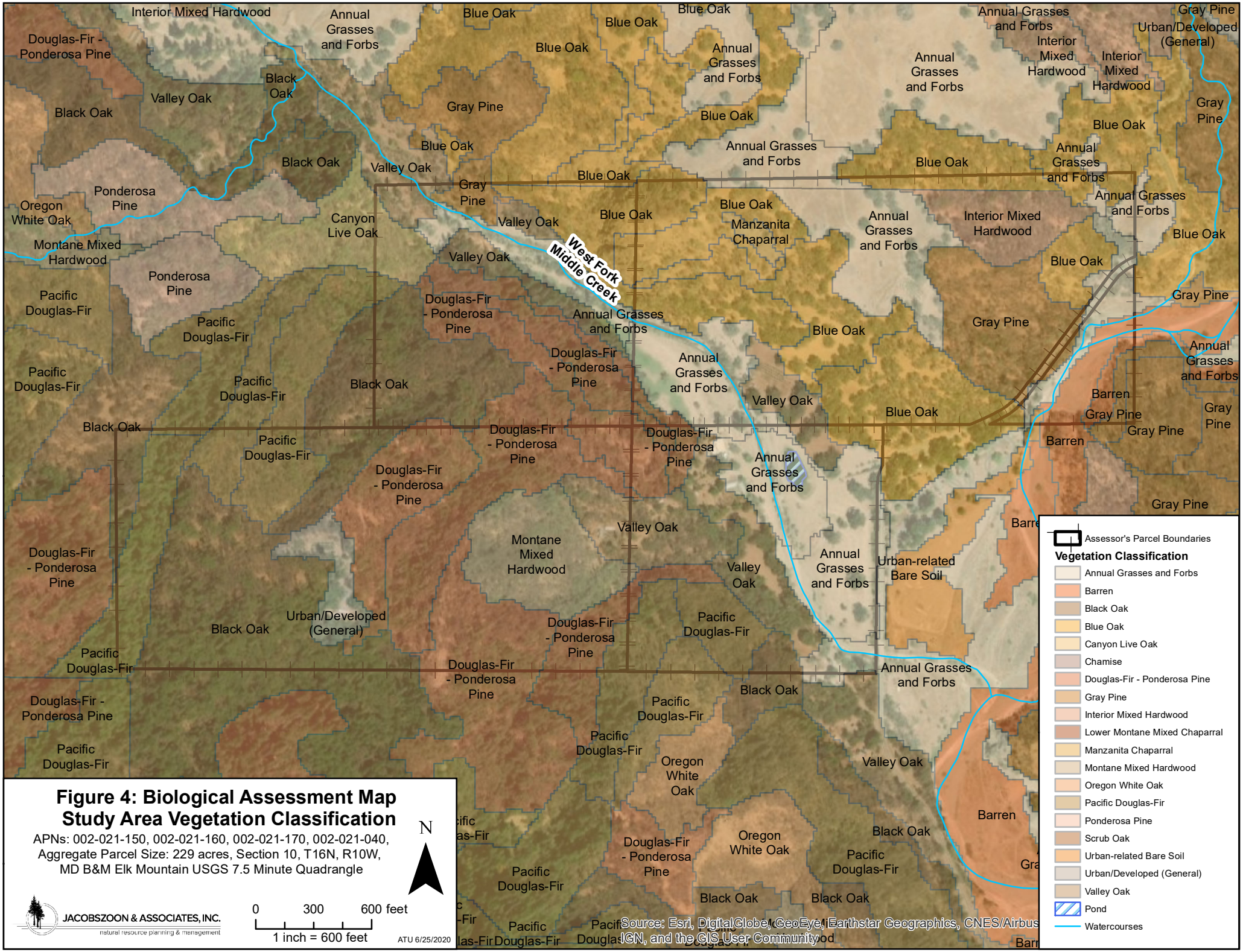

Figure 4: Biological Assessment Map
Study Area Vegetation Classification

APNs: 002-021-150, 002-021-160, 002-021-170, 002-021-040,
Aggregate Parcel Size: 229 acres, Section 10, T16N, R10W,
MD B&M Elk Mountain USGS 7.5 Minute Quadrangle

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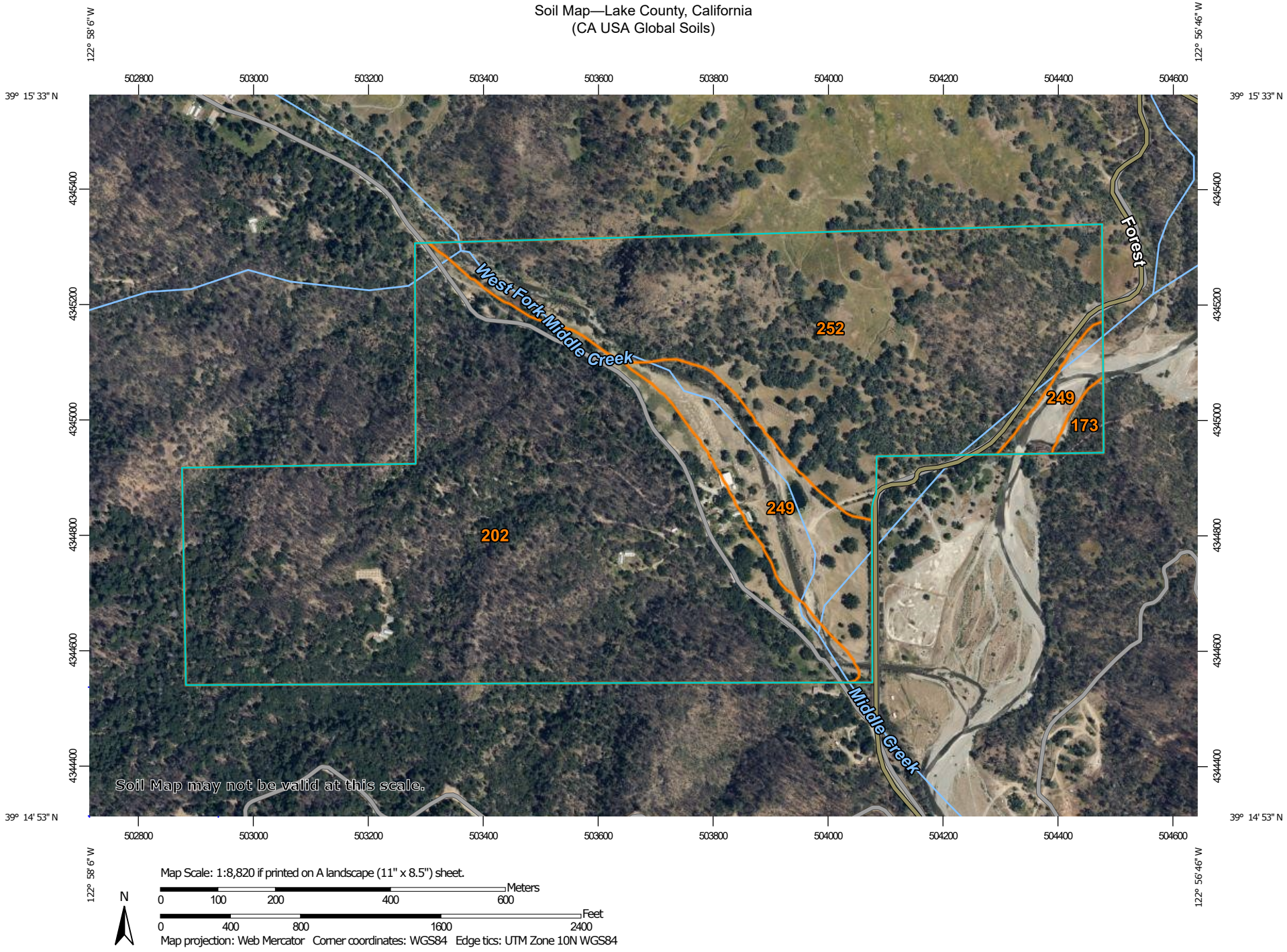
Soil Map—Lake County, California
(CA USA Global Soils)



Map Scale: 1:8,820 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, California
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2019—May 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
173	Maymen-Hopland-Mayacama association, 20 to 60 percent slopes, MLRA 15	1.8	0.8%
202	Sanhedrin-Kekawaka-Speaker complex, 30 to 50 percent slopes	127.3	55.4%
249	Xerofluvents-Riverwash complex	21.7	9.4%
252	Yorktree-Hopland-Squawrock complex, 15 to 50 percent slopes	79.0	34.4%
Totals for Area of Interest		**229.7**	**100.0%**