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# Biological Resources Assessment

## 900 Highway 1

Bodega Bay, Sonoma County, California

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## **1.0 INTRODUCTION**

WRA, Inc. conducted an assessment of biological resources at the approximately 1.8-acre property (Study Area) located at 900 Highway 1, Bodega Bay, Sonoma County, California (Figure 1). The purpose of the assessment was to gather information necessary to complete a review of biological resources for proposed development in the Study Area. This report describes the results of the assessment site visit, which assessed the Study Area for: (1) the presence of special-status species; (2) potential to support special-status species; and (3) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. The site visit to determine and describe the existing habitats present and their condition was conducted on November 17, 2017.

A biological assessment provides general information on the potential presence of sensitive species or habitats. The biological assessment is not an official protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. However, specific findings on the occurrence of any species or the presence of sensitive habitats may require that protocol surveys be conducted. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit. In addition, WRA staff have been conducting studies within portions of the Study Area and adjacent parcels at various times for more than 20 years and are generally familiar with Study Area conditions.

## **2.0 REGULATORY BACKGROUND**

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

### **2.1 Special-status Species**

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These Acts afford protection to both listed and candidate for listing species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and USFWS special-status invertebrates are considered special-status species. Although California and USFWS species of concern generally have no special legal status, they are given special consideration under environmental review, such as the California Environmental Quality Act (CEQA). In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Likewise, common California bat species are protected by California Fish and Game Code 2126. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 are also considered special-status plant species, and project impacts to these species are considered significant according to the California Environmental Quality Act (CEQA). The CNPS List 3 and 4 plants are not required to be considered in CEQA environmental review. The assessment

includes any species of local concern as indicated by the USFWS list for the quad/county, or as designated by a City or County.

### Critical Habitat

Critical habitat is a term defined and used in the Federal Endangered Species Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires Federal agencies involved in a project 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. In consultation for those species with critical habitat, 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 FESA "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.

## **2.2 Sensitive Biological Communities**

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the California Department of Fish and Wildlife Streambed Alteration Program, the California Environmental Quality Act), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas or General Plan Special Land Use areas).

### Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (1987) and Western Mountains, Valleys, and Coastal Region Supplement (2010), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water line (OHW). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

### Waters of the State

"Waters of the State" are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The RWQCB protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling,



and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

### California Coastal Act Wetlands

The California Coastal Act defines wetlands as:

"Wetland" means land within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

In practice, the California Coastal Commission (CCC) has used the definition of wetlands adopted by the Department of Fish and Game. The Department's definition is the same as that used by the US Fish and Wildlife Service and requires the presence of wetland hydrology and one of three other attributes: wetland vegetation, undrained wetland (hydric) soils, or in the case of non-soils, saturated and covered with water. The CCC's definition, therefore, includes many non-vegetated areas such as mudflats, playas, and shallow water areas.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

In the CCC's discussion of technical criteria for identifying and mapping wetlands (Appendix D of the Statewide Interpretive Guideline for Wetlands and Other Wet Environmentally Sensitive Habitat Areas), it states that:

"...the single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water, and this is the feature used to describe wetlands in the Coastal Act. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil, and therefore only plants adapted to these wet conditions (hydrophytes) could thrive in these wet (hydric) soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria. In some cases, proper identification of wetlands will require the skills of a qualified professional."

The Department of Fish and Wildlife does not have a manual for the delineation of wetlands and relies instead on the USFWS wetland system for identifying wetlands contained in Cowardin et.

al. (1979). This study took into consideration any areas that might qualify as wetlands using the USFWS definition based on observations of wetland hydrology and any one of the other criteria used by the USFWS.

### Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the California Department of Fish and Wildlife under Sections 1600 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream” is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW (CDFW, formerly CDFG).

### Other Sensitive Plant Communities

Sensitive plant communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife (CDFW). CDFW ranks sensitive communities as ‘threatened’ or ‘very threatened’ and keeps records of their occurrences in its Natural Diversity Database. Sensitive plant communities are also identified by CDFW on their *List of California Natural Communities Recognized by the CNDDDB*. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

## **3.0 METHODS**

On November 17, 2017, the Study Area was visited to determine: (1) plant communities present within the Study Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats were present. Prior to the site visit, publically available data was reviewed, such as Sonoma County soil survey, CNDDDB records, and aerial photographs, to determine the potential habitats present, and if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Study Area.

### **3.1 Biological Communities and Soils**

Biological communities present in the Study Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural*

*Communities of California* (Holland 1986). However, in some cases it is 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.

### *3.1.1 Non-sensitive Biological Communities*

Non-sensitive biological communities are those communities that do not receive consideration 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 identified or described in Section 4.1.1 below.

### *3.1.2 Sensitive Biological Communities*

Sensitive biological communities are defined as those communities that are given special protection under applicable federal, state, and local laws, regulations and ordinances and impacts to them must be considered under environmental review, such as CEQA. Applicable laws and ordinances are discussed above in Section 2.0.

## **3.2 Special-status Species**

### *3.2.1 Literature Review*

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species included the coastal areas of Sonoma County. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- California Natural Diversity Database records (CNDDDB) (CDFW 2017)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994)

### *3.2.2 Site Assessment*

A site visit was conducted to search for suitable habitats within the Study Area for those species identified as occurring within the vicinity. Potential for special-status-species to occur in the Study Area was then evaluated according to the following criteria:

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

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

(3) 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 site is unsuitable. The species has a moderate probability of being found on the site.

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

(5) Present. Species is observed on the site or has been recorded (i.e. CNDDDB, other reports) on the site recently.

This assessment is intended to identify suitable habitat for special-status species known to occur in the vicinity in order to determine their potential to occur within the Study Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special-status species was observed during the site visit, its presence would be recorded and discussed. Appendix A presents the evaluation of potential for occurrence of special-status plant and wildlife species known to occur in the vicinity of the Study Area with their habitat requirements, occurrence classification, and basis for occurrence classification. Recommendations for further surveys are made in Section 5.0 below for species with a moderate or high potential to occur in the Study Area.

## **4.0 RESULTS**

The Study Area is an approximately 1.8-acres consisting of approximately 1.5 acres of vacant land that is the main parcel and approximately 0.3-acres of access easement; it is located east of State Route 1 in Bodega Bay, Sonoma County, California (Figure 1). The street address is 900 Highway 1 (APN 100-100-031). The Study Area slopes from east to west toward Highway 1 and the Bodega Bay, with an elevation range from approximately 30 feet above sea level at the lowest point in the western corner to approximately 80 feet in elevation at the eastern boundary. Representative photographs are provided in Appendix B.

The Study Area parcel is located west of, and is separate from, the Harbor View subdivision that is being constructed in phases. Access for the Study Area parcel will be by an easement that connects to Harbor View Way even though the Study Area address is listed as 900 Highway 1.

No portion of the Study Area is within designated critical habitat for any species.

### **4.1 Biological Communities and Soils**

Three biological communities were present in the Study Area: non-native annual grassland and northern coastal scrub, which are at the higher elevations of the property upslope of Highway 1 and Bodega Bay, and seasonal wetland, which is in the lower elevation near Highway 1 at the western corner (Figure 2). Coyote brush (*Baccharis pilularis*) shrubs were present but infrequent in grassland areas, frequent in northern coastal scrub, and encroaching into seasonal wetland. No trees were present within the Study Area but were present in adjacent parcels to the southeast. Two soil types were identified within the Study Area, Terrace escarpments along the far western border and Highway 1 and Rohnerville loam, 0 to 9 percent slopes at higher elevations away from Highway 1. Terrace escarpments are described as rocky areas that separate lower areas along the ocean and coastal terraces. Soils consist of soft coastal

sandstone, hard shale, or fine-grained sandstone. Rohnerville soils are moderately well drained loams with sandy clay subsoil on marine and bench terraces. These soils formed in material weathered from soft sandstone.

#### 4.1.1 *Non-sensitive biological communities*

Non-native Annual Grassland. Non-native annual grassland is common in many parts of California, including along the coast. Dominant plants typically include introduced grasses, such as brome (*Bromus* spp.), wildoat (*Avena* spp.), and fescue (*Festuca* spp.), and forbs, such as filaree (*Erodium* spp.), plantain (*Plantago* spp.), and others. California native plant species, such as purple needle grass (*Stipa pulchra*), California brome (*Bromus carinatus*), blue-eyed grass (*Sisyrinchium bellum*), and California poppy (*Eschscholzia californica*), can be present in this habitat type, but are often present with low frequency or absent altogether.

The vegetation on the Study Area was classified as grassland consisting of native and non-native grasses and forbs, such as sweet vernal grass (*Anthoxanthum ordatum*), ripgut brome (*Bromus diandrus*), wild oat (*Avena barbata*), yarrow (*Achillea millefolium*), lupine (*Lupinus* sp.), and blue-eyed grass (*Sisyrinchium bellum*). Small patches of Baltic rush (*Juncus balticus*) and spreading rush (*Juncus patens*) were present in several locations. Undeveloped areas adjacent to the Study Area parcel consisted of similar non-native annual grassland habitat to the east and south or wetlands to the north. The grassland area was and has been maintained by regular mowing which is likely to decrease probability for wild fire.

#### Northern Coastal Scrub

Northern coastal scrub is a habitat composed predominantly of woody stemmed shrubs closer to the ocean coast that are described as softer and less aromatic than more inland scrub habitats, and have understories composed of herbaceous broad-leafed plants and grasses likely due to the cooler and more moist climate than inland climates. Prevalent species in the habitat is coyote brush (*Baccharis* sp.), both the tall and prostrate forms, as well as coffeeberry (*Frangula californica*), blue blossom ceanothus (*Ceanothus thyrsiflorus*), blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*). Herbaceous understory plants or plants found in open areas between shrub cover may include bracken fern (*Pteridium aquilinum* var. *pubescens*), sword fern (*Polystichum munitum*), cow parsnip (*Heracleum lanatum*), and grasses, such as those listed above.

Northern coastal scrub is present in the Study Area in the southwestern portion where the tall form of coyote brush is the dominant plant.

#### 4.1.2 *Sensitive Biological Communities*

##### Seasonal Wetland

The site had one area that would be considered a sensitive biological community, seasonal wetland, which was present in the western corner and lowest elevation within the Study Area. This plant community was at the fringe of slope wetland on the adjacent property to the north that is supported by ground water seepage. Being on the outer fringe of the adjacent seep wetland, the seasonal wetland is ground water supported with no inundation or ponding on the surface. Poison hemlock (*Conium maculatum*) and California blackberry (*Rubus ursinus*),

producing a tall, dense canopy, over shadowed the ground and precluded other plant species from colonizing or growing in the seasonal wetland community. The presence of coyote brush encroachment indicated the wetland had a dryer hydrology regime.

## 4.2 Special-status Species

### 4.2.1 Plants

Based upon a review of the resources and databases given in Section 2.3.1, 89 special-status plant species have been documented in the general vicinity of the Study Area. Figure 3 shows reported occurrences of special-status plants in the vicinity of the Study Area and Appendix A summarizes the potential for occurrence for these species. Of these plants, four species were determined to have a moderate potential to be present in the Study Area. The remaining 85 species were determined to have no potential to be present or unlikely to be present for various reasons, such as their typical habitat was not present (e.g., no serpentine, no tidal habitat), the elevation range of the site was not appropriate, far distance from known occurrences, and/or none of the plants were observed during surveys of the site during site visits. A survey for plants with moderate rating is recommended during their respective blooming periods to determine presence or absence while no further action or surveys are recommended for plants determined to have no potential for presence or unlikely to be present.

### 4.2.2 Wildlife

Forty-six special-status species of wildlife have been recorded in the vicinity of the Study Area or are known to occur in similar habitats in coastal Sonoma County. Figure 4 shows reported occurrences of special-status wildlife in the vicinity of the Study Area and Appendix A summarizes the potential for occurrence for these species. No special-status species were observed in the Study Area during the site assessment. One special-status wildlife species, Bryant's savannah sparrow, was determined to have a moderate potential for presence and is described in more detail below. Also included with more detail below are two species often considered of local importance, California red-legged frog and Myrtle's silverspot butterfly, even though they were determined to be unlikely to be present. The remaining 43 wildlife species that were determined to have no potential to be present or unlikely to be present due to unsuitable habitat conditions are summarized in Appendix A.

**Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), State Species of Special Concern. Moderate Potential.** This sparrow occupies low tidally influenced habitats, adjacent ruderal areas, moist grasslands within and just above the fog belt, and, infrequently, drier grasslands. They place their open-cup nests in dense cover on the ground in grass clumps or under matted grasses or weeds, or raise them up to 10 cm on supporting grass or pickleweed (Johnston 1968). Savannah Sparrows eat primarily animal matter during the breeding season and vegetable matter during winter, the annual diet averaging close to 50% of each (Wheelwright and Rising 1993). While no occurrences of Bryant's sparrow have been reported within 5 miles of the Study Area, the tidal wetland habitat and grassland areas within the fog belt around Bodega Bay seem to provide suitable habitat.

The following species were determined to be not present or unlikely to be present within the Study Area, however are described here for completeness.

**California Red-legged Frog (*Rana draytonii*), Federal Threatened Species, CDFW Species of Special Concern.** The California Red-legged Frog (CRLF) is dependent on suitable

aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, CRLF disperse away from their estivation sites to seek suitable breeding habitat or migrate between aquatic habitats. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. CRLF estivate (period of inactivity) during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds. CRLF have been documented in Salt Creek, approximately 1.6 miles north of the Study Area and in drainages to the southeast approximately 4 miles (Figure 4). While CRLF may migrate between areas of known occurrences, various areas of development, distances, relative isolation, and lack of suitable habitat for CRLF on the Study Area make it unlikely for CRLF to be present.

**Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*), Federal Endangered Species.**

Historic records indicate this species was distributed along the coast from the Russian River to San Mateo County (Launer, et al. 1992; CDFG 2006). Myrtle's silverspot is associated with low elevation dune and grassland areas immediately inland from the coast. This habitat is well within the summer fog belt, a physical setting that ensures comparatively buffered environmental conditions. This butterfly also is found in grasslands and small valleys located amidst rolling hills that are protected from the persistent wind, up to 5 kilometers from the coast, and up to 250 meters in elevation (Launer, et al. 1992). *Viola adunca* is the larval food plant on which adults lay eggs. Although this plant is required for successful rearing, the adults may wander into other areas in search of nectar. Occurrence of this butterfly nearby the Study Area to the northwest and presence of grassland habitat initially suggested a moderate to high potential for presence. However, because the Study Area was found to be regularly maintained by mowing, it is unlikely that the larval host plant is present. Therefore, this butterfly species may occasionally fly through the Study Area from other suitable habitats, but was ultimately determined unlikely to be present regarding breeding habitat.

#### **4.2.3 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act of 1918 prohibits impacts to migratory birds which includes most common bird species as well as most special-status bird species. Protection includes active nests with eggs or young during the bird breeding season, and extends until young have fledged or the nest otherwise becomes inactive. The bird breeding season inclusive of all protected bird species begins February 1 and ends August 30. If construction or other activities that have the potential to adversely impact active nests is initiated during the breeding bird season, a survey should be conducted to make sure that no active nests are present. Wildlife biologists typically survey project areas within approximately two weeks prior to start of construction to determine if active nests are present. If active nests are present, buffer zones should be established around the nests until young have fledged. After young left the nest, then construction within the buffer zone can be completed. No surveys are needed between September 1 and January 31 (outside of breeding bird season).

#### **4.2.4 Wildlife Corridor**

Wildlife corridors are important to many types of wildlife in order to move between habitats. If recognized movement corridors are blocked by development, adverse impacts to wildlife populations could result. In this case, terrestrial wildlife may access the Study Area from the east, however being immediately adjacent to Highway 1 and Bodega Bay to the west, these features act as barriers to most wildlife as well as create a dead end for accessing areas to the

west, such as Bodega Head. The main corridor for wildlife through the area, which is Johnson Gulch, lies to the north which provides large and animals, such as deer and other mammals, and aquatic species a movement corridor from hilly areas north and east into coastal areas to the west. Moreover, continuation of the Harbor View subdivision will limit access to the Study Area. Therefore, the Study Area is not considered a wildlife movement corridor and development of it will not result in an adverse impact.

## **5.0 SUMMARY AND RECOMMENDATIONS**

No sensitive plant community was identified within the Study Area. No special-status plant species were determined to have a Moderate or High probability rating. Three special-status wildlife species were determined to have a Moderate potential for occasional presence of either foraging on or migrating across the site, and no wildlife were determined to have High potential for presence. The following sections present recommendations for measures to avoid or reduce impacts to these species.

### **5.1 Biological Communities**

One biological community considered to be sensitive, seasonal wetland, was determined to be present. However, this community was located in the far western portion of the Study Area adjacent to Highway 1. Avoidance of this habitat by development would result in no impacts and no mitigation would be required.

### **5.2 Special-Status Plant Species**

Many plants on the list of special-status plants potentially present were determined to have no potential for presence or were unlikely to be present for various reasons, such as typical habitat was not present (e.g., no wetlands, no serpentine, no tidal habitat, no riparian habitat), the elevation range of the site was not appropriate, plants were not observed during the site assessment despite having a persistent growth form, vegetation on site was very dense, tall, and over shadowing, or the grassland area of the site is regularly disturbed by mowing. Four special-status plant species were determined to have a Moderate probability of presence within the Study Area, and surveys during their blooming periods are recommended to determine presence or absence. If recommended surveys conducted during the blooming periods of these plants determine they are not present, then no impacts will result to special-status plants from development of within the Study Area.

### **5.3 Special-Status Wildlife Species**

Most of the wildlife species found in the review of background literature were determined to have no potential for presence or were unlikely to be present for reasons that include suitable habitats not present in the Study Area, no known occurrences within in reasonable distance, or presumed extinction. One special-status wildlife species, Bryant's savannah sparrow, was determined to have a Moderate potential to occur in the Study Area, which could include nesting. The following recommendations will reduce the potential for adverse impacts to Bryant's savannah sparrow, and migratory birds in general, to less than significant:

1. If construction work, including vegetation removal, is to be initiated between February 1 and August 31, a wildlife biologist should conduct a survey of the site within 14 days of start of work



to determine the potential presence of active nests of migratory birds, including Bryant's savannah sparrow. If no active nests are found during the survey, construction may begin and continue until completed and no impacts to migratory birds will result. If any active nests are found, the wildlife biologist will determine the appropriate action needed for protection of species that will result in no impacts to birds based on the following:

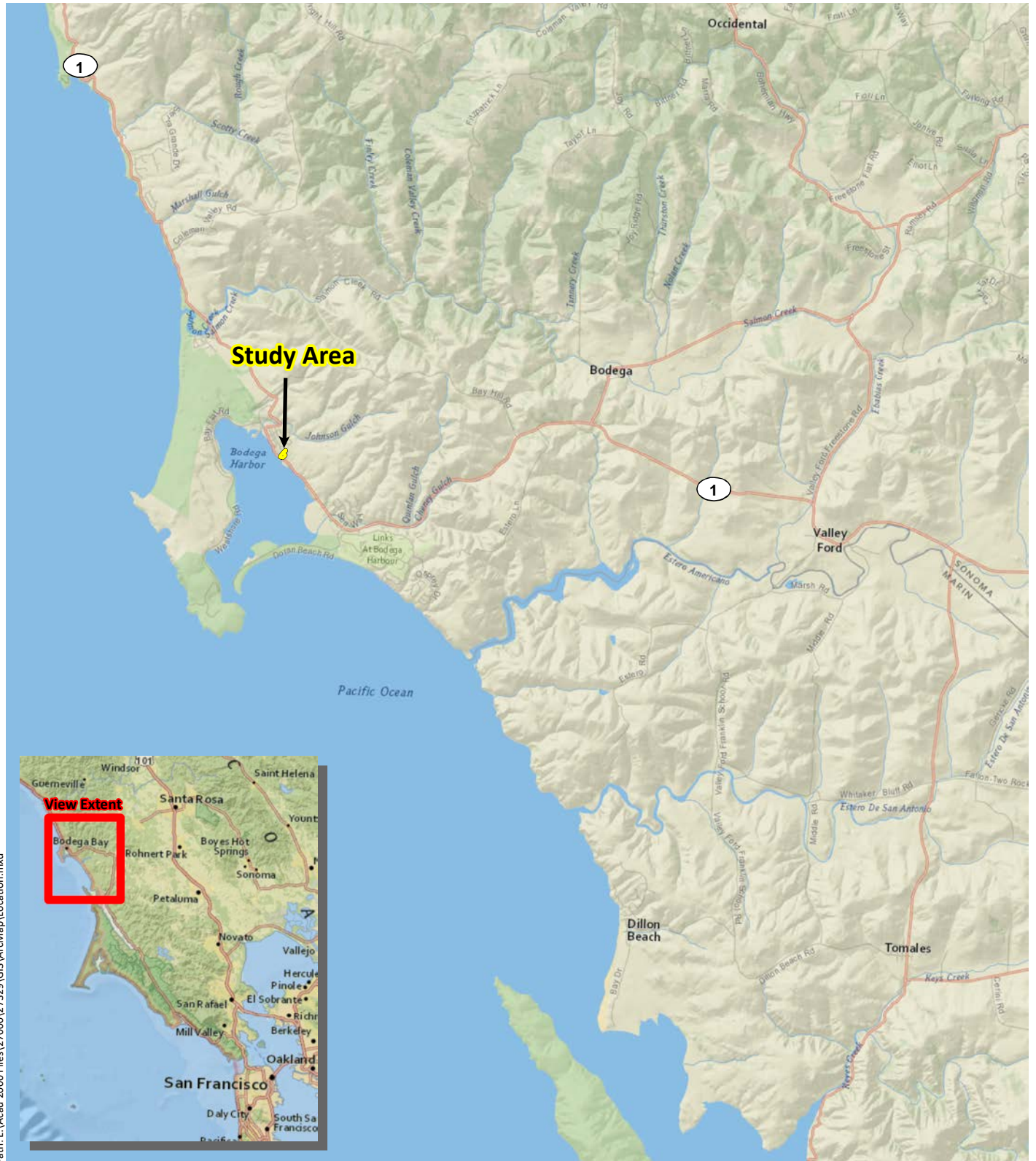
- a. Bryant's savannah sparrow and any migratory birds - if active nests are found, the wildlife biologist will determine the appropriate no-work buffer zone needed to protect the nest from adverse impacts based on the type of bird. Construction shall not occur within the no-work buffer zone until the nest is no longer active, however construction can continue outside of the no-work buffer zone while the nest is active. Once any nest becomes inactive, either because the young fledge or the predation of the nest, work may be conducted to completion and no adverse impacts to birds will result.

## **5.4 Water Quality**

Soil disturbance during construction can result in sediment carried in runoff from storm events to drainages which adversely affects water quality. Best management practices (BMPs) typically implemented for construction sites should be implemented in order to control sediment runoff. BMPs can include straw wattles, hay bales, silt fences, vegetated buffer strips, and other elements. In particular, the drain inlet in the grassland area should be protected with hay bales or other appropriate elements.

## **6.0 REFERENCES**

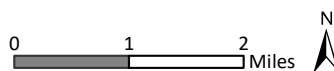
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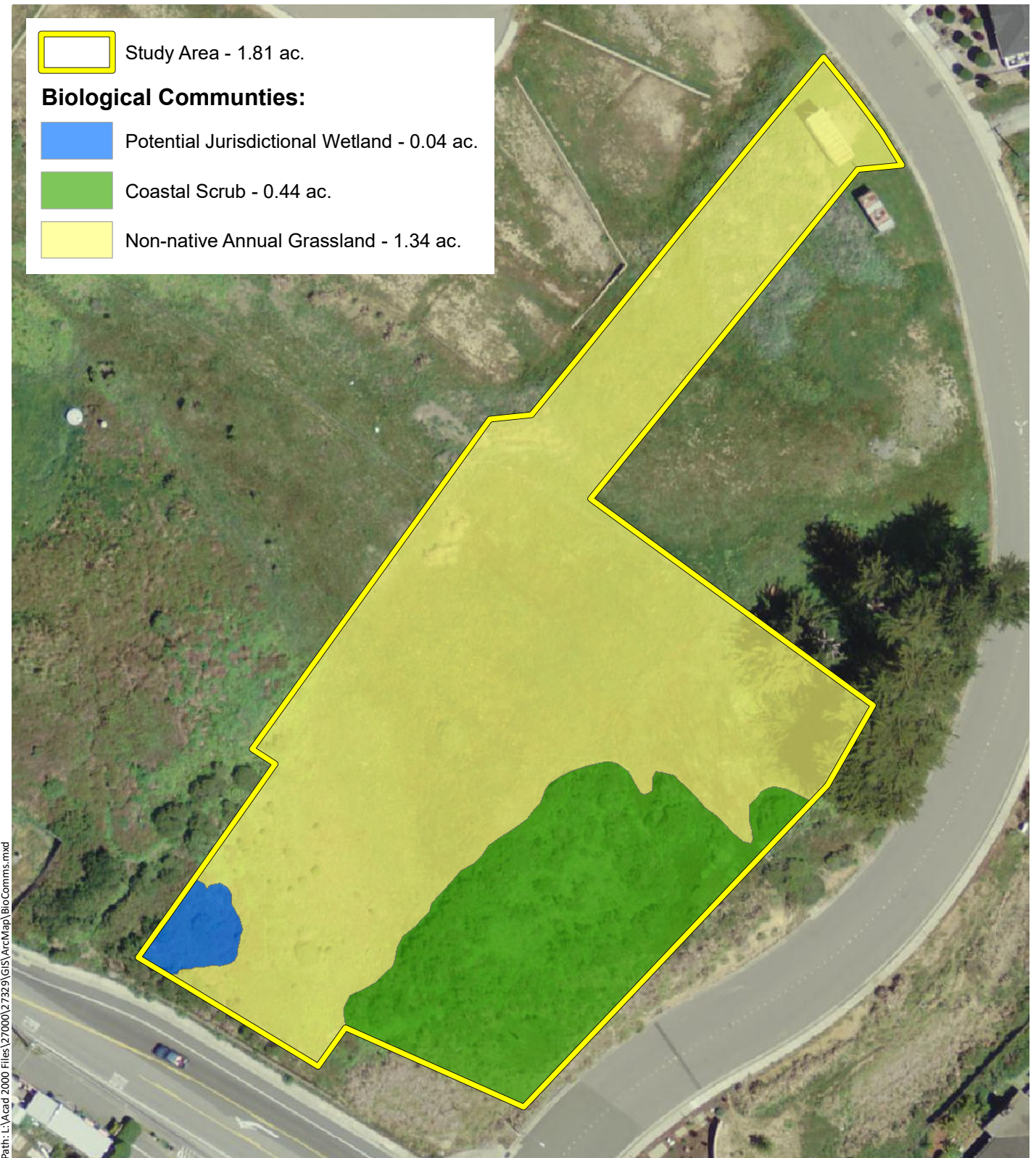
Sources: National Geographic, WRA | Prepared By: mrochelle, 11/17/2017

**Figure 1. Study Area Location**

901 Highway 1 Bodega Bay BRA  
Bodega Bay, California



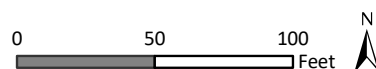


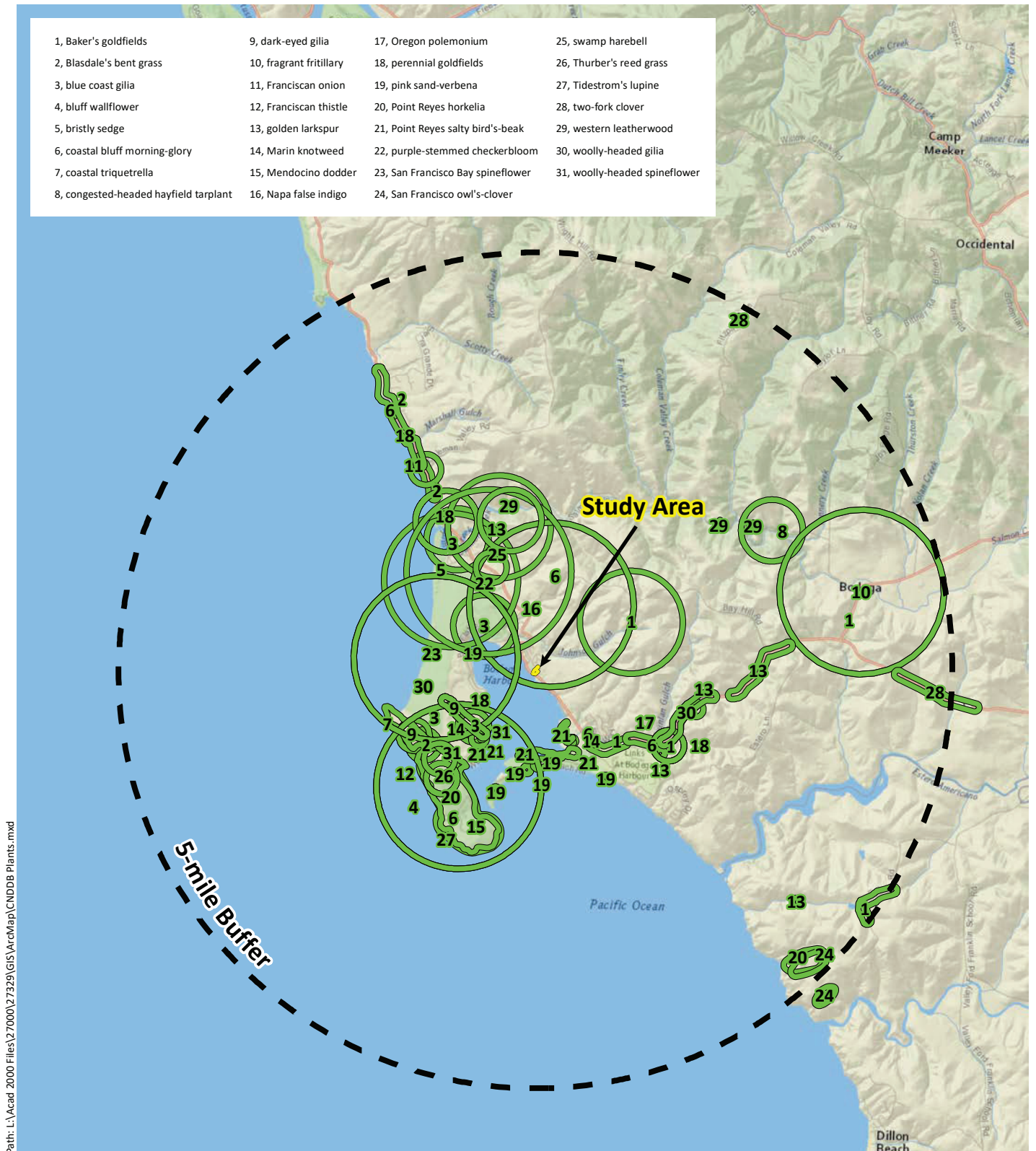


Sources: Sonoma Veg 2011 Aerial, WRA | Prepared By: smortensen, 12/19/2017

**Figure 2. Biological Communities**

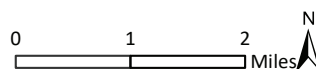
901 Highway 1 Bodega Bay BRA  
Bodega Bay, California



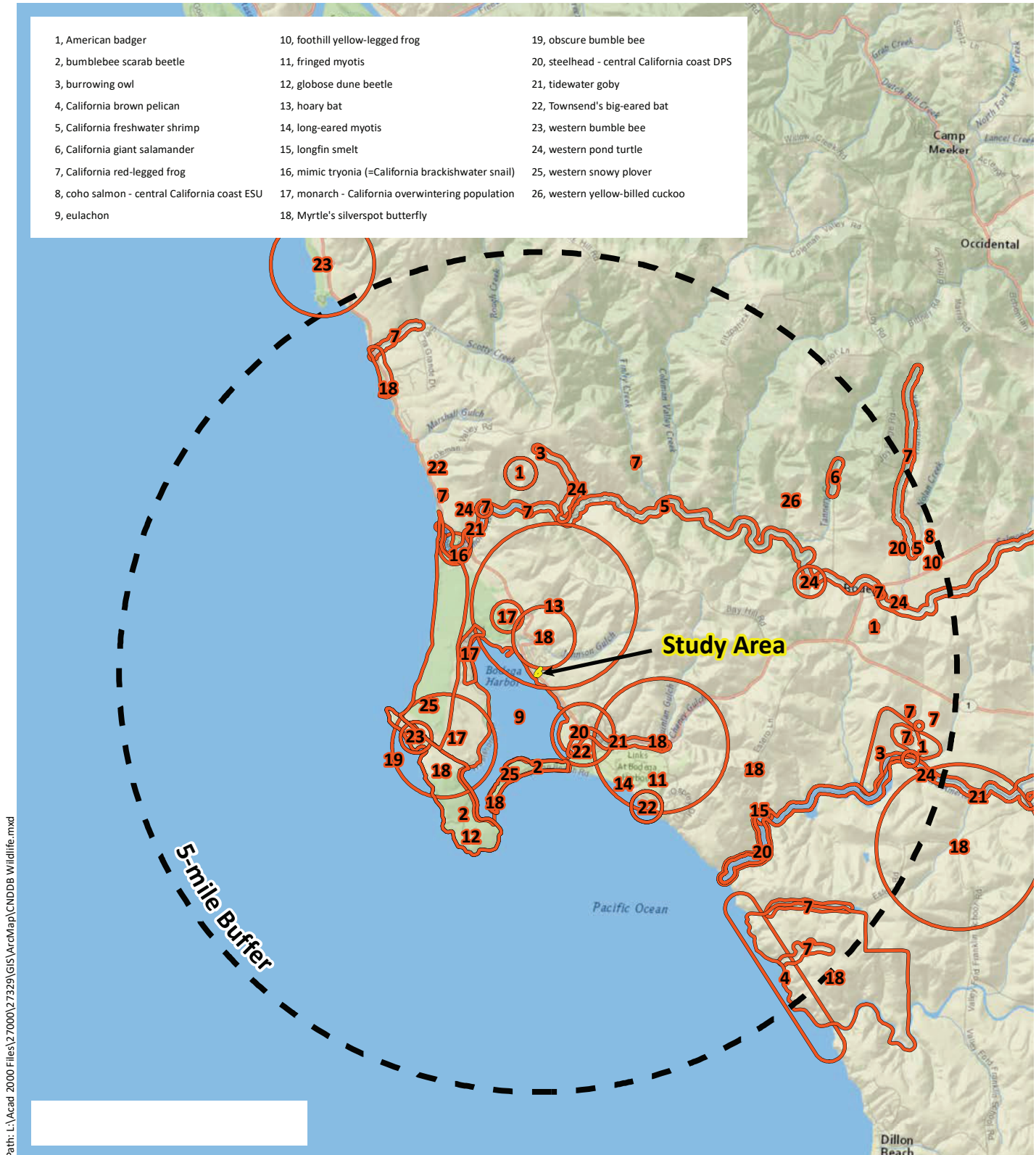


**Figure 1 Special-Status Plant Species Documented within 5-miles of the Study Area**

901 Highway 1 Bodega Bay BRA  
Bodega Bay, California

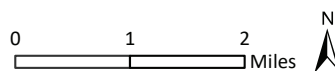






**Figure Special-Status Wildlife Species Documented within 5-miles of the Study Area**

901 Highway 1 Bodega Bay BRA  
Bodega Bay, California



## Appendix A

### Potential for Special-status Plant and Wildlife Species to Occur in the Study Area

Appendix A. Potential for Special-status Species to Occur in the Study Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CDFW 2017), U.S. Fish and Wildlife Service (USFWS) Species Lists (2017), and California Native Plant Society (CNPS) Electronic Inventory (CNPS 2017) searches of the Valley Ford, Point Reyes NE, Tomales, Bodega Head, Duncans Mills, Two Rock, Sebastopol, and Camp Meeker USGS 7.5' quadrangles.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Abronia umbellata</i> var. <i>breviflora</i> pink sand-verbena	FSC; Rank 1B	Coastal dunes, coastal strand; located on foredunes and interdunes with sparse cover. Elevation range: 0 – 35 feet. Blooms: June – October. Counties: DNT, HUM, MEN, MRN, SON.	<b>No Potential.</b> Lack of sandy soil makes habitat unsuitable for the species.	No further actions are recommended for this species.
<i>Agrostis blasdalei</i> Blasdale's bentgrass	FSC; Rank 1B	Coastal dunes, coastal bluff scrub, coastal prairie; on sandy or gravelly soil near exposed rock; often in nutrient-poor soil. Elevation range: 15 – 490 feet. Blooms: May – July. Counties: MEN, MRN, SCR, SMT, SON.	<b>Unlikely.</b> Few of the habitat components meeting the species requirements are present, including sandy or gravelly soil. The species is not likely to be found on the site.	No further actions are recommended for this species.
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	Rank 1B	Cismontane woodland, valley and foothill grassland; on clay substrate, often derived from serpentine. Elevation range 170 – 985 feet. Blooms: May – June. Counties: MEN, SCL, SMT, SON.	<b>Unlikely.</b> Few of the habitat components meeting the species requirements are present, including lack of serpentine soil and elevation range. The species is not likely to be found on the site.	No further actions are recommended for this species.
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	FE; Rank 1B	Freshwater marshes and swamps, riparian scrub; closely associated with other wetland species. Elevation range: 15 – 1200 feet. Blooms: May – July. Counties: MRN, SON.	<b>Unlikely.</b> Seasonal wetland is likely not wet enough for this species. No occurrences known within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	Rank 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July. Counties: LAK, MRN, NAP, SON.	<b>No Potential.</b> Habitat on the site is unsuitable for the species requirements, including elevation range. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	Rank 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Gravelly slopes, often in serpentine. Elevation range: 10 – 1625 feet. Blooms: March – June. Counties: ALA, CCA, COL, LAK, MRN, NAP, SBT, SCL, SCR, SMT, SON, YOL.	<b>Unlikely.</b> Habitat on the site is unsuitable for the species requirements, including no gravelly slopes or serpentine. No occurrences known within 5 miles. The species is not likely to be found on the site.	No further actions are recommended for this species.
<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i> Baker's manzanita	FSC; SR; Rank 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest; located on serpentine substrate. Elevation range: 240 – 975 feet. Blooms: February – April. Counties: SON.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for the species requirements, including no serpentine soil. Not within elevation range.	No further actions are recommended for this species.
<i>Arctostaphylos densiflora</i> Vine Hill manzanita	FSC; SE; Rank 1B	Chaparral; on acidic marine sands, typically the Goldridge sandy loam series and Sebastopol sandy loam series derived from sandstone. Elevation range: 50 – 100 feet. Blooms: February – April. Counties: SON.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for the species requirements. Typically not found near the coast. No manzanita shrubs observed during site visit.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS &
<i>Arctostaphylos stanfordiana</i> <i>ssp. decumbens</i> Rincon manzanita	Rank 1B	Chaparral, cismontane woodland; highly restricted to red rhyolitic soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for the species requirements. Not within elevation range. No manzanita shrubs observed during site visit.	No further actions are recommended for this species.
<i>Arctostaphylos virgata</i> Marin manzanita	Rank 1B	Broadleaf upland forest, closed-cone coniferous forest, chaparral, North Coast coniferous forest; on sandstone and granitic substrates. Elevation range: 195 – 2275 feet. Blooms: January – March.	<b>No Potential.</b> Habitat is unsuitable for the species requirements. Not within elevation range. No manzanita shrubs observed during site visit.	No further actions are recommended for this species.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE, SE, Rank 1B	Vernal pools, vernal swales, and mesic areas in valley grassland; highly restricted to the Santa Rosa Plain and Valley of the Moon. Elevation range: 35 – 360 feet. Blooms: March – April.	<b>No Potential.</b> Habitat on the site is clearly unsuitable for the species requirements, no vernal pools. Restricted to Santa Rosa Plain.	No further actions are recommended for this species.
<i>Blennosperma nanum</i> var. <i>robustum</i> Point Reyes blennosperma	SR, Rank 1B	Coastal prairie, coastal scrub; located on open coastal hills underlain by sandy substrate. Elevation range: 30 – 475 feet. Blooms: February – April.	<b>Unlikely.</b> Habitat is not suitable with no sandy soil and no occurrences within 5 miles.	No further actions are recommended.
<i>Calamagrostis crassiglumis</i> Thurber's reed grass	Rank 2B	Mesic areas within coastal scrub, freshwater marshes and swamps; typically in marshy swales surrounded by scrub or grassland. Elevation range: 10 – 45 feet. Blooms: May – July.	<b>Unlikely.</b> Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory	Rank 1B	Coastal dunes, coastal scrub. Elevation range: 10 – 105 feet. Blooms: May – September.	<b>Moderate Potential.</b> Habitat is generally unsuitable for the species requirements, lacking coastal dunes. However, nearby known occurrence makes presence a possibility.	Recommend survey during the blooming period of this plant.
<i>Campanula californica</i> swamp harebell	FSC; Rank 1B	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, North Coast coniferous forest; in mesic sites in forested and grassland habitat. Elevation range: 1 – 405 feet. Blooms: June – October.	<b>Unlikely.</b> Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species; seasonal wetland not wet enough (duration).	No further actions are recommended for this species.
<i>Carex comosa</i> bristly sedge	Rank 2B	Typically on lake and pond margins in coastal prairie, marshes and swamps, valley and foothill grassland. Elevation range: 0 – 425 feet. Blooms: May – September.	<b>Unlikely.</b> Habitat on the site is unsuitable for the species requirements, including no lake or pond margins.	No further actions are recommended for this species.
<i>Castilleja ambigua</i> var. <i>humboldtensis</i> Humboldt Bay owl's-clover	Rank 1B	Coastal salt marsh; in coastal areas associated with marsh vegetation. Elevation range: 0 – 10 feet. Blooms: April – August.	<b>No Potential.</b> Habitat on and adjacent to the site is clearly unsuitable for the species requirements as there is no salt marsh habitat.	No further actions are recommended for this species.
<i>Castilleja leschkeana</i> Point Reyes paintbrush	Rank 1A	Marshes and swamps; situated in coastal marsh habitats. Elevation range: 0 – 35 feet. Blooms: June.	<b>Unlikely.</b> Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrences within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Castilleja uliginosa</i> Pitkin Marsh Indian paintbrush	SE; Rank 1A	Freshwater marshes and swamps; presumed extinct with last wild plant observed in 1987; highly restricted to Pitkin Marsh near Sebastopol. Elevation range: 60 feet. Blooms: June – July. Counties: SON.	<b>No Potential.</b> Generally restricted to Pitkin Marsh inland. Thought to be extinct. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	Rank 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically on dry shrubby slopes. Elevation range: 245 – 3495 feet. Blooms: February – April.	<b>No Potential.</b> Habitat the site is unsuitable for the species requirements, including no serpentine soil. Not within elevation range and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Ceanothus foliosus</i> var. <i>vineatus</i> Vine Hill ceanothus	Rank 1B	Chaparral; in acidic sandy soils. Elevation range: 45 – 305 feet. Blooms: March – May.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no acidic sandy soil. No occurrences within 5 miles and no ceanothus species were observed during site visit.	No further actions are recommended for this species.
<i>Ceanothus gloriosus</i> var. <i>porrectus</i> Mt. Vision ceanothus	Rank 1B	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland; low shrub in a variety of habitats in Point Reyes; located on sandy soils. Elevation range: 80 – 1000 feet. Blooms: February – May.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no sandy soil. No occurrences within 5 miles and no ceanothus species were observed during site visit.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Ceanothus masonii</i> Mason's ceanothus	SR, Rank 1B	Chaparral; located on serpentine ridges and slopes in chaparral or transitional zones. Elevation range: 745 – 1625 feet. Blooms: March – April.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil. No occurrences within 5 miles, not within elevation range, and no ceanothus species were observed during site visit.	No further actions are recommended for this species.
<i>Ceanothus purpureus</i> holly-leaved ceanothus	Rank 1B	Chaparral, cismontane woodland; located on rocky, volcanic slopes. Elevation range: 395 – 3000 feet. Blooms: February – June.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no volcanic soil. No occurrences within 5 miles, not within elevation range, and no ceanothus species were observed during site visit.	No further actions are recommended for this species.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes bird's-beak	FSC; Rank 1B	Coastal salt marshes; located in low-growing saltgrass and pickleweed mats. Elevation range: 0 – 35 feet. Blooms: June – October.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no salt marsh.	No further actions are recommended for this species.
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	FSC; Rank 1B	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub; located on sandy substrates of terraces and slopes. Elevation range: 10 – 700 feet. Blooms: April – August.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no sandy soil.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Chorizanthe cuspidata</i> var. <i>villosa</i> woolly-headed spineflower	Rank 1B	Coastal scrub, coastal dunes, coastal prairie; located on sandy substrates near the beach. Elevation range: 10 – 195 feet. Blooms: May – August.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no sandy soil.	No further actions are recommended for this species.
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	FE; Rank 1B	Cismontane woodland, coastal dunes, coastal scrub, maritime chaparral; located on sandy terraces and bluffs or on loose sands. Elevation range: 10 – 975 feet. Blooms: April – September.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no sandy soil.	No further actions are recommended for this species.
<i>Chorizanthe valida</i> Sonoma spineflower	FE; SE; Rank 1B	Coastal prairie; in sandy soils. Elevation range: 35 – 1000 feet. Blooms: June – August.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no sandy soil.	No further actions are recommended for this species.
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water hemlock	Rank 2B	Coastal freshwater and brackish marshes. Elevation range: 0 – 650 feet. Blooms: July – September.	<b>Unlikely.</b> Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. Habitat site is unsuitable for the species requirements, including no salt or brackish marsh. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Cirsium andrewsii</i> Franciscan thistle	Rank 1B	Coastal bluff scrub, broadleaf upland forest, coastal scrub; sometimes located along serpentine seeps. Elevation range: 0 – 490 feet. Blooms: March – July.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no serpentine.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Clarkia concinna</i> ssp. <i>raichei</i> Raiche's red ribbons	Rank 1B	Coastal bluff scrub; located on exposed rock bluffs and vertical slopes near Walker Creek. Elevation range: 0 – 325 feet. Blooms: April – May.	<b>No Potential.</b> Habitat is unsuitable for the species requirements with no rocky or vertical bluffs.	No further actions are recommended for this species.
<i>Clarkia imbricata</i> Vine Hill clarkia	FE; SE; Rank 1B	Chaparral, valley and foothill grassland; located on acidic sandy substrate. Elevation range: 160 – 245 feet. Blooms: June – August.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no acidic sandy soil.	No further actions are recommended for this species.
<i>Collomia diversifolia</i> serpentine collomia	Rank 4	Chaparral, cismontane woodland; situated on rocky to gravelly serpentine substrates. Elevation range: 650 – 1950 feet. Blooms: May – June.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil.	No further actions are recommended for this species.
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i> serpentine bird's-beak	Rank 4	Closed-cone coniferous forest, chaparral, cismontane woodland; typically located serpentine substrate. Elevation range: 1540 – 2975 feet. Blooms: July – August.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil.	No further actions are recommended for this species.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> Pennell's bird's-beak	FE; SR; Rank 1B	Closed-cone coniferous forest, chaparral; located in openings in manzanita scrub and Sargent cypress forest underlain by serpentine substrate. Elevation range: 145 – 995 feet. Blooms: June – September. Counties: SON.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	Rank 2B	Marshes and swamps; freshwater. Elevation range: 45 – 910 feet. Blooms: July – October.	<b>Unlikely.</b> Seasonal wetland is likely not wet enough (duration) for this species. Also, competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species.	No further actions are recommended for this species.
<i>Cuscuta pacifica</i> var. <i>papillata</i> Mendocino dodder	Rank 1B	Coastal dunes; located in interdune depressions; likely hosts on lupines, catchflies, and cudweeds. Elevation range: 0 – 165 feet. Blooms: July – October.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no dune habitat.	No further actions are recommended for this species.
<i>Cypripedium californicum</i> California lady's-slipper	Rank 4	Bogs and fens, lower montane coniferous forest; located along seeps and streambanks, typically underlain by serpentine. Elevation range: 95 – 8940 feet. Blooms: April – August.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil. Also, slightly out of elevation range.	No further actions are recommended for this species.
<i>Delphinium bakeri</i> Baker's larkspur	FE; SE; Rank 1B	Coastal scrub, valley and foothill grassland; located on rocky north-facing slopes derived of decomposed shale. Elevation range: 260 – 995 feet. Blooms: March – May. Counties: MRN, SON.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including not within elevation range and no occurrence within 5 miles.	No further actions are recommended for this species.
<i>Delphinium luteum</i> yellow larkspur	FE; SR; Rank 1B	Chaparral, coastal prairie, coastal scrub; located on rocky north-facing slopes. Elevation range: 0 – 325 feet. Blooms: March – May. Counties: MRN, SON.	<b>Unlikely.</b> Some of the habitat components meeting the species requirements are present, however, no north facing slopes and no occurrence within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Dirca occidentalis</i> western leatherwood	Rank 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland; located on brushy, mesic slopes in woodland and forest. Elevation range: 165 – 1285 feet. Blooms: January – April.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including not within elevation range.	No further actions are recommended for this species.
<i>Downingia pusilla</i> dwarf downingia	Rank 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no vernal pool or pool/lake margin habitat, and no occurrence within 5 miles.	No further actions are recommended for this species.
<i>Erigeron biolettii</i> Streamside daisy	Rank 3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest; on rocky, mesic. Elevation range: 95 – 3610 feet. Blooms: June – October.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no occurrence within 5 miles and not within elevation range.	No further actions are recommended for this species.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	Rank 1B	Chaparral; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil, no occurrence within 5 miles, and not within elevation range.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Erigeron serpentinus</i> serpentine daisy	Rank 1B	Chaparral; serpentine shrubland. Elevation range: 60 – 670 feet. Blooms: May – August.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil, no occurrence within 5 miles and not within elevation range.	No further actions are recommended for this species.
<i>Erysimum concinnum</i> bluff wallflower	Rank 1B	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation range: 0 – 600 feet. Blooms: February – July.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no coastal dunes, bluff scrub habitat.	No further actions are recommended for this species.
<i>Erysimum franciscanum</i> San Francisco wallflower	FSC; Rank 4	Maritime chaparral, coastal dunes, coastal scrub, valley and foothill grassland; typically located on serpentine or volcanic substrate, often on roadsides. Elevation range: 0 – 1790 feet. Blooms: March – June.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no occurrence within 5 miles and no serpentine/volcanic soil.	No further actions are recommended for this species.
<i>Erythronium revolutum</i> coastal fawn lily	Rank 2B	Bogs and fens, broadleaf upland forest, North Coast coniferous forest; in mesic sites, often on streambanks. Elevation range: 0 – 1350 feet. Blooms: March – July, sometimes August.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, and competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrence within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Fritillaria lanceolata</i> var. <i>tristulis</i> Marin checker lily	Rank 1B	Coastal bluff scrub, coastal scrub, coastal prairie; observed in canyons, riparian areas, and rock outcrops; often located on serpentine substrate. Elevation range: 45 – 490 feet. Blooms: February – May.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no occurrence within 5 miles and no serpentine soil.	No further actions are recommended for this species.
<i>Fritillaria liliacea</i> fragrant fritillary	Rank 1B	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine. Elevation range: 10 – 1335 feet. Blooms: February – April.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no occurrence within 5 miles and no serpentine or volcanic soil.	No further actions are recommended for this species.
<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia	Rank 1B	Coastal dunes, coastal scrub. Elevation range: 5 – 600 feet. Blooms: April – July.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no coastal dunes.	No further actions are recommended for this species.
<i>Gilia capitata</i> ssp. <i>pacifica</i> Pacific gilia	Rank 1B	Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland; situated in openings. Elevation range: 15 – 4325 feet. Blooms: April – August.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no occurrence within 5 miles.	No further actions are recommended for this species.
<i>Gilia capitata</i> ssp. <i>tomentosa</i> woolly-headed gilia	Rank 1B	Coastal bluff scrub; rocky outcrops on the coast. Elevation range: 15 – 155 feet. Blooms: May – July.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no rocky outcrops.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Gilia millefoliata</i> dark-eyed gilia	Rank 1B	Coastal dune. Elevation range: 5 – 100 feet. Blooms: April – July.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no coastal dune habitat.	No further actions are recommended for this species.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	Rank 3	Coastal scrub, coastal bluff scrub, valley and foothill grassland; situated on sea bluffs underlain by sand substrate, often derived from serpentine. Elevation range: 45 – 1300 feet. Blooms: June – September.	<b>Unlikely.</b> Habitat site is unsuitable for the species requirements, including no serpentine soil and no occurrence within 5 miles.	No further actions are recommended for this species.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> Hayfield tarplant	Rank 1B	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	<b>Unlikely.</b> Known occurrence is inland nearly 4 miles and Study Area is generally out of elevation range.	No further actions are recommended for this species.
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	Rank 1B	Coastal bluff scrub, coastal dunes; on sandy bluffs and flats in direct maritime influence. Elevation range: 0 – 215 feet. Blooms: March – June.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no coastal dunes and no occurrence within 5 miles.	No further actions are recommended for this species.
<i>Horkelia marinensis</i> Point Reyes horkelia	Rank 1B	Coastal dunes, coastal prairie, coastal scrub; located on sandy flats and dunes near the coast; in open grassy sites within scrub. Elevation range: 15 – 1140 feet. Blooms: May – September.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no coastal dunes or sandy flats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Horkelia tenuiloba</i> thin-lobed horkelia	Rank 1B	Broadleaf upland forest, coastal scrub, valley and foothill grassland, chaparral; in mesic openings, on sandy substrate. Elevation range: 165 – 1640 feet. Blooms: May – July.	<b>No Potential.</b> Habitat site is unsuitable for the species requirements, including no coastal dunes or sandy substrate.	No further actions are recommended for this species.
<i>Lasthenia burkei</i> Burke's goldfields	FE; SE; Rank 1B	Vernal pools, meadows and seeps; typically located in pools and swales. Elevation range: 45 – 1950 feet. Blooms: April – June.	<b>No Potential.</b> Habitat on and adjacent to the site is clearly unsuitable for the species with no vernal pools; no occurrences within 5 miles and is typically associated with Santa Rosa Plain.	No further actions are recommended for this species.
<i>Lasthenia californica ssp. bakeri</i> Baker's goldfields	Rank 1B	Openings in closed-cone coniferous forest, coastal scrub, meadows and seeps, marshes and swamps. Elevation range: 60 – 520 feet. Blooms: April – October.	<b>Moderate Potential.</b> Habitat components meeting the species requirements are present. Occurrence within 5 miles.	Recommend survey during blooming period to determine presence or absence.
<i>Lasthenia californica ssp. macrantha</i> perennial goldfields	Rank 1B	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation range: 5 – 520 feet. Blooms: January – November.	<b>Moderate Potential.</b> Marginal habitat is present for this species in coastal scrub. Occurrence within 5 miles.	Recommend survey during blooming period to determine presence or absence.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE; Rank 1B	Valley and foothill grassland, vernal pools, cismontane woodland; located in pools, swales, and depressions in mesic grassy sites underlain by alkaline substrate. Elevation range: 0 – 1530 feet. Blooms: March – June.	<b>No Potential.</b> Habitat on the site is unsuitable for the species with no alkaline substrate and no occurrence within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Layia carnosa</i> beach layia	FE; SE; Rank 1B	Coastal dunes; located in sparsely vegetated semi-stabilized dunes behind foredunes. Elevation range: 0 – 195 feet. Blooms: March – July.	<b>No Potential.</b> Habitat on and adjacent to the site is clearly unsuitable with no dunes.	No further actions are recommended for this species.
<i>Legenere limosa</i> legenere	FSC; Rank 1B	Vernal pools; typically located in the deepest portions of pools. Elevation range: 3 – 2860 feet. Blooms: April – June.	<b>No Potential.</b> Habitat on the site is unsuitable for the species with no vernal pools present. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	Rank 1B	Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1640 feet. Blooms: April – May.	<b>No Potential.</b> Habitat on the site is unsuitable for the species with no volcanic or serpentine soils and out of elevation range; no occurrence within 5 miles.	No further actions are recommended for this species.
<i>Leptosiphon rosaceus</i> rose leptosiphon	Rank 1B	Coastal bluff scrub. Elevation range: 0 – 325 feet. Blooms: April – July.	<b>Unlikely.</b> No coastal bluff habitat and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Lessingia arachnoidea</i> Crystal Springs lessingia	FSC; Rank 1B	Coastal sage scrub, valley and foothill grassland, cismontane woodland; typically on grassy serpentine slopes. Elevation range: 60 – 200 feet. Blooms: July – October.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for this species with no serpentine and no occurrences within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Lessingia hololeuca</i> woolly-headed lessingia	Rank 3	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; typically on clay, serpentine substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for this species with no serpentine and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> Pitkin Marsh lily	FE; SE; Rank 1B	Cismontane woodland, meadows and seeps, freshwater marsh, riparian scrub; located on acidic saturated sandy substrate. Elevation range: 110 – 215 feet. Blooms: June – July.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable and not within elevation range; considered restricted to Pitkin Marsh.	No further actions are recommended for this species.
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	FE; SE; Rank 1B	Mesic meadows, valley and foothill grassland, vernal pools; located in swales, wet meadows, depressions, and pools in the oak savanna of the Santa Rosa Plain on heavy adobe clay substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for the species; associated with vernal pools and seasonal wetlands on the Santa Rosa Plain.	No further actions are recommended for this species.
<i>Lupinus arboreus</i> var. <i>eximius</i> San Mateo tree lupine	Rank 3	Chaparral, coastal scrub. Elevation range: 290 – 1790 feet. Blooms: April – July.	<b>Unlikely.</b> Study Area not within elevation range of the species and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Lupinus tidestromii</i> Tidestrom's lupine	FE; SE; Rank 1B	Coastal dunes; on partially stabilized dunes immediately near the ocean. Elevation range: 0 – 100 feet. Blooms: April – June.	<b>No Potential.</b> No suitable dune habitat is present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Microseris paludosa</i> marsh microseris	Rank 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation range: 5 – 300 feet. Blooms: April – June.	<b>Unlikely.</b> Some of the habitat components meeting the species requirements are present, however it is associated with Contra Costa and San Francisco counties and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Monardella sinuata</i> ssp. <i>nigrescens</i> curly-leaved monardella	Rank 4	Chaparral, coastal dunes, coastal scrub, lower montane coniferous forest; situated on sandy substrates. Elevation range: 0 – 975 feet. Blooms: April – September.	<b>Unlikely.</b> Habitat on and adjacent to the site is unsuitable with no sandy soil and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	Rank 1B	Wet, mesic sites underlain by adobe and/or alkaline substrate in cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Elevation range: 15 – 5710 feet. Blooms: April – July.	<b>Unlikely.</b> Habitat on and adjacent to the site is unsuitable for the species with no vernal pools. Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i> many-flowered navarretia	FE, SE, Rank 1B	Vernal pools underlain by substrate derived from volcanic ash flows. Elevation range: 95 – 3120 feet. Blooms: May – June.	<b>No Potential.</b> Habitat on the site is unsuitable for the species with no vernal pools, out of elevation range, and no occurrences within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> Gairdner's yampah	FSC; Rank 4	Broadleaf upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools; located in vernal mesic sites. Elevation range: 0 – 1985 feet. Blooms: June – October.	<b>Unlikely.</b> No vernal pool habitat is present in the Study Area and no occurrences within 5 miles..	No further actions are recommended for this species.
<i>Phacelia insularis</i> var. <i>continentis</i> North Coast phacelia	Rank 1B	Coastal bluffs scrub, coastal dunes; located on open maritime bluffs underlain by sandy substrate. Elevation range: 30 – 555 feet. Blooms: March – May.	<b>Unlikely.</b> Habitat on the site is unsuitable for the species with no sandy substrate.	No further actions are recommended for this species.
<i>Pleuropogon hooverianus</i> North coast semaphore grass	FSC; ST; Rank 1B	Broadleaf upland forests, meadows and seeps, freshwater marshes and swamps, North Coast coniferous forest, shaded, wet, and grassy areas in forested habitat. Elevation range: 10 – 635 feet. Blooms May – August.	<b>Unlikely.</b> Tall overgrowth canopy by dominant plants in the seasonal wetland area likely precludes presence. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Polemonium carneum</i> Oregon polemonium	Rank 2B	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation range: 0 – 5950 feet. Blooms: April – September.	<b>Moderate Potential.</b> Some of the habitat components meeting the species requirements are present and occurrence within 5 miles. The species has a moderate probability of being found on the site.	Recommend survey during blooming period to determine presence or absence.
<i>Polygonum marinense</i> Marin knotweed	FSC; Rank 3	Salt and brackish coastal marshes. Elevation range: 0 – 35 feet. Blooms: sometimes April, May – August, sometimes October.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for the species with no coastal salt or brackish marsh.	No further actions are recommended for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Potentilla uliginosa</i> Cunningham Marsh cinquefoil	Rank 1A	Freshwater marshes and swamps; located in oligotrophic wetland habitat; presumed extinct. Elevation range: 95 – 130 feet. Blooms: May – August.	<b>No Potential.</b> Seasonal wetland habitat on the site is likely not wet enough (duration) and not within elevation range. Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. Plant is thought to be extinct with no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Ranunculus lobbii</i> Lobb's buttercup	Rank 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in mesic, vernal wet areas. Elevation range: 45 – 1530 feet. Blooms: February – May.	<b>No Potential.</b> Seasonal wetland habitat on the site is likely not wet enough (duration). Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Rhynchospora alba</i> white beaked-rush	Rank 2B	Bogs and fens, meadows and seeps, freshwater marshes and swamps. Elevation range: 195 – 6695 feet. Blooms: July – August.	<b>No Potential.</b> Seasonal wetland habitat on the site is likely not wet enough (duration) out of elevation range. Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrences within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Rhynchospora californica</i> California beaked-rush	FSC; Rank 1B	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps. Elevation range: 145 – 3315 feet. Blooms: May – July.	<b>No Potential.</b> Seasonal wetland habitat on the site is likely not wet enough (duration) out of elevation range. Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Rhynchospora capitellata</i> brownish beaked-rush	Rank 2B	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest/ mesic. Elevation range: 1490 – 6560 feet. Blooms: July – August.	<b>No Potential.</b> Seasonal wetland habitat on the site is likely not wet enough (duration) and out of elevation range. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Rhynchospora globularis</i> round-headed beaked-rush	Rank 2B	Freshwater marshes and swamps. Elevation range: 145 – 200 feet. Blooms: July – August.	<b>No Potential.</b> Seasonal wetland habitat on the site is likely not wet enough (duration) and out of elevation range. No occurrences within 5 miles.	No further actions are recommended for this species.
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i> Point Reyes checkerbloom	Rank 1B	Marshes and swamps; located in freshwater marsh habitat near the coast. Elevation range: 10 – 245 feet. Blooms: April – September.	<b>Unlikely.</b> Seasonal wetland habitat on the site is likely not wet enough (duration). Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species. No occurrences within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Sidalcea hickmanii</i> ssp. <i>viridis</i> Marin checkerbloom	FSC; Rank 1B	Chaparral; located on serpentine or volcanic substrate, often located in burns. Elevation range: 160 – 1400 feet. Blooms: May – June.	<b>No Potential.</b> Habitat on and adjacent to the site is unsuitable for the species. Out of elevation range and no serpentine or volcanic soil.	No further actions are recommended for this species.
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i> purple-stemmed checkerbloom	Rank 1B	Broadleaf upland forest, coastal prairie. Elevation range: 15 – 65 feet. Blooms: May.	<b>Unlikely.</b> No broadleaf upland forest or coastal prairie habitat is present. The species is not likely to be found on the site.	No further actions are recommended for this species.
<i>Trifolium amoenum</i> two-fork clover	FE; Rank 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine. Elevation range: 15 – 1365 feet. Blooms: April – June.	<b>Unlikely.</b> Few of the habitat components meeting the species requirements are present, including no serpentine and no occurrences within 5 miles. The species is not likely to be found on the site.	No further actions are recommended for this species.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	Rank 1B	Broadleaf upland forest, cismontane woodland, coastal prairie endangered margins. Elevation range: 105 – 610 feet. Blooms: April – October.	<b>Unlikely.</b> Few of the habitat components meeting the species requirements are present and not within elevation range. The species is not likely to be found on the site.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS & RECOMMENDATIONS
<i>Trifolium hydrophilum</i> saline clover	Rank 1B	Marshes and swamps, mesic portions of alkali vernal pools, mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	<b>No Potential.</b> Habitat on the site is unsuitable for the species with the seasonal wetland not wet enough (duration). Competitive, over-shadowing canopy of seasonal wetland habitat likely precludes this species and no occurrences within 5 miles.	No further actions are recommended for this species.
<i>Triphysaria floribunda</i> San Francisco owl's-clover	Rank 1B	Coastal prairie, valley and foothill grassland; located on serpentine and non-serpentine substrate. Elevation range: 30 – 520 feet. Blooms: April – June.	<b>Unlikely.</b> Few of the habitat components meeting the species requirements are present, including no serpentine. Also no occurrences within 5 miles. The species is not likely to be found on the site.	No further actions are recommended for this species.
<i>Viburnum ellipticum</i> oval-leaved viburnum	Rank 2B	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 705 – 4595 feet. Blooms: May – June.	<b>No Potential.</b> No suitable habitat is present for the species; not within elevation range and no occurrences within 5 miles.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>MAMMALS</b>				
pallid bat <i>Antrozous pallidus</i>	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>No Potential.</b> The Study Area lacks suitable roosting substrates and no known occurrences within 5 miles.	No further actions are recommended.
Sonoma tree vole <i>Arborimus pomo</i>	SSC	North coastal fog belt from Oregon border to Sonoma County. Occurs In Douglas fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	<b>No Potential.</b> No suitable habitat is present.	No further actions are recommended.
Townsend's western big-eared bat <i>Corynorhinus townsendii townsendii</i>	SC, SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance.	<b>Unlikely.</b> The Study Area lacks suitable secluded nesting substrates.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western red bat <i>Lasiurus blossevillii</i>	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	<b>Unlikely.</b> The Study Area lacks large broad-leaved trees and other typical roosting substrates. No known occurrence nearby.	No further actions are recommended.
hoary bat <i>Lasiurus cinereus</i>	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	<b>Unlikely.</b> The Study Area lacks suitable roost trees. May forage within the Study Area.	No further actions are recommended.
long-eared myotis <i>Myotis evotis</i>	WBWG Medium	Usually associated with coniferous forests from sea level to 9,000 feet in elevation; also occurs in semiarid shrublands, chaparral, and agricultural areas. Individuals roost under exfoliating tree bark, and in hollow trees, caves, mines, cliff crevices, and rocky outcrops on the ground.	<b>Unlikely.</b> The Study Area is unforested and otherwise lacks any typical roost substrates for this species.	No further actions are recommended.
fringed myotis <i>Myotis thysanodes</i>	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts.	<b>Unlikely.</b> The Study Area lacks suitable roost trees, caves/mines and other typical roost substrates for this species. May forage within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, CFP	Found only in the saline emergent wetlands of the San Francisco Bay Estuary and its tributaries. Pickleweed is primary habitat, but may use other thick wetland vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	<b>No Potential.</b> The Study Area lacks salt marsh habitat.	No further actions are recommended.
Point Reyes jumping mouse <i>Zapus trinotatus orarius</i>	SSC	Inhabits bunch grass marshes on the uplands of Point Reyes in areas safe from continuous inundation. Eats mainly grass seeds with some insects and fruit taken. Builds grassy nests on ground under vegetation, burrows in winter.	<b>No Potential.</b> Study Area lacks suitable habitat and is presumably outside of this species' range.	No further actions are recommended.
American badger <i>Taxidea taxus</i>	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	<b>Unlikely.</b> While the Study Area provides areas of open grassland, no burrows of the size and type made by this species were observed during the site visit.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>BIRDS</b>				
tricolored blackbird <i>Agelaius tricolor</i>	SC, SSC, BCC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	<b>Unlikely.</b> However, the Study Area lacks tall, dense emergent vegetation or similar herbaceous vegetation for nesting. May occur with other blackbirds in wetland on adjacent property.	No further actions are recommended.
grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Found in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting. Breeds in open grasslands, generally with low-to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	<b>Unlikely.</b> Patches of grassland that comprise the Study Area are too small in area and fragmented to provide typical habitat for this species. No known nearby occurrences.	No further actions are recommended.
great egret <i>Ardea alba</i>	none (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	<b>Unlikely.</b> The Study Area does not provide any nesting habitat and no known nearby occurrences. May occasionally forage for small mammals.	No further actions are recommended.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
great blue heron <i>Ardea herodias</i>	none (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	<b>Unlikely.</b> The Study Area does not provide any nesting habitat and no known nearby occurrences.	No further actions are recommended.
burrowing owl <i>Athene cunicularia</i>	SSC, BCC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	<b>Unlikely.</b> The Study Area grassland habitat, however, this species is presumably extirpated from Sonoma County as a breeder (Shuford and Gardali 2008); recent, local wintering observations are concentrated on the Point Reyes Peninsula.	No further actions are recommended.
oak titmouse <i>Baeolophus inornatus</i>	BCC	Occurs year-round in woodland and savannah habitats where oaks are present, as well as riparian areas. Nests in tree cavities.	<b>No Potential.</b> Oaks and other hardwood trees are not present in the Study Area.	No further actions are recommended.
western snowy plover <i>Charadrius nivosus</i> ( <i>alexandrinus</i> ) <i>nivosus</i>	FT, SSC, BCC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	<b>No Potential.</b> Study Area lacks suitable beach or shoreline habitat, and does not provide any suitable nesting substrates.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
northern harrier <i>Circus cyaneus</i>	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	<b>Unlikely.</b> The Study Area provides suitable foraging habitat and is within this species' local nesting range (Shuford 1993). However, grassland patches within the Study Area are fragmented and too dry to provide typical nesting habitat for this species.	No further actions are recommended.
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT, SE, BCC	Summer resident, breeding in dense riparian forests and jungles, typically with early successional vegetation present. Utilizes densely-foliaged deciduous trees and shrubs. Eats mostly caterpillars. Current breeding distribution within California very restricted.	<b>No Potential.</b> The Study Area lacks suitable riparian habitat, and there are no nesting records in Sonoma County after 1923 (Burridge 1995).	No further actions are recommended.
black swift <i>Cypseloides niger</i>	SSC, BCC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas.	<b>No Potential.</b> Study Area lacks any suitable nesting habitat.	No further actions are recommended.
white-tailed kite <i>Elanus leucurus</i>	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	<b>Unlikely.</b> Grassland patches within the Study Area are relatively restricted in size and no known nearby occurrences.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
San Francisco common yellowthroat <i>Geothlypis trichas sinuosa</i>	SSC, BCC	Requires thick, continuous cover down to water's surface for foraging, as well as dense emergent and/or riparian vegetation for nesting.	<b>Unlikely.</b> No suitable habitat and no known nearby occurrences.	No further actions are recommended.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, CFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	<b>No Potential.</b> The Study Area lacks extensive tidal or brackish marsh plains.	No further actions are recommended.
loggerhead shrike <i>Lanius ludovicianus</i>	SSC, BCC	Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	<b>Unlikely.</b> While the Study Area provides areas of open grassland, these areas are relatively small and no known nearby occurrences.	No further actions are recommended.
Bryant's savannah sparrow <i>Passerculus sandwichensis alaudinus</i>	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas; often found where wetland communities merge into grassland. May also occur in drier grasslands. Nests near the ground in taller vegetation, including along roads, levees, and canals.	<b>Moderate Potential.</b> The Study Area is near tidal habitat and provides coastal grassland that is suitable for this species, including for nesting. However, no known nearby occurrences.	If ground disturbance and/or vegetation removal occurs during the nesting bird season (from Feb. 1 to Aug. 15), a pre-construction nesting bird survey should be conducted and any active nest areas avoided.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Nuttall's woodpecker <i>Picoides nuttallii</i>	BCC	Year-round resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks; also occurs in riparian woodland. Nests in tree cavities.	<b>Unlikely.</b> No oaks and other hardwood trees are present in the Study Area.	No further actions are recommended.
California Ridgway's (clapper) rail <i>Rallus obsoletus obsoletus</i>	FE, SE, CFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on molluscs and crustaceans.	<b>No Potential.</b> The Study Area lacks tidal marsh and is outside of this species' range.	No further actions are recommended.
bank swallow <i>Riparia riparia</i>	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	<b>No Potential.</b> The Study Area lacks suitable cliff and riparian habitat.	No further actions are recommended.
yellow warbler <i>Setophaga (Dendroica) petechia brewsteri</i>	SSC, BCC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration.	<b>Unlikely.</b> The Study Area lacks riparian nesting habitat.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
northern spotted owl <i>Strix occidentalis caurina</i>	FT, SC (T), SSC	Year-round resident in dense, structurally complex forests, primarily those with old-growth or mature conifers. In Sonoma County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	<b>No Potential.</b> Study Area does not provide suitable year-round habitat for this species, including for nesting.	No further actions are recommended.
marbled murrelet <i>Brachyramphus marmoratus</i>	FT, SE	Predominantly coastal marine. Nests in old-growth coniferous forests up to 30 miles inland along the Pacific coast, from Eureka to Oregon border, and in Santa Cruz/San Mateo Counties. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes.	<b>No Potential.</b> No suitable habitat is present and nesting by this species has not been documented to occur in Sonoma County.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>AMPHIBIANS</b>				
California tiger salamander <i>Ambystoma californiense</i>	FE/FT, ST	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland and savannah. Spends most of life underground in mammal burrows and similar refugia. Vernal pools and other seasonal water features used for breeding.	<b>No Potential.</b> The Study Area is outside of this species' range.	No further actions are recommended.
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, stream pools and wetlands. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	<b>Unlikely.</b> The Study Area does not contain any aquatic habitat (suitable for breeding or otherwise). The nearby seep wetland on the adjacent property has dense emergent vegetation with no open water. The nearest documented occurrence in CNDDDB is located approximately 1.6 miles to the north (CDFW 2017).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
foothill yellow-legged frog <i>Rana boylei</i>	SSC	Found in or near rocky streams in a variety of habitats; thoroughly aquatic. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	<b>No Potential.</b> The Study Area lacks rocky stream habitat.	No further actions are recommended.
<b>REPTILES</b>				
Pacific (western) pond turtle <i>Actinemys marmorata</i>	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	<b>Unlikely.</b> Study Area lacks aquatic stream habitat; overland movement through Study Area unlikely.	No further actions are recommended.
<b>FISHES</b>				

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Coho salmon - central CA coast ESU <i>Oncorhynchus kisutch</i>	FE, SE	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	<b>No Potential.</b> The Study Area lacks suitable stream habitat.	No further actions are recommended.
steelhead - central CA coast DPS <i>Oncorhynchus mykiss irideus</i>	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	<b>No Potential.</b> The Study Area lacks suitable stream habitat.	No further actions are recommended.
Chinook salmon - California coastal ESU <i>Oncorhynchus tshawytscha</i>	FT	California Coastal Chinook Salmon ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	<b>No Potential.</b> The Study Area lacks suitable stream habitat.	No further actions are recommended.
Tomales roach <i>Lavinia symmetricus ssp.</i>	SSC	Habitat generalists. Tolerant of relatively high temperatures and low oxygen levels, however unable to tolerate very saline water. Tributaries to Tomales Bay.	<b>No Potential.</b> The Study Area lacks suitable stream habitat.	No further actions are recommended.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
tidewater goby <i>Eucyclogobius newberryi</i>	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	<b>No Potential.</b> The Study Area lacks coastal lagoons and associated stream habitat.	No further actions are recommended.
longfin smelt <i>Spirinchus thaleichthys</i>	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	<b>No Potential.</b> The Study Area lacks estuarine waters and associated stream habitat.	No further actions are recommended.
<b>INVERTEBRATES</b>				
western bumblebee <i>Bombus occidentalis</i>	SSI	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually those on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	<b>Unlikely.</b> Although there is a documented occurrence of this species within 1.5 miles of the Study Area (CDFW 2017), regular maintenance by mowing reduces the potential for presence.	No further actions are recommended.
California freshwater shrimp <i>Syncaris pacifica</i>	FE, SE, SSI	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	<b>No Potential.</b> The Study Area does not contain any streams.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE, SSI	Restricted to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, <i>Sedum spathulifolium</i> .	<b>No Potential.</b> Species is confined to San Mateo County. Suitable habitat is not present and larval host plant not observed in the Study Area.	No further actions are recommended.
monarch butterfly <i>Danaus plexippus</i>	SSI (winter roost sites protected by CDFW)	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	<b>Unlikely.</b> Study Area lacks the typical type wind-protected coastal tree groves. Individuals likely pass through the site.	No further actions are recommended.
Myrtle's silverspot butterfly <i>Speyeria zerene myrtleae</i>	FE, SSI	Restricted to the fog belt of northern Marin and southernmost Sonoma County, including the Point Reyes Peninsula; extirpated from coastal San Mateo County. Occurs in coastal prairie, dunes, and grassland. Larval foodplant is typically <i>Viola adunca</i> . Adult flight season may range from late June to early September.	<b>Unlikely.</b> Initially considered to be moderate to high potential because the Study Area is located east this species' recognized range and a nearby occurrence (CDFW 2017). However, regular maintenance by mowing and probably lack of larval host plant presence makes it unlikely to be present.	Spring survey during blooming period of larval host plant is recommended to confirm absence.

**\* Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
SE	State Endangered
SD	State Delisted
SC	State Candidate
ST	State Threatened
SR	State Rare
BCC	USFWS Birds of Conservation Concern
CFP	CDFW Fully Protected Animal
WBWG	Western Bat Working Group High or Medium Priority Species
Rank 1A	CNPS Rank 1A: Plants presumed extinct in California
Rank 1B	CNPS Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CNPS Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CNPS Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CNPS Rank 3: Plants about which CNPS needs more information (a review list)
Rank 4	CNPS Rank 4: Plants of limited distribution (a watch list)

**Potential to Occur:**

No Potential. Habitat on and 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 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 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 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. CNDDDB, 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.

Presence Unknown: A survey was not conducted to determine absence or presence of this species.

## Appendix B

### Study Area Photographs



1. View of 900 Highway 1 from upper elevation looking west toward Highway 1 and Bodega Bay.



2. The Study Area is regularly maintained by mowing in order to reduce fuel load and prevent wild fire.





3. View of the Study Area looking north. Adjacent areas are developed or are currently being developed.



4. The seasonal wetland in the western corner of the Study Area is dominated by tall and dense poison hemlock and California blackberry which tend to over shadow and out compete other species of plants.