

**BIOLOGICAL SCOPING AND BOTANICAL UPDATE  
SURVEY REPORT**

FOR

46800 FISH ROCK ROAD  
(APN 144-012-10)  
GUALALA, CA  
MENDOCINO COUNTY



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## 1.0 Summary

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A survey on an approximately one-acre parcel was conducted to locate special-status plants and plant communities, wetland and riparian areas, and special-status animal habitat to determine if they would be directly or potentially impacted by the proposed development, which consists of after the fact major vegetation removal, a new single family residence, garage, workshop, driveway, septic, well, and associated infrastructure. Around 2011 timber harvest occurred on the property and the majority of trees were cut. A reduced buffer analysis is included, indicating that a 50 foot setback distance to intact Bishop pine forest and the Bishop pine forest understory characterized by the dominance of coffeeberry and Pacific reedgrass is sufficient to protect natural resources. No further studies are recommended.

## 2.0 Background/Project Description

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On March 23, and June 10, 2010, a botanical survey and special status plant community analysis were conducted at 46800 Fish Rock Road (APN 144-012-10), Gualala, CA ("Project Site"). A report dated July 2010 was written by Spade Natural Resources Consulting identified mixed coniferous forest on the eastern 2/3 of the property and Northern Bishop pine forest on the western 1/3. A seasonal spring was located near the western property boundary and an occurrence of a single individual of Mendocino Coast lily was documented at the spring. The edge of the Bishop pine forest was marked with surveyor's tape on the property and a 50 ft buffer from this plant community was recommended in the report. In October of 2010, with the help of Forester John Williams, a Less than Three Acre Conversion Exemption was filed for the property and was accepted by CalFire that November. The majority of mature trees on the property were cut under the authority of this exemption. The limbed pine logs remain on the site for use as fire wood or other final disposition.

On October 11, 2014, a biological scoping survey and botanical survey updated was conducted on the parcel. The purpose of the study was to describe the existing vegetation communities, survey the parcel for the potential for special-status (rare) plants and plant communities and animal habitats, to address changes in plant communities that has occurred since the 2010 survey, and recommend additional surveys if needed.

The biological scoping survey has been conducted to facilitate the issuance of a permit to build within the Coastal Zone in Mendocino County. The owners propose to construct a 1603sqft residence, 528sqft garage, 600sqft workshop with solar panels, engineered septic system, well, driveway and guest parking. Proposed locations are shown on the map in Figure 1.

## 3.0 Project Site Description

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### 3.1 General Site Description

The Project Site is a one acre parcel located on the west side of Fish Rock Road approximately 0.2 miles north from its junction with Highway 1, within the Coastal Zone in the unincorporated area of the County of Mendocino. Elevation is from 73 to 85 meters above sea level. The site is 0.17 miles from the coast. The parcel was logged through a Less than Three Acre Conversion Exemption in 2011. The majority of mature trees were cut and limbed. Pine logs remain on the ground, some where they were cut and others have been stacked in log decks. Soils at the Project Site are mapped as AbalobadiahBruhelVizcaino complex, 30 to 50 percent slopes. This complex is not on the National Hydric Soils list (NRCS 2014).

### **3.2 Vegetation**

Biological scoping and botanical reports by Spade Natural Resources Consulting in 2010 reported two main plant communities on the parcel. Nearest Fish Rock Road, on the south facing sloped portion of the parcel, vegetation consisted of mixed coniferous forest and thick undergrowth. Many invasive plants including some large acacia trees were present in this area. On the west facing slope on the western portion of the parcel vegetation was dominated by large Bishop Pine trees with a more open understory. Currently the parcel is vegetated with understory plants that were present within the two previously described plant communities. Some grading and erosion has occurred on the east side of the parcel where heavy equipment was used to consolidate logs into piles. Within the western portion of the property logs were left where they fell and the habitat is rapidly recovering, with many Bishop pine seedlings beginning to overtop the shrub layer. Plant communities are mapping in Figure 1.

### **3.3 Wetland and Riparian**

A small seasonal spring occurs at the north western edge of the property. A single coast lily was found near the spring in 2010. No riparian vegetation is associated with the spring. A 25ft no-cut buffer around the spring was observed during logging operations. Conditions in this area are the same as those present in 2010.

### **3.4 Existing Development**

Approximately 0.14 acres of bare ground resulting from the 2011 logging operation exists on the parcel. Erosion control straw wattles have been installed in these areas. A concrete culvert is installed at the location where the driveway is proposed. The majority of the mature trees have been cut and most or all of the logs remain on the property.

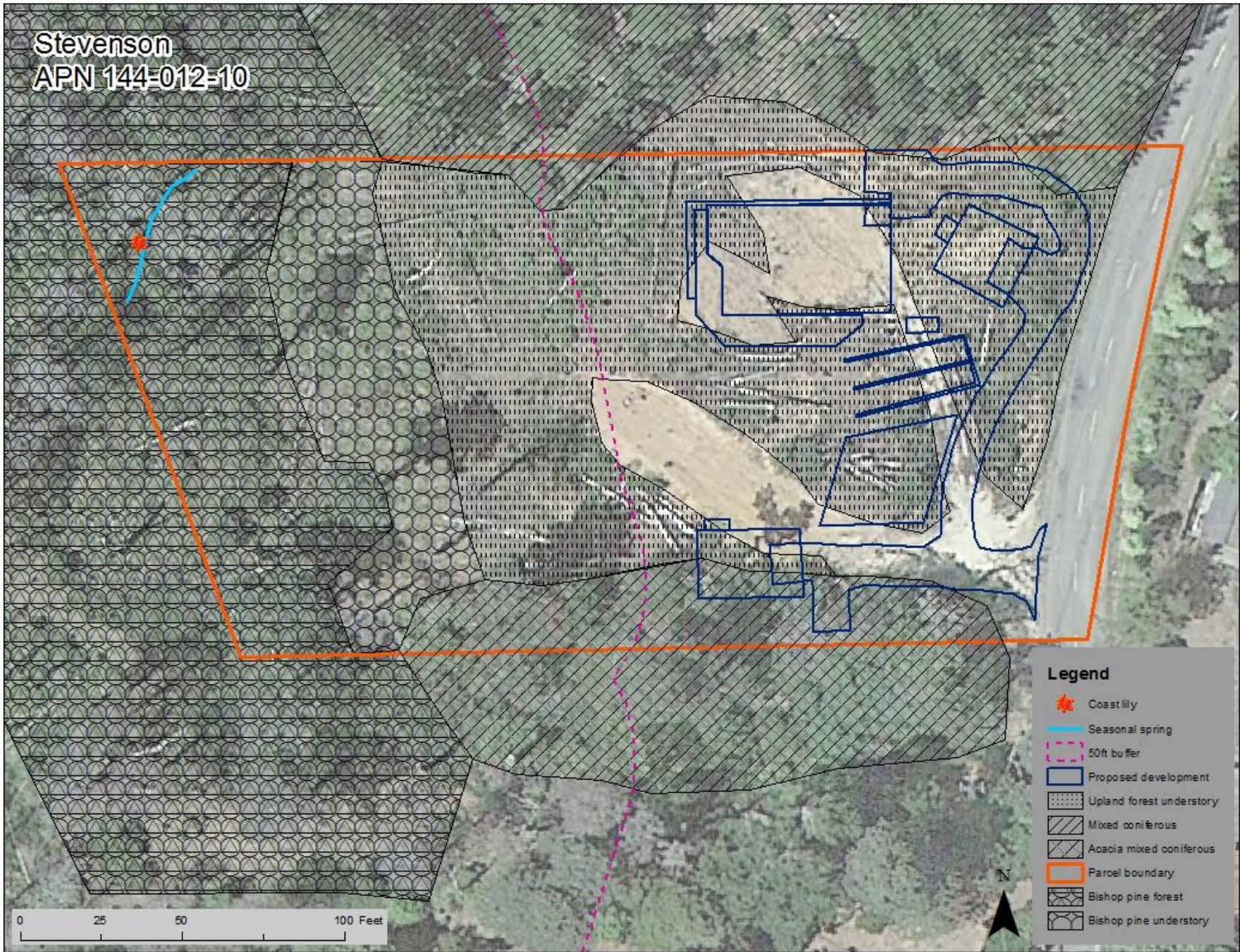


Figure 1. Plant communities map .

## 4.0 Methods

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### 4.1 Scoping Survey

Scoping surveys were based on the scoping lists in Tables 1-3 in Appendix A, and were conducted within the boundaries of the property and within 100ft of the boundaries where safely and legally accessible. The survey protocol was based on Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities developed by California Department of Fish and Game (CDFG 2009). The investigator, Asa B. Spade, has a Bachelor's Degree in environmental science with an emphasis in landscape ecosystems as well as a minor in botany.

#### 4.1.1 Blooming Period

The botanical update site visit occurred on October 11, 2014. The previous botanical survey site visits occurred on March 23, and June 10, 2010. Changes to the property due to the logging of the property in 2011 include tree removal and clearing of all vegetation in some areas. These changes are unlikely to have resulted in the introduction of new rare species.

## 5.0 Survey Results

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### 5.1 Potential Occurrences

#### Plants

Rare plant surveys in 2010 were conducted during times of the year when all special status plants with the potential to occur within the habitat types present at the Project Site would have been evident and identifiable. Changes in habitat due to logging in 2011 are unlikely to have resulted in the introduction of additional special status plant species. The survey in October of 2014 did not result in the discovery of any new plant species at the Project Site. No further surveys are warranted.

#### Invertebrates

Western bumble bee – No bumblebees were observed during the survey. No further surveys warranted.

#### Amphibians

California red-legged frog –No amphibians were documented. A seasonal spring is present in the northwestern corner of the property but it is not sufficient to provide breeding habitat. A stream occurs in Ferguson gulch, approximately ¼ mile to the east of the Project Site and two stock ponds are mapped approximately 0.35 miles to the southeast. The likelihood of California red-legged frog using the project site as upland habitat is low. No breeding habitat is present and upland movement generally occurs between bodies of water. No further surveys are warranted.

#### Birds

Raptors -Cooper's hawk , Northern goshawk, sharp-shinned hawk , osprey, merlin – No nests were documented from the Project Site during the surveys.

Other birds –Vaux's swift, rufous hummingbird, Allen's hummingbird, olive-sided flycatcher, purple martin, hermit warbler – No nests were documented during site investigations. Nesting bird surveys may be appropriate depending on the time of year vegetation removal for development occurs, as discussed in mitigation section below.

## Bats

Pallid bat, silver haired bat, long-eared myotis and hoary bat – These species roost in crevices in bark and/or in the foliage of trees and have the potential to occur wherever trees are present. Bishop pine, Douglas fir and acacia trees are present and may be suitable for roosting. Because these species are nocturnal they may be present during the non-survey timing of the Project Site. No additional trees are proposed for removal. No further surveys are warranted.

## Other Mammals

Sonoma tree vole – There is a potential for presence of Sonoma tree vole in Bishop pine and Douglas fir trees on or near the property. No nests were observed during surveys, and no additional trees are proposed for removal. No further surveys are warranted.

## 5.2 Documented occurrences

### 5.2.1 Bishop pine forest (*Pinus muricata* Forest Alliance) G3 S3

The western portion of the subject parcel, and areas beyond it to the west supports Bishop pine forest (Figure 2) with an understory of Pacific reedgrass (*Calamagrostis nutkaensis*) and California coffeeberry (*Frangula californica*). Other plants present within this area include coyote brush (*Baccharis pilularis*), evergreen huckleberry (*Vaccinium ovatum*), Pacific wax myrtle (*Morella californica*), Rhododendron (*Rhododendron macrophyllum*), English ivy (*Hedera helix*) and French broom (*Genista monspessulana*).



Figure 2. Bishop pine forest.

In 2011 a number of Bishop pine trees were cut on the property including within the area of Bishop pine forest. In 2010, within the “additional information” section of his Less than 3 Acre Conversion Exemption application, Forester John Williams noted that “The vegetation on the site consists primarily of Bishop pine and associated brush species. The stand age is estimated to be between 70 and 80 years old with sign of senescence. The Bishop pine primarily ranges between 10” and 20” DBH and are in declining health. A large pocket of dead pine trees exists in the western portion of the property and extends into the neighboring parcel.” A 2013 overhead photo (Figure 3) shows many standing dead Bishop pine trees to the west of the Subject parcel.



**Figure 3. GoogleEarth image of dead Bishop pine trees to the west of the subject parcel.**

For the purpose of this report the area considered to be Bishop pine forest includes the area vegetated with the understory species present within the intact Bishop pine forest, which is characterized by the presence of Pacific reed grass and California coffeeberry (Figure 4). A number of young Bishop pine trees (Figure 5) are present within the area where mature trees were cut in 2011. Most of these young trees appear to be one to three years old which may indicate that their germination was triggered by the 2011 logging operation.





**Figure 4. Habitat transition looking east from the western side of the subject parcel. Pacific reedgrass can be seen as a dominant understory vegetation in the lower portion of the photo, with more brushy upland vegetation characterizing the understory vegetation in the upper portion of the photo.**



**Figure 5. Young Bishop pines growing within the logged Bishop pine forest area.**

### 5.2.2 Mixed coniferous forest

In 2010 the eastern 2/3 of the parcel was vegetated with mixed coniferous forest. The mixed coniferous forest (Figure 6) included relatively young redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), Bishop pine (*Pinus muricata*), and some tanoak (*Lithocarpus densiflorus*) as overstory. Beneath these trees was a dense shrub layer comprised of hairy manzanita (*Arctostaphylos columbiana*), black huckleberry (*Vaccinium ovatum*), coffeeberry (*Rhamnus californica*), coyote brush (*Baccharis pilularis*), wax myrtle (*Myrica californica*), cotoneaster (*cotoneaster* sp.), French broom (*Genista monspessulana*), Scotch broom (*Cytisus scoparius*), and Pampas grass (*Cortaderia* sp.).

In 2011 the majority of the mature trees on the parcel were cut. Much of the understory vegetation described above remains, however, some bare ground remains as a result of the logging operation. All proposed development would occur within the area described as mixed coniferous forest in 2010.

Along the southern boundary of the subject parcel vegetation removal along a utility corridor has occurred sometime in the past. Within this corridor and expanding outward black wattle acacia (*Acacia decurrens*) has become established.



Figure 6. Habitat at the eastern side of the property. Mixed coniferous forest to the north of the Project Site can be seen in the background of the photo. Young acacia trees can be seen in the foreground.

### 5.2.3 Mendocino Coast lily (*Lilium maritimum*) 1B.1 G2 S2

A single occurrence of coast lily was located at the western edge of the property. The seasonal spring where this plant was located was dry by the time coast lily came into bloom but provides reliable yearly habitat conditions.

## 6.0 Discussion

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Proposed development includes a single family residence, garage, shop and associated septic disposal system, well and driveway. Locations for the proposed development are within an area where the mature trees that made up the overstory of mixed coniferous forest were cut in 2011 in order to accommodate the proposed development. Bishop pine forest occurs on the western portion of the property. Some trees within this area were cut in 2011. A number of young Bishop pine trees are present within the logged area of the Bishop pine forest. Because Bishop pine trees are naturally becoming reestablished from local seed no planting is recommended. The area with Pacific reedgrass and California coffeeberry understory was marked with yellow survey tape during the October 11 site visit. A minimum 50 foot buffer is recommended between the Bishop pine forest and proposed development. A reduced buffer analysis per 20.532.020 Mendocino County Coastal Zoning Code is included as Appendix D of this report, supporting a reduction in the minimum buffer size from 100 to 50 feet for the proposed development. The seasonal spring and occurrence of coast lily are well within the Bishop pine forest and, while they can be considered separate ESHAs they were not treated as such in this report because they occur more than 100ft from any proposed development.

### 6.1 Potential Impacts

If located within the cleared area of mixed coniferous forest, proposed development is not likely to impact any special status species or natural communities so long as a minimum buffer area of 50 feet is observed to the Bishop pine forest area. Mitigations should be followed to improve habitat values and to avoid potential introduction of invasive plants.

### 6.2 Mitigations

- A suitable buffer should be established from Bishop pine forest, which includes the area with Pacific reedgrass and California coffeeberry understory where Bishop pine understory was cut. A buffer distance of 50 feet is recommended and would need to be discussed with and agreed upon by the California Department of Fish and Wildlife.
- Erosion control fencing should be installed along the western edge of construction site along the 50ft buffer to the Bishop pine forest.
- Young bishop pines should be allowed to become reestablished wherever they are present outside the construction site. Within the western portion of the parcel consideration should be given to removal of Douglas fir (*Pseudotsuga menziesii*) and other tree seedlings that might compete with the young pines for light and space.
- The bird breeding season typically extends from February to August. Ideally, the clearing of vegetation and the initiation of construction can be done in the non-breeding season between September and January. If this is the case then no additional surveys should be necessary. If these activities cannot be done in the non-breeding season, a qualified biologist shall perform preconstruction breeding bird surveys within 14 days of the onset of construction or clearing of vegetation. If active breeding bird nests are observed, no ground disturbance activities shall occur within a minimum 100-foot exclusion zone. These exclusion zones may vary depending on species, habitat and level of disturbance. The exclusion zone shall remain in place around the active nest until all young are no longer dependent upon the nest. A biologist should monitor the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbances.

- Invasive acacia (*Acacia decurrens*), cotoneaster (*Cotoneaster franchetii*), Scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), English ivy (*Hedera helix*), pampas grass (*Cortaderia jubata*) and English holly (*Ilex aquifolium*) should be removed from all portions of the property to the greatest extent practicable.
- During construction, any stockpiled materials should be checked around and moved carefully in order to avoid accidental crushing or other damage to frogs.
- Landscaping on the parcel should not include any invasive plants and should ideally consist of native plants compatible with the adjacent plant communities.

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## Appendix A. Scoping Tables

**Table 1. Special-Status Plants of Potential Occurrence on the Project Site.** This table is derived from federal, state, and CNPS-listed plant species, including plants of regional significance. Explanation of column headings:

**FED:** federal status includes federally rare (FR), threatened (FT), or endangered (FE)

**STATE:** California state status includes rare (CR), threatened (CT), or endangered (CE)

**CNPS:** California Native Plant Society ranked inventory of native California plants thought to be at risk,

List 1A (1A) Presumed extinct in California.

List 1B (1B) Rare, threatened, or endangered in California and elsewhere.

List 2 (2) Rare, threatened or endangered in California but more common elsewhere.

List 3 (3) More information needed, a review list.

List 4 (4) Species of limited distribution, a watch list.

### CNDDB ELEMENT RANK

**G-RANK:** Global Ranking - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.

#### SPECIES OR NATURAL COMMUNITY LEVEL

G1 = Less than 6 viable element occurrences (Eos) OR less than 1,000 individuals OR less than 2,000 acres.

G2 = 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres.

G3 = 21-80 Eos OR 3,000-10,000 individuals OR 10,000-50,000 acres.

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

#### SUBSPECIES LEVEL

Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. For example: *Chorizanthe robusta* var. *hartwegii*. This plant is ranked G2T1. The G-rank refers to the whole species range i.e., *Chorizanthe robusta*. The T-rank refers only to the global condition of var. *hartwegii*.

#### Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a bird's eye or aerial view when ranking sensitive elements rather than simply counting Eos.
2. Uncertainty about the rank of an element is expressed in two major ways:
  - By expressing the rank as a range of values; e.g., S2S3 means the rank is somewhere between S2 and S3.
  - By adding a ? to the rank: e.g., S2? This represents more certainty than S2S3, but less than S2.
3. Other symbols
  - GH - All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists (SH = All California sites are historical).
  - GX - All sites are extirpated; this element is extinct in the wild (SX = All California sites are extirpated).
  - GXC - Extinct in the wild; exists in cultivation.
  - G1Q - The element is very rare, but there are taxonomic questions associated with it.
  - T - Rank applies to a subspecies or variety.

A Threat Code extension has been added following the CNPS List (e.g. 1B.1, 2.2 etc.)

Threat Code extensions and their meanings:

.1 - Seriously endangered in California

.2 - Fairly endangered in California

.3 - Not very endangered in California

**S-RANK:** STATE RANKING - The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

S1 = Less than 6 viable Eos OR less than 1,000 individuals OR less than 2,000 acres

S1.1 = very threatened

S1.2 = threatened

S1.3 = not very threatened OR no current threats known

S2 = 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = not very threatened OR no current threats known

S3 = 21-80 Eos or 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

S3.2 = threatened

S3.3 = not very threatened OR no current threats known

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.

S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.

Scientific Name	Common Name	CRPR	Federal	State	G-Rank	S-Rank	Life Form	Elevation	Detailed	Blooming Period	Habitat Suitability within Project Site
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	1B.1	N	N	G4G5T	S2.1	perennial herb	0-12 m.	Coastal dunes and coastal strand with sparse cover. Often the plant growing closest to the ocean.	June - October	None
<i>Agrostis blasdalei</i>	Blasdale's bent grass	1B.2	N	N	G2	S2.2	perennial rhizomatous herb	5-150 m.	Coastal dunes, coastal bluff scrub, coastal prairie. Sandy or gravelly soil close to rocks; often in nutrient-poor soil with sparse vegetation.	May - July	None
<i>Angelica lucida</i>	sea-watch	4.2	N	N	G5	S2S3	perennial herb	0-150 m.	Coastal bluff scrub, coastal scrub, coastal marshes and swamps, and coastal dunes. Bluff faces and rocky areas near the ocean. Fields and thickets along the coast.	May - September	None
<i>Arctostaphylos nummularia</i> ssp. <i>mendocinoensis</i>	pygmy manzanita	1B.2	N	N	G3?T1	S1	perennial evergreen shrub	90-200 m.	Closed-cone coniferous forest. Acidic sandy-clay soils in dwarfed coniferous forest. Only known location 2 miles east of Mendocino.	January	None
<i>Astragalus agnicidus</i>	Humboldt milk-vetch	1B.1	N	SE	G2	S2.1	perennial herb	575-750 m.	Broadleaved upland forests, North Coast coniferous forests, redwood forests. Disturbed openings in partially timbered forest lands; also along ridgelines; south aspects.	April - September	None
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	1B.2	N	N	G2T2	S2.2	perennial herb	0-30 m.	Coastal scrub, coastal salt marshes and swamps, mesic sites in coastal dunes, and along streams.	April - October	None
<i>Blennosperma nanum</i> var. <i>robustum</i>	Point Reyes blennosperma	1B.2	N	SR	G4T1	S1.2	annual herb	10-145 m.	Coastal prairie, coastal scrub. On open hills in sandy soil. From Pt. Reyes and Glass Beach, Fort Bragg.	February - April	None
<i>Calamagrostis bolanderi</i>	Bolander's reed grass	4.2	N	N	G3	S3.2	perennial rhizomatous herb	0-455 m.	Often mesic sites. Bogs and fens, broadleaved upland forest, closed-cone coniferous forest, coastal scrub, wet meadows and seeps, marshes and swamps (freshwater), North Coast coniferous forest.	May - August	Moderate
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	2.1	N	N	G3Q	S1.2	perennial rhizomatous herb	10-45 m.	Coastal scrub (mesic), freshwater marshes and swamps. Usually in marshy swales surrounded by grassland or coastal scrub. Sporadic in marshes from Crescent City to Marin.	May - July	None
<i>Calamagrostis foliosa</i>	leafy reed grass	4.2	N	SR	G3	S3.2	perennial herb	0-1220 m.	Coastal bluff scrub, rocky cliffs and ocean-facing bluffs, clumps in rock crevices of bluff bank of river. North Coast coniferous forests, often on steep wooded cliffs. Many occurrences located in the King Range, HUM Co.	May - September	Low
<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	coastal bluff morning-glory	1B.2	N	N	G4T2	S2.2	perennial herb	15-105 m.	Coastal scrub, road edges and ruderal sites, coastal dunes, North Coast coniferous forest (openings and edges in forests near the coast). Intermediate with subspecies <i>purpurata</i> . Occurs in central Mendocino County and southward.	May - September	Moderate
<i>Campanula californica</i>	swamp harebell	1B.2	N	N	G3	S3	perennial rhizomatous herb	1-405 m.	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, and North Coast coniferous forests. Many occurrences have few plants; uncommon where it occurs.	June - October	Moderate
<i>Carex californica</i>	California sedge	2.3	N	N	G5	S2?	perennial rhizomatous herb	90-250 m.	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (often on margins or drier areas).	May - August	Moderate
<i>Carex lenticularis</i> var. <i>limnophila</i>	lagoon sedge	2.2	N	N	G5T5	S1S2.2	perennial herb	0-6 m.	Lakeshores, beaches (often gravelly), bogs and fens, marshes and swamps, North Coast coniferous forest. Known from north road to Glen Blair.	June - August	Low
<i>Carex livida</i>	livid sedge	1A	N	N	G5	SH	perennial rhizomatous herb	-	Sphagnum bogs in California. Possibly extirpated from the state.	June	None
<i>Carex lyngbyei</i>	Lyngbye's sedge	2.2	N	N	G5	S2.2	perennial rhizomatous herb	-	Brackish or freshwater marshes and swamps, in water in mucky soil, soughs. May be growing near <i>Scirpus pungens</i> and <i>Triglochin maritima</i> . From Marin to Del Norte Cos.	May - August	None
<i>Carex saliniformis</i>	deceiving sedge	1B.2	N	N	G2	S2.2	perennial rhizomatous herb	3-230 m.	Mesic sites of coastal prairie, coastal scrub, and meadows; seeps, marshes and swamps (coastal salt); boggy ground. Often growing with <i>Panicum acuminatum</i> in Mendocino County. Known to grow with <i>Arenaria paludicola</i> .	June - July	None
<i>Carex viridula</i> var. <i>viridula</i>	green yellow sedge	2.3	N	N	G5T5	S1.3	perennial herb	0-1600 m.	Freshwater marshes and swamps; bogs and fens; mesic sites of North Coast coniferous forest. Known from Inglenook Fen.	June - November	None

Scientific Name	Common Name	CRPR	Federal	State	G-Rank	S-Rank	Life Form	Elevation	Detailed	Blooming Period	Habitat Suitability within Project Site
<i>Castilleja affinis</i> ssp. <i>litoralis</i>	Oregon coast paintbrush	2.2	N	N	G4G5T4	S2.2	perennial herb (hemiparasitic)	15-100 m.	Sandy sites in coastal bluff scrub and coastal scrub; coastal dunes. Grassy coastal bluffs. Cliffs above shore. In understory of mixed conifer forest with <i>Maianthemum</i> sp. Known from the bank of the Ten Mile River.	June	None
<i>Castilleja ambigua</i> ssp. <i>humboldtensis</i>	Humboldt Bay owl's-clover	1B.2	N	N	G4T2	S2.2	annual herb (hemiparasitic)	0-3 m.	Coastal salt marsh, sometimes with <i>Spartina</i> , <i>Distichlis</i> , <i>Salicornia</i> , Jaumea. Clay-peat soil with above species.	April - August	None
<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	1B.2	N	N	G2	S2.2	perennial herb (hemiparasitic)	-	Coastal bluff scrub, coastal scrub, closed-cone coniferous forest, coastal dunes, coastal prairie.	April - August	None
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	glory brush	4.3	N	N	G3G4T3	S3.3	perennial evergreen shrub	30-610 m.	Chaparral	March - June	None
<i>Ceanothus gloriosus</i> var. <i>gloriosus</i>	Point Reyes ceanothus	4.3	N	N	G3G4T3	S3.3	perennial evergreen shrub	5-520 m.	Sandy, coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub.	March - May	Moderate
<i>Chorizanthe howellii</i>	Howell's spineflower	1B.2	FE	ST	G1	S1.2	annual herb	0-35 m.	Sandy, often disturbed, areas of coastal prairie and coastal scrub. Coastal dunes, sandy slopes.	May - July	None
<i>Clarkia amoena</i> ssp. <i>whitneyi</i>	Whitney's farewell-to-spring	1B.1	N	N	G5T2	S2.1	annual herb	-	Coastal bluff scrub, coastal scrub. Coastal bluffs; often in rocky clay soil; in sun on slopes of road cuts. Known from the vicinity of the Ten Mile River mouth.	June - August	None
<i>Collinsia corymbosa</i>	round-headed Chinese-houses	1B.2	N	N	G1	S1.2	annual herb	-	Coastal dunes, coastal prairie.	April - June	None
<i>Coptis laciniata</i>	Oregon goldthread	4.2	N	N	G3	S3	perennial rhizomatous herb	0-100 m.	Meadows and seeps; North Coast coniferous forest moist streambanks and other mesic sites. Banks and floodplains of rivers in North Coast coniferous forests. Cutbanks of old skid roads.	March - April	Low
<i>Cornus canadensis</i>	bunchberry	2B.2	N	N	G5	S5	perennial herb	60-1920 m.	Bogs and fens, meadows and seeps, North Coast coniferous forest. Several populations at the southern end of its distribution in CA are extirpated. Many collections old; need field surveys.	May - July	Low
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's beak	4.3	N	N	G4G5T3	S3.3	annual herb (hemiparasitic)	475-915 m.	Usually serpentine. Closed-cone coniferous forest, chaparral, cismontane woodland, along edge of a dirt road, non-serpentine, rocky (serpentine) summit. Locally common annual herb to 75 cm in open areas on serpentine w/ <i>Madia elegans</i> , <i>Bromus carinatus</i> , <i>Lotus purshianus</i> & <i>Elymus glaucus</i> . Flowers cream white with yellow	July - August	None
<i>Cuscuta pacifica</i> var. <i>papillata</i>	Mendocino dodder	1B.2	N	N	G5T1	S1	annual vine (parasitic)	0-50 m.	Coastal dunes (interdune depressions). Rediscovered at Point Arena in 2011. Many historical occurrences may be extirpated; need field surveys. Known to occur on <i>Gnaphalium</i> , <i>Silene</i> , and <i>Lupinus</i> spp. in Mendocino Co.; and on <i>Polycarpon tetraphyllum</i> and <i>Calystegia purpurata</i> ssp. <i>saxicola</i> with <i>Sanicula arctopoides</i> nearby in Sonoma Co.	July - October	None
<i>Erigeron supplex</i>	supple daisy	1B.2	N	N	G1	S1.1	perennial herb	5-50 m.	Coastal bluff scrub, coastal prairie. Usually in open rocky areas in grassy sites with short grasses.	May - July	None
<i>Erysimum concinnum</i>	headland wallflower	1B.2	N	N	G3	S3	perennial herb	0-185 m.	Coastal bluff scrub, coastal dunes, coastal prairie. Largest occurrence known from Pt. Reyes NS; possibly of hybrid origin. Some occurrences from Del Norte and Mendocino Counties are also of possible hybrid origin; further study is ongoing.	March - May	None
<i>Erysimum menziesii</i>	Menzies' wallflower	1B.1	FE	SE	G1	S1	perennial herb	0-35 m.	Localized on coastal dunes and coastal strand. In remnant, open, partially stabilized dune habitat. Plants treated as ssp.; not validly published.	March - June	None
<i>Erythronium revolutum</i>	coast fawn lily	2.2	N	N	G4	S2S3	perennial bulbiferous herb	0-1065 m.	Bogs and fens; broadleaved upland forests; North Coast coniferous forest. On timbered and brushy hillside; wet soil under redwoods. Shady and mesic glens. Sometimes associated with <i>Arbutus menziesii</i> , <i>Lithocarpus densiflorus</i> , <i>Quercus chrysolepis</i> , <i>Pseudotsuga menziesii</i> . On rock outcrops and slopes in forests.	March - August	Low

Scientific Name	Common Name	CRPR	Federal	State	G-Rank	S-Rank	Life Form	Elevation	Detailed	Blooming Period	Habitat Suitability within Project Site
<i>Fritillaria roderickii</i>	Roderick's fritillary	1B.1	N	SE	G1Q	S1.1	perennial bulbiferous herb	15-610 m.	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Grassy slopes, mesas.	March - May	None
<i>Gilia capitata</i> ssp. <i>chamissonis</i>	blue coast gilia	1B.1	N	N	G5T2	S2.1	annual herb	2-200 m.	Coastal dunes; coastal scrub. On disturbed Franciscan sage scrub on loose sandy soils. Growing with <i>Ericameria ericoides</i> , <i>Lupinus chamissonis</i> , <i>Erysimum franciscanum</i> , <i>Croton californicus</i> , <i>Comissonia cheiranthifolia</i> , <i>Phacelia distans</i> .	April - July	None
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	N	N	G5T3T4	S2.2?	annual herb	5-300 m.	Coastal bluff scrub, openings in chaparral, coastal prairie, valley and foothill grassland. Steep cliffs, fields, and dry banks.	April - August	None
<i>Gilia capitata</i> ssp. <i>tomentosa</i>	woolly-headed gilia	1B.1	N	N	G5T1	S1.1	annual herb	15-155 m.	Coastal bluff scrub, valley and foothill grassland, rocky outcrops on the coast. Locally abundant on serpentine outcrop and serpentine-derived loam on west-facing slopes in grassland/pastureland. Grows with <i>Linum perenne</i> , <i>Lupinus</i> spp. and <i>Avena barbata</i> .	May - July	None
<i>Gilia millefoliata</i>	dark-eyed gilia	1B.2	N	N	G2	S2.2	annual herb	2-20 m.	Coastal dunes. Sandy, stabilized dune habitat. Sandy grassland between <i>Lupinus arboreus</i> shrubs dominated by nonnative grasses.	April - July	None
<i>Glyceria grandis</i>	American manna grass	2.3	N	N	G5	S1.3?	perennial rhizomatous herb	15-1980 m.	Bogs and fens, wet meadows and seeps, marshes and swamps (streambanks and lake margins). Ditches streams and ponds in valleys and lower elevations in the mountains. Sometimes standing in water; margins of rivers.	June - August	None
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	seaside tarplant	1B.2	N	N	G5T2T3	S2S3	annual herb	25-200 m.	Coastal scrub; valley and foothill grasslands, grassy valleys and hills, sometimes on grassy slopes with thin clayish soils; often in fallow fields. Sometimes on roadsides. Known from Glen Blair, Comptche, and Pudding Creek.	April - November	None
<i>Hesperexav sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	1B.2	N	N	G4T2T3	S2S3	annual herb	0-200 m.	Sandy coastal bluffs; coastal dunes, coastal dune mat, and sandy openings in wet dune meadows. Coastal bluff scrub. Rocky, grassy slopes. In areas of sparse vegetation cover in sandy substrate.	March - June	None
<i>Hesperocyparis pygmaea</i>	pygmy cypress	1B.2	N	N	G2	S2	perennial evergreen tree	35-305 m.	Closed-cone coniferous forests, usually podzol-like soils or Blacklock soils in Mendocino cypress pygmy forests.	-	None
<i>Horkelia marinensis</i>	Point Reyes horkelia	1B.2	N	N	G2	S2.2	perennial herb	5-30 m.	Sandy sites in coastal dunes, coastal prairie, and coastal scrub.	May - September	None
<i>Horkelia tenuiloba</i>	thin-lobed horkelia	1B.2	N	N	G2	S2.2	perennial herb	45-500 m.	Mesic openings or sandy sites in broadleaved upland forests, chaparral, and valley and foothill grassland. Wet meadows and marshy areas surrounded by <i>Pseudotsuga menziesii</i> , <i>Rhamnus californica</i> , <i>Baccharis pilularis</i> . Growing on sandy loam in coastal scrub. On sandstone in "pine barrens."	May - July	None
<i>Juncus supiniformis</i>	hair-leaved rush	2.2	N	N	G5	S2.2?	perennial rhizomatous herb	20-100 m.	Bogs and fens; freshwater marshes and swamps near the coast. Around pools, in ruts and ditches in podzol soils.	April - June	None
<i>Kopsiopsis hookeri</i>	small groundcone	2.3	N	N	G5	S1S2	perennial rhizomatous herb (parasitic)	-	North Coast coniferous forest. Open woods, shrubby places. Pygmy forest intergrading with redwood and Douglas-fir forests with sandy soils and flat aspect. Generally on <i>Gaultheria shallon</i> . Plants concentrated around the base and/or drip line of <i>Arctostaphylos columbiana</i> , but also in close proximity with other ericaceous species. May be parasitic on <i>Arctostaphylos</i> .	April - August	Low
<i>Lasthenia californica</i> ssp. <i>bakeri</i>	Baker's goldfields	1B.2	N	N	G3TH	SH	perennial herb	60-520 m.	Openings in closed-cone coniferous forest; coastal scrub; meadows and seeps; marshes and swamps. On windswept grassy hills; grazed areas. Early in the life of a plant the leaves may be wide and the plant prostrate; later the leaves become narrow and the plants' flowering stems turn upright.	April - October	Low
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	1B.2	N	N	G3T2	S2.2	perennial herb	5-520 m.	Coastal bluff scrub, coastal dunes, and coastal scrub. In clay soil on wind-swept ocean bluffs and coastal terraces, and in grassy patches and dried vernal pool beds. On sea bluffs and grassy plateaus back from the ocean. Coastal bluffs in heavy adobe; sandy soil of ocean headlands.	January - November	None



Scientific Name	Common Name	CRPR	Federal	State	G-Rank	S-Rank	Life Form	Elevation	Detailed	Blooming Period	Habitat Suitability within Project Site
<i>Lasthenia conjugens</i>	Contra Costa goldfields	1B.1	FE	N	G1	S1.1	annual herb	1-445 m.	Mesic sites in cismontane woodlands; alkaline playas; valley and foothill grasslands; vernal pools, swales, and low depressions. Extirpated from most of its range. Only one coastal location in Point Arena.	March - June	None
<i>Lathyrus palustris</i>	marsh pea	2.2	N	N	G5	S2S3	perennial herb	1-100 m.	Bogs and fens; mesic sites of coastal prairies, coastal scrub, lower montane coniferous forests, and North Coast coniferous forests, seasonal seeps surrounded by redwood/Douglas-fir/tanoak forests; marshes and swamps, including swamps adjacent to tidewater. Sometimes at the edge of wet <i>Carex</i> marshes in transition to scrub and spruce forests. Only one Mendocino occurrence.	March - August	Low
<i>Lilium maritimum</i>	coast lily	1B.1	N	N	G2	S2	perennial bulbiferous herb	-	Broadleafed upland forests, closed-cone coniferous forests, coastal prairies, coastal scrub, freshwater marshes and swamps. Historically in sandy soil, often on raised hummocks or bogs; today mostly on roadsides or roadside ditches. Sometimes growing with <i>Veratrum fimbriatum</i> , <i>Lithocarpus</i> , <i>Pinus muricata</i> , <i>Vaccinium</i> , <i>Gaultheria shallon</i> , <i>Pteridium</i> , and <i>Morella</i> .	May - August	Present
<i>Hosackia gracilis</i>	coast lotus	4.2	N	N	G4	S3.2	perennial rhizomatous herb	0-150 m.	Wetlands, roadsides, broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland.	March - July	Low
<i>Lycopodium clavatum</i>	running-pine	4.1	N	N	G5	S4.1	perennial rhizomatous herb	45-1640 m.	Marshes & swamps, North Coast coniferous forests (mesic)	June - August	Low
<i>Microseris borealis</i>	northern microseris	2.1	N	N	G4?	S1.1	perennial herb	915-1830 m.	Bogs and fens, lower montane coniferous forest, meadows and seeps/mesic.	June - September	None
<i>Microseris paludosa</i>	marsh microseris; marsh silverpuffs	1B.2	N	N	G2	S2.2	perennial herb	5-300 m.	Closed-cone coniferous forests, cismontane woodlands, coastal scrub, valley and foothill grasslands. A 1968 collection from Point Arena (3.2 km to N, between Hwy. 1 and beach) is the northernmost occurrence and is disjunct from southern populations.	April - July	Low
<i>Mitellastra caulescens</i>	leafy-stemmed mitrewort	4.2	N	N	G5	S4.2	perennial rhizomatous herb	6-1710 m.	Mesic sites in broadleafed upland forests, lower montane coniferous forests, meadows and seeps, North Coast coniferous forests. Moist alluvial soil under alder; mesic streamside and streambank habitat. Sides of roads in floodplains.	April - October	None
<i>Oenothera wolfii</i>	Wolf's evening-primrose	1B.1	N	N	G1	S1.1	perennial herb	3-800 m.	Sandy, usually mesic sites in coastal bluff scrub, coastal dunes, coastal prairie, and lower montane coniferous forests. Along roads on vertical cutbanks and in grassy median. On disturbed sterile soil; upper stabilized dunes; rocky slopes protected above strand; vertical cliffs above the ocean.	May - October	None
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2.2	N	N	G4T4	S1.2	perennial rhizomatous herb	30-650 m.	Coastal scrub, North Coast coniferous forests. In loose, rocky, poorly consolidated siltstone and mudstone. Associated with old growth redwood, Douglas-fir, tanoak, maple, dogwood, wild ginger, salal. Steep slopes in dry, sunny woods. Sandy stream banks, roadsides, rocky banks, old quarries.	February - July	None
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	1B.2	N	N	G2T1	S1.2	annual herb	10-160 m.	Sandy, sometimes rocky, sites in coastal bluff scrub; open maritime bluffs; coastal dunes. Rocky, thin soil with native and non-native grasses and forbs. Sandy pastureland and grazed coastal prairie.	March - May	None
<i>Pinus contorta</i> ssp. <i>bolanderi</i>	Bolander's beach pine	1B.2	N	N	G5T2	S2	perennial evergreen tree	35-250 m.	Closed-cone coniferous forests with podzol-like soils. Associated with Mendocino cypress and bishop pine, and Mendocino pygmy cypress forests.	-	None
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	1B.1	N	ST	G1	S1.1	perennial rhizomatous herb	10-1150 m.	Open and mesic areas of North Coast coniferous and broadleafed upland forests (oak/madrone); grassy flats in the shade of redwoods. Meadows and seeps. Wet grassy, usually shady areas, sometimes in freshwater marshes and often associated with forest environments. In stagnant water of highway ditches.	April - June	Low
<i>Potamogeton epihydrus</i>	ribbonleaf pondweed	2B.2	N	N	G5	S2.2?	perennial herb (rhizomatous)	369 - 2172 m.	Marshes and swamps (assorted shallow freshwater)	June - September	None

Scientific Name	Common Name	CRPR	Federal	State	G-Rank	S-Rank	Life Form	Elevation	Detailed	Blooming Period	Habitat Suitability within Project Site
<i>Puccinellia pumila</i>	dwarf alkali grass	2.2	N	N	G4?	S1.1?	perennial herb	1-10 m.	Coastal salt marshes and swamps; meadows and seeps, mineral spring meadows. Two known occurrences in Mendocino County.	July	None
<i>Rhynchospora alba</i>	white beaked-rush	2.2	N	N	G5	S2	perennial rhizomatous herb	60-2000 m.	Sphagnum bogs and fens (sometimes in Mendocino pygmy forests); meadows and seeps; marshes and swamps (freshwater). Sometimes in low, wet swales immediately surrounding grasslands. Known from Inglenook Fen and bog east of Fort Bragg.	July - August	None
<i>Sanguisorba officinalis</i>	great burnet	2.2	N	N	G5?	S2.2	perennial rhizomatous herb	60-1400 m.	Bogs and fens; broadleaved upland forests; meadows and seeps; marshes and swamps (marshy streams); North Coast coniferous forests; riparian forests. Serpentine seepage areas and along stream borders.	July - October	Low
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	1B.2	N	N	G5T2	S2.2	perennial rhizomatous herb	5-75 (245) m.	Freshwater marshes and swamps near the coast. Moist slopes from seeps and ephemeral streams, most areas quite marshy.	April - September	None
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2	N	N	G3G4	S3S4.2	perennial herb	-	Broadleaved upland forests; coastal prairie, coastal scrub, North Coast coniferous forest, riparian woodland. Woodlands and clearings near the coast, often in disturbed areas. Sometimes along floodplains.	March - August	Low
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B.2	N	N	G5T2	S2	perennial rhizomatous herb	15-65 m.	Coastal bluff scrub; coastal prairie; broadleaved upland forests, open areas of North Coast coniferous forest. Pastures, grassy landings, and roadsides. Only 1 Mendocino occurrence.	May - August	Low
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	purple-stemmed checkerbloom	1B.2	N	N	G5T2	S2.2	perennial rhizomatous herb	15-65 m.	Broadleaved upland forests; coastal prairie; grassy hills.	May - June	Low
<i>Trifolium buckwestiorum</i>	Santa Cruz clover	1B.1	N	N	G1	S1.1	annual herb	60-545 m.	Broadleaved upland forests, cismontane woodlands, coastal prairie. Moist grasslands. Disturbed sites on roadbed in redwood forest; Sparsely vegetated, gravelly, hardpacked, somewhat barren flats or gentle inclines, roadbeds or former roadbeds. Flat open areas with sun exposure, seasonal moisture, and gravelly, poor soils. Shallow depressions that collect water in rain. Common associates include <i>Juncus bufonius</i> , <i>Soliva sessilis</i> , <i>Danthonia californica</i> , and <i>Bromus hordeaceus</i> . In Mendocino Co., most collections from ~5 miles up Garcia River.	April - October	Low
<i>Trifolium trichocalyx</i>	Monterey clover	1B.1	FE	CE	G1	S1	annual herb	30-240 m.	Closed-cone coniferous forest (sandy, openings, burned areas). Discovered in Big River Forest in 2011. Previously known from only two occurrences from the central portion of the Monterey Peninsula.	April - June	Low
<i>Triquetrella californica</i>	coastal triquetrella	1B.2	N	N	G1	S1	moss	10-100 m.	Coastal bluff scrub, coastal scrub, valley and foothill grasslands. In open gravels or on thin soil over rocky outcrops. On roadsides, hillsides, rocky slopes, and fields. On beach sands with <i>Alnus</i> and <i>Gaultheria</i> . Only one Mendocino occurrence.	-	None
<i>Usnea longissima</i>	long-beard lichen	not ranked	N	N	G4	S4.2	lichen	-	In old-growth and late-successional conifer stands, hardwood stands, and riparian areas, particularly in coastal climates or on fog-swept mountains where humidity is high.	-	None
<i>Veratrum fimbriatum</i>	corn-lily	4.3	N	N	G3	S3.3	perennial herb	3-183 m.	Wet areas in coastal scrub and North Coast coniferous forests, meadows and seeps, bogs and fens. Restricted to coastal Sonoma and Mendocino Counties.	July - September	High
<i>Viola adunca</i>	Western dog violet	Not ranked	N	N	?	?	perennial herb	15-2200 m.	Yellow pine forest, red fir forest, lodgepole forest, redwood forest, mixed evergreen forest, subalpine forest, alpine fell-fields, wetland-riparian. Common and widespread on open sea bluffs to red fir forest.	April - August	Low
<i>Viola palustris</i>	marsh violet	2.2	N	N	G5	S1S2	perennial rhizomatous herb	0-15 m.	Coastal bogs and fens; mesic coastal scrub. Swampy, shrubby places in coastal scrub or coastal bogs. Carpeting the ground in shady wet places but flowering rarely. Sometimes growing among <i>Carex</i> , or among brush at edges of swamps. Freshwater marsh on deep peat substrate (4-5').	March - August	None

**Table 2. Plant Communities Occurring in Coastal Mendocino County.** A partial list of vegetation alliances occurring in coastal Mendocino County is derived from the California Department of Fish and Wildlife’s “List of Vegetation Alliances and Associations,” (2010) ([http://www.dfg.ca.gov/biogeodata/vegcamp/natural\\_communities.asp](http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp)). See Table 1 for an explanation of the Global and State Ranking.

Scientific Name	Common Name	Global & State Rank
<b>Woodland and Forest Alliances and Stands</b>		
<i>Abies grandis</i> Alliance	Grand fir forest	G4 S2
<i>Acer macrophyllum</i> Alliance	Bigleaf maple forest	G4 S3
<i>Alnus rubra</i> Alliance	Red alder forest	G5 S4
<i>Arbutus menziesii</i> Alliance	Madrone forest	G4 S3
<i>Callitropsis pigmaea</i> Alliance	Mendocino pygmy cypress woodland	G2 S2
<i>Chrysolepis chrysophylla</i> Alliance	Golden chinquapin thickets	G2 S2
<i>Lithocarpus densiflorus</i> Alliance	Tanoak forest	G4 S3
<i>Picea sitchensis</i> Alliance	Sitka spruce forest	G5 S2
<i>Pinus contorta</i> ssp. <i>contorta</i> Alliance	Beach pine forest	G5 S3
<b><i>Pinus muricata</i> Alliance</b>	<b>Bishop pine forest</b>	<b>G3 S3</b>
<b><i>Pseudotsuga menziesii</i> Alliance</b>	<b>Douglas fir forest</b>	<b>G5 S4</b>
<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> Alliance	Douglas fir - tanoak forest	G4 S4
<i>Sequoia sempervirens</i> Alliance	Redwood forest	G3 S3
<i>Tsuga heterophylla</i> Alliance	Western hemlock forest	G5 S2
<i>Umbellularia californica</i> Alliance	California bay forest	G4 S3
<b>Shrubland Alliances and Stands</b>		
<i>Arctostaphylos glandulosa</i> Alliance	Eastwood manzanita chaparral	G4 S4
<i>Arctostaphylos (nummularia, sensitiva)</i> Alliance	Glossy leaf manzanita chaparral	G2 S2
<i>Baccharis pilularis</i> Alliance	Coyote brushscrub	G5 S5
<i>Ceanothus thrysiflorus</i> Alliance	Blue blossom chaparral	G4 S4
<i>Corylus cornuta</i> var. <i>californica</i> Alliance	Hazelnut scrub	G3 S2?
<b><i>Frangula californica</i> Alliance</b>	<b>California coffee berry scrub</b>	<b>G4 S4</b>
<i>Garrya elliptica</i> Provisional Alliance	Coastal silk tassel scrub	G3? S3?
<i>Diplacis aurantiacus</i> Alliance	Bush monkeyflower scrub	G3 S3?
<i>Holodiscus discolor</i> Alliance	Ocean spray brush	G4 S3
<i>Morella californica</i> Alliance	Wax myrtle scrub	G3 S3
<i>Rhododendron neoglandulosum</i> Alliance	Western Labrador-tea thickets	G4 S2?
<i>Rhododendron occidentale</i> Provisional Alliance	Western azalea patches	G3 S2?
<i>Rosa californica</i> Alliance	California rose briar patches	G3 S3
<i>Rubus (parviflorus, spectabilis, ursinus)</i> Alliance	Coastal brambles	G4 S3
<i>Salix hookeriana</i> Alliance	Coastal dune willow thickets	G4 S3
<i>Sphagnum</i> Bog	Sphagnum bog	G3 S1.2
<i>Salix sitchensis</i> Provisional Alliance	Sitka willow thickets	G4 S3?
<i>Salix lasiolepis</i> Alliance	Arroyo willow thickets	G4 S4
<i>Toxicodendron diversilobum</i> Alliance	Poison oak scrub	G4 S4
<b>Herbaceous Alliances and Stands</b>		
<i>Abronia latifolia</i> – <i>Ambrosia chamissonis</i> Alliance	Dune mat	G3 S3
<i>Argentina egedii</i> Alliance	Pacific silverweed marshes	G4 S2
<i>Bulboschoenus maritimus</i> Alliance	Salt marsh bulrush marshes	G4 S3
<b><i>Calamagrostis nutkaensis</i> Alliance</b>	<b>Pacific reed grass meadows</b>	<b>G4 S2</b>
<i>Camassia quamash</i> Alliance	Small camas meadows	G4? S3?
<i>Carex obnupta</i> Alliance	Slough sedge swards	G4 S3
<i>Carex pansa</i> Alliance	Sand dune sedge swaths	G4? S3?
<i>Danthonia californica</i> Alliance	California oat grass prairie	G4 S3
<i>Deschampsia caespitosa</i> Alliance	Tufted hair grass meadows	G5 S4?
<i>Distichlis spicata</i> Alliance	Salt grass flats	G5 S4
<i>Eleocharis macrostachya</i> Alliance	Pale spike rush marshes	G4 S4
<i>Elymus glaucus</i> Alliance	Blue wild rye meadows	G3? S3?
<i>Festuca rubra</i> Alliance	Red fescue grassland	G4 S3?
<i>Festuca idahoensis</i> Alliance	Idaho fescue grassland	G4 S3?

<i>Glyceria occidentalis</i>	Northwest manna grass marshes	G3? S3?
<i>Grindelia (stricta)</i> Provisional Alliance	Gum plant patches	G3? S3?
<i>Hordeum brachyantherum</i> Alliance	Meadow barley patches	G4 S3?
<i>Juncus articus</i> (var. <i>balticus, mexicanus</i> )	Baltic and Mexican rush marshes	G5 S4
<i>Juncus effusus</i> Alliance	Soft rush marshes	G4 S4?
<i>Juncus (oxymeris, xiphioides)</i> Provisional Alliance	Iris-leaf rush seeps	G2? S2?
<i>Juncus lescurii</i> Alliance	Salt rush swales	G3 S2?
<i>Juncus patens</i> Provisional Alliance	Western rush marshes	G4? S4?
<i>Leymus mollis</i> Alliance	Sea lyme grass patches	G4 S2
<i>Leymus triticoides</i> Alliance	Creeping rye grass turfs	G4 S3
<i>Mimulus (guttatus)</i> Alliance	Common monkey flower seeps	G4? S3?
<i>Poa secunda</i> Alliance	Curley bluegrass grassland	G4 S3?
<i>Schoenoplectus acutus</i> Alliance	Hardstem bulrush marsh	G5 S4
<i>Schoenoplectus californicus</i> Alliance	California bulrush marsh	G5 S4?
<i>Scirpus microcarpus</i> Alliance	Small-fruited bulrush marsh	G4 S2
<i>Solidago canadensis</i> Provisional Alliance	Canada goldenrod patches	G4? S4?
<i>Woodwardia fimbriata</i>	Woodwardia thicket	G3 S3.2
<b>Aquatic Vegetation</b>		
<i>Azolla (filiculoides, mexicana)</i> Provisional Alliance	Mosquito fern mats	G4 S4
<i>Hydrocotyle (ranunculoides, umbellata)</i> Alliance	Mats of floating pennywort	G4 S3?
<i>Lemna (minor)</i> and Relatives Provisional Alliance	Duckweed blooms	G5 S4?
<i>Nuphar lutea</i> Provisional Alliance	Yellow pond-lily mats	G5 S3?
<i>Oenanthe sarmentosa</i> Alliance	Water-parsley marsh	G4 S2?
<i>Sarcocornia pacifica (Salicornia depressa)</i> Alliance	Pickleweed mats	G4 S3
<i>Sparganium (angustifolium)</i> Alliance	Mats of bur-reed leaves	G4 S3?
<i>Typha (angustifolia, domingensis, latifolia)</i> Alliance	Cattail marshes	G5 S5

**Table 3. Special-Status Animal with Potential for Occurrence in Coastal Mendocino County.** Species gleaned from the California Department of Fish and Wildlife's list, "Special Animals," (CDFW 2011). See Table 1 for an explanation of global and state rankings. An explanation of the field "Organization: Code" is at the end of the table.

Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<b>INVERTEBRATES</b>							
Snails, Slugs, and Abalone ( <i>GASTROPODA</i> )							
<i>Helminthoglypta arrosa pamoensis</i> Pomo bronze shoulderband	None	None	G2G3T1	S1	IUCN:DD	Found near the coast in heavily-timbered redwood canyons of Mendocino County, from Big River and Russian Gulch watersheds. Found under redwoods. Generally, in somewhat moist duff. Found in scrub in forest opening under a power line in Russian Gulch.	No. No redwood forest.
<i>Noyo interessa</i> Ten Mile shoulderband	None	None	G2	S2	None	Known from a few locations in Mendocino County with limited habitat information. Known from Ten Mile Dunes.	No. No dune habitat.
Beetles ( <i>INSECTA, Coleoptera</i> )							
<i>Caelus globosus</i> Globose dune beetle	None	None	G1	S1	IUCN:VU	Subterranean beetle that tunnels through sand under dune vegetation. Since coastal dune habitat in California is diminishing, the beetle is a special-status species.	None. No coastal dunes.
Butterflies & Moths ( <i>INSECTA, Hymenoptera</i> )							
<i>Lycaeides argyrognomon lotis</i> lotis blue butterfly	Endangered	None	G5TH	SH	XERCES:CI	Not seen since 1983, it is primarily from Mendocino County but historically from northern Sonoma and possibly Marin Counties. Inhabits wet meadows, damp coastal prairie, and potentially bogs or poorly-drained sphagnum-willow bogs where soils are waterlogged and acidic. Presumed host plant is <i>Hosackia gracilis</i> .	No good habitat. No host plants found.
<i>Speyeria zerene behrensii</i> Behren's silverspot butterfly	Endangered	None	G5T1	S1	XERCES:CI	Historically from near the City of Mendocino, Mendocino County, south to the area of Salt Point State Park, Sonoma County. Now presumed to be from Manchester south to Salt Point area. Inhabits coastal terrace prairie with caterpillar host plants: violet ( <i>Viola adunca</i> ) and adult nectar sources: thistles, asters, etc.	No. No native coastal terrace prairie habitat. No host plants found.
Ants, Bees, & Wasps ( <i>INSECTA, Hymenoptera</i> )							
<i>Bombus occidentalis</i> Western bumble bee	None	None	GU	S1	XERCES:IM	Populations in central California have declined since the 1990's. It visits flowers in a variety of habitats. Identified by a white patch on its abdomen hind tip. None recorded from coastal Mendocino County at <a href="http://www.xerces.org/bumblebees/">http://www.xerces.org/bumblebees/</a>	Potential habitat based on limited information.
<b>FISH</b>							
Lampreys ( <i>PETROMYZONTIDAE</i> )							
<i>Entosphenus tridentatus</i> Pacific lamprey	None	None	G5	S4	AFS:VU	Anadromous lamprey found in freshwater rivers around the Pacific Rim, from Japan to Baja California. Adult Pacific Lamprey spawn in habitat similar to salmon: low gradient stream reaches, in gravel, often at the tailouts of pools and riffles.	No suitable watercourses.
<i>Lampetra ayresii</i> river lamprey	None	None	G4	S4	AFS:VU DFG:SSC	Anadromous lamprey that uses riffle and side channel habitats for spawning and for ammocoete rearing where good water quality is essential. Adult Pacific Lamprey spawn in habitat similar to salmon: low gradient stream reaches, in gravel, often at the tailouts of pools and riffles.	No suitable watercourses.
Trout & Salmon ( <i>SALMONIDAE</i> )							
<i>Oncorhynchus gorboscha</i> pink salmon	None	None	G5	S1	DFG:SSC	Most spawn in intertidal or lower reaches of streams and rivers in Sept and Oct. and move further upstream in Sacramento River. Optimal temp = 5.6 to 14.4° C. Embryos and alevins require fast-flowing well oxygenated water for development and survival.	No suitable watercourses.
<i>Oncorhynchus kisutch</i> Coho salmon - central California coast ESU	Endangered	Endangered	G4	S2?	AFS:EN	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	No suitable watercourses.
<i>Oncorhynchus kisutch</i> Coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G4T2Q	S2?	AFS:TH DFG:SSC	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	No suitable watercourses.
<i>Oncorhynchus mykiss irideus</i> summer-run steelhead trout	None	None	G5T4Q	S2	DFG:SSC	Cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer.	No suitable watercourses.
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	Threatened	None	G5T2Q	S2	AFS:TH	Adult steelhead require high flows with water at least 18 cm deep for passage. They may leap up to ~3 m. For spawning, sufficient streamflow over clean gravel, cool water temperature, depth, and cover for escape (usually a deep pool with cover).	No suitable watercourses.

Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<i>Oncorhynchus mykiss irideus</i> steelhead-northern California DPS	Threatened	None	G5T2Q	S2	AFS:TH DFG:SSC	Cool, swift, shallow water and clean loose gravel for spawning.	No suitable watercourses.
<i>Oncorhynchus tshawytscha</i> chinook salmon – California coastal ESU	Threatened	None	G5	S2	AFS:TH	Adults depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27° C lethal to adults.	No suitable watercourses.
Minnnows & Carp (CYPRINIDAE)							
<i>Lavinia symmetricus navarroensis</i> Navarro roach	None	None	G5T1T2	S1S2	DFG:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams. Found in the lower, warmer reaches of streams in the Russian and Navarro River drainages.	No sufficient aquatic habitat.
<i>Lavinia symmetricus parvipinnis</i> Gualala roach	None	None	G5T1T2	S1S2	DFG:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams.	No sufficient aquatic habitat.
Gobies (GOBIIDAE)							
<i>Eucyclogobius newberryi</i> tidewater goby	Endangered	None	G3	S2S3	AFS:EN DFG:SSC IUCN:VU	Brackish water habitats along the California coast from Agua Hedionda lagoon, San Diego Co. 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.	No sufficient aquatic habitat.
<b>AMPHIBIANS &amp; REPTILES</b>							
Olympic salamanders (RHYACOTRITONIDAE)							
<i>Rhyacotriton variegatus</i> southern torrent (=seep) salamander	None	None	G3G4	S2S3	DFG:SSC IUCN:LC USFS:S	Found in Coastal redwood, Douglas fir, mixed conifer, montane riparian, and montane hardwood-conifer forests from northern California south to Point Arena. Aquatic habitat includes permanent cold creeks, streams and seepages with low water flow; associated with moss-covered rocks within trickling water and the splash zone of waterfalls; old-growth coniferous forests with closed canopy; <50% cobble in creeks, remainder mixture of pebble, gravel and sand.	No permanent aquatic habitat.
Tailed frogs (ASCAPHIDAE)							
<i>Ascaphus truei</i> Pacific tailed frog	None	None	G4	S2S3	DFG:SSC IUCN:LC	Occurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats. Coastal from Anchor Bay, Mendocino Co. to Oregon border. Cold, clear, rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for cover for adults, eggs, and larvae. After heavy rains, adults may be found in the woods away from the stream.	No sufficient aquatic habitat.
Frogs (RANIDAE)							
<i>Rana aurora aurora</i> northern red-legged frog	None	None	G4T4	S2?	DFG:SSC USFS:S	Found in humid forests, woodlands, grasslands, and streamsides in northwestern California. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season. Integration zone between northern and California species is between Manchester and Elk.	No. Out of range.
<i>Rana aurora draytonii</i> California red-legged frog	Threatened	None	G4T2T3	S2S3	DFG:SSC IUCN:VU	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	No breeding habitat. Low potential for upland use.
<i>Rana boylei</i> foothill yellow-legged frog	None	None	G3	S2S3	BLM:S DFG:SSC IUCN:NT USFS:S	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying.	No sufficient aquatic habitat.
Box & Water Turtles (EMYDIDAE)							
<i>Emys marmorata marmorata</i> western pond turtle	None	None	G3G4	S3	BLM:S DFG:SSC IUCN:VU USFS:S	Former scientific name: <i>Clemmys marmorata marmorata</i> . Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites. Nests sites may be found up to 0.5 km from water.	No sufficient aquatic habitat.
<b>BIRDS</b>							
Pelicans (PELECANIDAE)							
<i>Pelecanus occidentalis californicus</i> California brown pelican (nesting colony & communal roosts)	Delisted	Delisted	G4T3	S1S2	DFG:FP	Nest colonies are on offshore islands free of mammalian predators and human disturbance, are of sufficient elevation to prevent flooding of nests, and are associated with an adequate and consistent food supply. Brown pelicans roost communally, generally in areas that are near adequate food supplies, have some type of physical barrier to predation and disturbance, and provide some protection from environmental stresses such as wind and high surf.	No marine island habitat.

Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<b>Cormorants (PHALACROCORACIDAE)</b>							
<i>Phalacrocorax auritus</i> double-crested cormorant (nesting colony)	None	None	G5	S3	DFG:WL IUCN:LC	Rookery site: colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	No coastal cliffs or islands.
<b>Hérons, Egrets, and Bitterns (ARDEIDAE)</b>							
<i>Ardea alba</i> great egret (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. Breeding territory is limited to the immediate vicinity of nest, and is used for courtship and copulation as well as nesting. A monogamous, colonial nester.	No colonial nesting habitat.
<i>Ardea herodias</i> great blue heron (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	No rookery habitat.
<i>Egretta thula</i> snowy egret (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	No occurrence of aquatic habitat appropriate for nesting sites.
<b>Hawks, Kites, Harriers, &amp; Eagles (ACCIPITRIDAE)</b>							
<i>Accipiter cooperii</i> Cooper's hawk (nesting)	None	None	G5	S3	DFG:WL IUCN:LC	Nesting: woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Low potential for nesting.
<i>Accipiter gentilis</i> northern goshawk (nesting)	None	None	G5	S3	BLM:S CDF:S DFG:SSC IUCN:LC USFS:S	Nesting: within and in vicinity of coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodge pole pine, Jeffrey pine, and aspens are typical nest trees. Northern goshawks typically nest in conifer forests containing large trees and an open understory on the west slope of the Sierra. There is historic nesting in Big River and Pudding Creek. Winter migrant on the coast.	Low potential for nesting.
<i>Accipiter striatus</i> sharp-shinned hawk (nesting)	None	None	G5	S3	DFG:WL	Nesting: ponderosa pine, black oak, riparian deciduous, mixed conifer and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft. of water. Nests in dense, even-aged, single-layered forest canopy, usually nests in dense, pole and small-tree stands of conifers, which are cool, moist, well shaded, with little ground-cover, near water. Foraging: Uses dense stands in close proximity to open areas.	Low potential for nesting.
<i>Aquila chrysaetos</i> golden eagle (nesting & wintering)	None	None	G5	S3	CDF:S DFG:FP DFG:WL IUCN:LC USFWS:BCC	Nesting and wintering: rolling foothills mountain areas, sage-juniper flats, desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas. Nests on cliffs of all heights and in large trees in open areas. Alternative nest sites are maintained, and old nests are reused. Builds large platform nest, often 10 ft. across and 3 ft. high, of sticks, twigs, and greenery. Rugged, open habitats with canyons and escarpments used most frequently for nesting.	No nesting habitat.
<i>Buteo regalis</i> ferruginous hawk (wintering)	None	None	G4	S3S4	DFG:WL IUCN:LC USFWS:BCC	Usually east of the coastal belt, uncommon migrant in coastal Mendocino County seen in open areas such as Bald Hill and Manchester. Feeding habitat in open, treeless areas. Does not breed in California.	None.
<i>Circus cyaneus</i> Northern harrier (nesting)	None	None	G5	S3	DFG:SSC IUCN:LC	Northern harriers prefer sloughs, wet meadows, marshlands, swamps, prairies, plains, grasslands, and shrublands and perch on structures such as fence posts. Nesting habitat: nest on the ground, usually near water, or in tall grass, open fields, clearings, or on the water on a stick foundation, willow clump, or sedge tussock. Most nests built within patches of dense, often tall, vegetation (e.g., cattails) in undisturbed areas. They usually nest near hunting grounds. Foraging: They need open, low woody or herbaceous vegetation for nesting and hunting.	None.
<i>Elanus leucurus</i> white-tailed kite (nesting)	None	None	G5	S3	DFG:FP IUCN:LC	Nesting: rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland, open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. Winter congregation of at least 20 birds seen at Manchester State Park in early 2000's. One nest known from a THP in Albion ~2006; nest was at the edge of conifer forest with no pasture immediately adjacent.	None.

Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<i>Haliaeetus leucocephalus</i> bald eagle (nesting & wintering)	Delisted	Endangered	G5	S2	CDF:S DFG:FP IUCN:LC USFS:S USFWS:BCC	Nesting and wintering: ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter. Known from winter in Lake Cleone, MacKerricher State Park and Little River.	Breeding sites not known from coastal Mendocino.
<i>Pandion haliaetus</i> Osprey (nesting)	None	None	G5	S3	CDF:S DFG:WL IUCN:LC	Nesting: ocean shore, bays, fresh-water lakes, and larger streams. Large nests built in tree-tops within 6-7 to 15 miles of good fish-producing body of water. Flattened portions of partially broken off snags, trees, rocks, dirt pinnacles, cacti, and numerous man-made structures such as utility poles and duck blinds are used for nests. Furthest nest inland may be McGuire's Pond.	Potential nesting sites in tall trees. No nests observed.
Falcons (FALCONIDAE)							
<i>Falco columbarius</i> Merlin (wintering)	None	None	G5	S3	DFG:WL IUCN:LC	General wintering habitat: Uncommon winter migrants on the coast. Habitat apparently similar to breeding habitat, (open forest and grasslands). Regularly hunts prey (e.g., shorebirds) concentrated on tidal flats. Often winters in cities throughout its range, where frequently perches on buildings, power poles, and tall trees. Also winters in open woodland, grasslands, open cultivated fields, marshes, estuaries, and seacoasts. Frequents open habitats at low elevation near water and tree stands.	Low potential for wintering habitat.
<i>Falco peregrinus anatum</i> American peregrine falcon (nesting)	Delisted	Delisted	G4T3	S2	CDF:S DFG:FP USFWS:BCC	Nesting: near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	No nesting habitat.
Plovers & Relatives (CHARADRIIDAE)							
<i>Charadrius alexandrinus nivosus</i> western snowy plover (nesting)	Threatened	None	G4T3	S2	ABC:WL BCC DFG:SSC USFWS:BCC	Nesting: federal listing applies only to the pacific coastal population. Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting. Sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths are the preferred coastal habitats for nesting. Less common nesting habitat includes salt pans, coastal dredged spoil disposal sites, dry salt ponds, and salt pond levees and islands.	No coastal strand, open dune, or open river gravel bar habitat.
Oystercatchers (HAEMATOPODIDAE)							
<i>Haematopus bachmani</i> Black oystercatcher (nesting)	None	None	G5	S2	IUCN:LC USFWS:BCC	From the Aleutian Islands to Baja California, the forage on intertidal macroinvertebrates along gravel or rocky shores and in the southern part of their range nest primarily on rocky headlands and offshore rocks.	No rocky headlands or offshore rocks for nesting habitat.
Gulls & Terns (LARIDAE)							
<i>Larus californicus</i> California gull (nesting)	None	None	G5	S2	DFG:WL IUCN:LC	Colony nesters and usually occurring on an island or vegetated offshore rock.	No coastal island habitat.
Auklets, Puffins, & Relatives (ALCIDAE)							
<i>Brachyramphus marmoratus</i> marbled murrelet (nesting)	Threatened	Endangered	G3G4	S1	ABC:WL BCC CDF:S IUCN:EN	Nesting: feeds near-shore; nests inland along coast, from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir. Presence of platforms (flat surface at least four inches in diameter) appears to be the most important stand characteristic for predicting murrelet presence. Stands can be: 1) mature (with or without an old-growth component); 2) old-growth; 3) young coniferous forests with platforms; and 4) include large residual trees in low densities sometimes less than one tree per acre.	No large trees for nesting.
<i>Fratrercula cirrhata</i> tufted puffin (nesting colony)	None	None	G5	S2	DFG:SSC IUCN:LC	Nesting colony: open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs free of human disturbance and mammalian predators. Nests in burrows or rock crevices when sod or earth is unavailable for burrowing. Occurs year-round offshore near breeding colonies in northern California, but more common in winter. Breeding records from Goat Rock, Mendocino Headlands State Park.	No coastal island habitat.
Owls (STRIGIDAE)							
<i>Athene cunicularia</i> burrowing owl (burrow sites and some winter sites)	None	None	G4	S2	BLM:S DFG:SSC IUCN:LC USFWS:BCC	Burrow sites: open, dry annual or perennial grasslands, deserts and scrublands, and dunes characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	No ground squirrel burrows for nesting sites.



Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<i>Strix occidentalis caurina</i> northern spotted owl	Threatened	None	G3T3	S2S3	ABC:WLBC CDF:S DFG:SSC IUCN:NT	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests w/patches of big trees. High, multistory canopy dominated by big trees, many trees w/cavities or broken tops, woody debris, and space under canopy.	No nesting habitat.
Swifts (APODIDAE)							
<i>Chaetura vauxi</i> Vaux's swift (nesting)	None	None	G5	S3	DFG:SSC IUCN:LC	Nesting: redwood, Douglas fir, and other coniferous forests. Nests in large hollow trees and snags. Often nests in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes. The most important habitat requirement appears to be an appropriate nest-site in a large, hollow tree. Forages over most terrains and habitats, often high in the air. Shows an apparent preference for foraging over rivers and lakes.	Potential nesting habitat in large dead Bishop pines.
Hummingbirds (TROCHILIDAE)							
<i>Selasphorus rufus</i> rufous hummingbird (nesting)	None	None	G5	S1S2	IUCN:LC USFWS:BCC	Breeds in open or shrubby areas, forest openings, yards and parks, and sometimes in forests, thickets, and meadows. Late winter and spring migrant on the California coast. Breeding range from southeast Alaska and as far south as northwestern California.	Some potential appropriate habitat.
Selasphorus sasin Allen's hummingbird (nesting)	None	None			ABC:WLBC IUCN:LC USFWS:BCC	Breeds only along a narrow strip of coastal California and southern Oregon. Nests in densely vegetated areas and forests. An early migrant compared with most North American birds, arriving in summer breeding grounds as early as January. Breeds in moist coastal areas, scrub, chaparral, and forests. Winters in forest edge and scrub clearings with flowers.	Some potential appropriate habitat.
Woodpeckers (PICIDAE)							
<i>Picoides nuttallii</i> Nuttall's woodpecker (nesting)	None	None	G5	SNR	ABC:WLBC IUCN:LC	Ranging from west of the Cascade mountains and in the Sierra Nevada from southern Oregon to Northern Baja California. Nests are excavated in dead branches or snags of various trees, usually in close association with oak woodlands and riparian zone, habitat vulnerable to development. At least one Mendocino Coast record from 2011 Audubon Christmas Bird Count.	No nesting habitat, which is associated with oak woodlands inland from coast.
<i>Sphyrapicus ruber</i> red-breasted sapsucker	None	None	G5	SNR	None	Breeds primarily in coniferous forests, but also uses deciduous and riparian habitat, as well as orchards and power line corridors. The nest is a hole usually dug in a live deciduous tree (e.g. alder, willow, madrone) with possible preference for larger trees showing decay-softened wood.	No large deciduous trees.
Tyrant Flycatchers (TYRANNIDAE)							
<i>Contopus cooperi</i> olive-sided flycatcher (nesting)	None	None	G4	S4	ABC:WLBC DFG:SSC IUCN:NT USFWS:BCC	Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds. Tall standing dead trees are used as perch trees for catching flying insects. Accordingly, an open canopy is a key components of suitable habitat. Nest is an open cup of twigs, rootlets, and lichens, placed out near tip of horizontal branch of a tree.	Potential nesting site.
Swallows (HIRUNDINIDAE)							
<i>Progne subis</i> purple martin	None	None	G5	S3	DFG:SSC IUCN:LC	Nesting: inhabits woodlands, low elevation coniferous forest of Douglas fir, Ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures such as weep holes in bridges. Nest often located in tall, isolated trees and snags. Nesting on the Mendocino Coast known, in part, from Juan Creek, Ten Mile, Noyo, and Big River, and snags from Ten Mile River to Pudding Creek. Need open foraging habitats.	Low potential.
Wood-warblers (PARULIDAE)							

Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<i>Dendroica occidentalis</i> hermit warbler (nesting)	None	None	G4G5	S3?	ABC:WLBC IUCN:LC	Breeding range is relatively limited to the Pacific Coast and the Cascade and Sierra Nevada mountain ranges of Washington, Oregon, and California. Some winter along the coastal central and southern California, but most winter primarily in the mountains of western Mexico and Central America. Nesting habitats in Pacific northwest are coniferous forests with a high canopy volume, generally preferring mature stands of pine and Douglas fir. Avoids areas with a high deciduous volume; absent from riparian areas and clearcuts. Birds of coniferous forests; they prefer cool, wet fir forests at elevation, and moist forests of Douglas-fir, hemlock, and western red cedar closer to sea level. Major threat to this species appears to be the degradation of breeding habitat. Not know as frequently nesting on the coast, perhaps more common inland.	Some potential for nesting habitat.
Sparrows, Buntings, Warblers, & Relatives ( <i>EMBERIZIDAE</i> )							
<i>Ammodramus savannarum</i> grasshopper sparrow (nesting)	None	None	G5	S2	DFG:SSC IUCN:LC	Nesting: 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. Summer (breeding) resident in Mendocino County known from north of Ten Mile River.	None.
<i>Passerculus sandwichensis alaudinus</i> Bryant's savannah sparrow (nesting)	None	None	G5T2T3	S2S3	DFG:SSC	California endemic from near Humboldt Bay, Humboldt Co. to Morro Bay, San Luis Obispo Co. Breeds in low tidally influenced habitats in higher parts of pickleweed/saltgrass marshes, adjacent ruderal areas, moist grasslands within and just above the fog belt, bottomlands and dairy pastures in the taller grasses and rushes along roads and fences, and infrequently, drier grasslands. In moist upland grasslands, it occurs where herbaceous vegetation is relatively short, with no or little woody plant cover. Open areas, whether provided by tidal mudflats or upland interstitial areas between clumps of vegetation, appears to be an important component of occupied habitat.	None
Blackbirds ( <i>ICTERIDAE</i> )							
<i>Agelaius tricolor</i> tricolored blackbird (nesting colony)	None	None	G2G3	S2	ABC:WLBC BLM:S DFG:SSC IUCN:EN USFWS:BCC	Nesting colony: highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, such as cattails and foraging area with insect prey within a few km of the colony. Known inland from McGuire's Pond.	No nesting habitat.
Mammals							
Evening Bats ( <i>VESPERTILIONIDAE</i> )							
<i>Antrozous pallidus</i> pallid bat	None	None	G5	S3	BLM:S DFG:SSC IUCN:LC USFS:S WBWG:H	A wide variety of habitats deserts, grasslands, shrublands, woodlands and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. A yearlong resident in most of the range. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings where there is protection from high temperatures.	Some potential in dead Bishop pines.
<i>Corynorhinus townsendi</i> Townsend's big-eared bat	None	None	G4	S2S3	BLM:S DFG:SSC IUCN:LC USFS:S WBWG:H	Generally found in the dry uplands throughout the West, but also occur in mesic coniferous and deciduous forest habitats along the Pacific coast. Unequivocally associated with areas containing caves and cave-analogs for roosting habitat. Requires spacious cavern-like structures for roosting during all stages of its life cycle. Typically, they use caves and mines, but have been noted roosting in large hollows of redwood trees, attics and abandoned buildings, lava tubes, and under bridges. Extremely sensitive to disturbance.	No caves-analogs for roosting.
<i>Lasionycteris noctivagans</i> silver-haired bat	None	None	G5	S3S4	IUCN:LC WBWG:M	Ranges throughout California in coastal and montane forests. May be found anywhere in California during spring and fall migrations. Primarily a forest (tree-roosting) bat associated with north temperate zone conifer and mixed conifer/hardwood forests. Prefers forested (frequently coniferous) areas adjacent to lakes, ponds, and streams. During migration, sometimes occurs in xeric areas. Roosts in dead or dying trees with exfoliating bark, extensive vertical cracks, or cavities, rock crevices, and occasionally under wood piles, in leaf litter, under foundations, and in buildings, mines and caves. The primary threat is likely loss of roosting habitat due to logging practices that fail to accommodate the roosting needs of this species (e.g., clusters of large snags).	Dead trees with loose bark are potential roosting sites.

Scientific name Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<i>Lasiurus blossevillii</i> western red bat	None	None	G5	S3?	DFG:SSC IUCN:LC	Locally common in some areas of California from Shasta County south to the Mexican border. California Central Valley is the species' primary breeding region. Species appears to be strongly associated with riparian habitats for roosting and foraging, particularly mature stands/large diameter of cottonwood/sycamore. Roosts in woodland borders, rivers, agricultural areas, and urban areas with mature trees in the foliage of large shrubs and trees, usually sheltering on the underside of overhanging leaves. It often hangs from one foot on the leaf petiole and may resemble a fruit or dead leaf. Rarely observed roosting in mines.	Not good potential habitat.
<i>Lasiurus cinereus</i> hoary bat	None	None	G5	S4?	IUCN:LC WBWG:M	Most widespread North American bat. Solitary species that winters along the coast and in southern California. Roosts in foliage of trees near ends of branches. Blends with the bark of trees. Highly associated with forested habitats but can be found in suburbs with old, large trees.	Potential winter roosting sites.
<i>Myotis evotis</i> long-eared myotis	None	None	G5	S4?	BLM:S IUCN:LC WBWG:M	Widespread in California, but generally is believed to be uncommon in most of its range. It avoids the arid Central Valley and hot deserts, occurring along the entire coast and interior mountains. Found in nearly all brush, woodland, and forest habitats, from sea level to at least 9,000 ft., but coniferous woodlands and forests seem to be preferred. Roosts in loose bark in tall, open-canopied snags; stumps in south-facing clear-cuts with minimal vegetation overgrowth in younger forests, and conifer snags in older forests, rocks, caves, bridges and abandoned mines.	Potential roosting habitat under loose bark of dead trees.
<i>Myotis yumanensis</i> Yuma myotis	None	None	G5	S4?	BLM:S IUCN:LC WBWG:LM	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	No feeding areas over water or cave-analogs for roosting.
<b>Mountain Beavers (PLODONTIDAE)</b>							
<i>Aplodontia rufa nigra</i> Point Arena mountain beaver	Endangered	None	G5T1	S1	DFG:SSC IUCN:LC	Generally known from 2 miles north of Bridgeport Landing to 5 miles south of the town of Point Arena. Coastal areas often near springs or seepages; mesic coastal scrub, northern dune scrub, edges of conifer forests, and riparian plant communities. North facing slopes of ridges and gullies with friable soils and thickets of undergrowth.	Out of range.
<b>Mice, Rats, &amp; Voles (MURIDAE)</b>							
<i>Arborimus pomo</i> Sonoma tree vole	None	None	G3	S3	DFG:SSC IUCN:NT	Species split into red tree vole and Sonoma tree vole; approximate boundary between two species is Klamath River. Inhabits north coast fog belt from Oregon border to Sonoma Co. in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	Some potential habitat.
<b>Weasels &amp; Relatives (MUSTELIDAE)</b>							
<i>Martes americana humboldtensis</i> Humboldt marten	None	None	G5T2T3	S2S3	DFG:SSC USFS:S	Endemic to the coastal forests of northwestern California with a historical range described as "the narrow northwest humid coast strip, chiefly within the redwood belt" from the Oregon border to northern Sonoma county. However, the one known remnant Humboldt marten population occurs in the north-central portion of the described range in an area dominated by Douglas-fir and tanoak. Typically associated with closed-canopy, late-successional, mesic coniferous forests with complex physical structure near the ground. Very rare on the Mendocino coast.	Low potential.
<i>Martes pennanti (pacific)</i> DPS Pacific fisher	Candidate	None	G5	S2S3	BLM:S DFG:SSC USFS:S	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Use cavities, snags, logs and rocky areas for cover and denning. Need large areas of mature, dense forest. Very rare on the Mendocino coast.	Low potential.
<b>Sea Lions &amp; Fur Seals (OTARIIDAE)</b>							
<i>Arctocephalus townsendi</i> Guadalupe fur-seal	Threatened	Threatened	G1	S1	DFG:FP IUCN:NT	Solitary, non-social "eared" seals breed in the tropical waters off southern California/Mexico region but have been seen on rare occasion off Mendocino.	None.
<i>Callorhinus ursinus</i> northern fur-seal	None	None	G3	S1	IUCN:VU	Mostly pelagic seal ranging throughout the Pacific Rim, from Japan to the Channel Islands. Pacific rookeries in the Channel and Farallon Islands. Infrequent visitor to the Mendocino Coast. One was stranded on Albion flat in 2013 and rescued by the Marine Mammal Center.	None.

<i>Scientific name</i> Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
<i>Eumetopias jubatus</i> Steller (=northern) sea-lion	Threatened	None	G3	S2	IUCN:EN MMC:SSC	Range throughout the North Pacific Rim from Japan to central California. Unlike California sea lions, Stellers tend to remain off shore or haul out in unpopulated areas. Breeding rookery on Año Nuevo Island.	None.

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## Explanation of “Organization: Code” taken from CDFW 2011.

**ABC:** American Bird Conservancy – The United States WatchList is a joint project between the American Bird Conservancy and the National Audubon Society. It reflects a comprehensive analysis of all the bird species in the United States. It reveals those in greatest need of immediate conservation attention to survive a convergence of environmental challenges, including habitat loss, invasive species, and global warming. The list builds on the species assessments conducted for many years by Partners in Flight (PIF) for land birds. It uses those same PIF standards but it is expanded to cover all bird species, not just land birds. The list is based on the latest available research and assessments from the bird conservation community, along with data from the Christmas Bird Count and Breeding Bird Survey. More information is available at: <http://www.abcbirds.org/abcprograms/science/watchlist/index.html>

**WLBC** - United States WatchList of Birds of Conservation Concern

**AFS:** American Fisheries Society – Designations for freshwater and diadromous species were taken from the paper: Jelks, H.L., S.J. Walsh, N.M. Burkhead, S. Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J. J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33(8):372-407. Available at: [http://www.fisheries.org/afs/docs/fisheries/fisheries\\_3308.pdf](http://www.fisheries.org/afs/docs/fisheries/fisheries_3308.pdf) Designations for marine and estuarine species were taken from the paper: Musick, J.T. et al. 2000. “Marine, Estuarine, and Diadromous Fish Stocks at Risk of Extinction in North America (Exclusive of Pacific Salmonids). *Fisheries* 25(11):6-30. Available at: <http://www.flmnh.ufl.edu/fish/sharks/sawfish/Reprint1390.pdf>

**EN** - Endangered

**T** - Threatened

**VU** – Vulnerable

**BLM:** Bureau of Land Management – BLM Manual §6840 defines sensitive species as “...those species that are (1) under status review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats.” Existing California-BLM policy concerning the designation of sensitive species identifies two conditions that must be met before a species may be considered as BLM sensitive: (1) a significant population of the species must occur on BLM-administered lands, and (2) the potential must exist for improvement of the species’ condition through BLM management. The “Sensitive Species” designation is not meant to include federally listed species, proposed species, candidate species or State-listed species. It is BLM policy to provide sensitive species with the same level of protection that is given federal candidate species. The list is available at: [http://www.blm.gov/ca/pdfs/pa\\_pdfs/biology\\_pdfs/SensitiveAnimals.pdf](http://www.blm.gov/ca/pdfs/pa_pdfs/biology_pdfs/SensitiveAnimals.pdf)

**S** - Sensitive

**CDFW:** California Department of Fish and Wildlife – The name California Department of Fish and Game (CDFG, or DFG) was changed to the California Department of Fish and Wildlife in 2013 and the changes are reflected here. It is the goal and responsibility of the Department of Fish and Game to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as “Species of Special Concern” because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as “Species of Special Concern” is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability. Not all “Species of Special Concern” have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a “Threatened” or “Endangered” species under the State and/or Federal Endangered Species Acts. More information is available at: <http://www.nrm.dfg.ca.gov/fileHandler.ashx?DocumentID=3778> The 1995 report for fish, the 1994 report for amphibians and reptiles and the 1986 & 1998 reports for mammals are available on-line.

Fish: [http://www.dfg.ca.gov/wildlife/nongame/publications/docs/fish\\_ssc.pdf](http://www.dfg.ca.gov/wildlife/nongame/publications/docs/fish_ssc.pdf)

Amphibians & Reptiles: [http://www.dfg.ca.gov/wildlife/nongame/publications/docs/herp\\_ssc.pdf](http://www.dfg.ca.gov/wildlife/nongame/publications/docs/herp_ssc.pdf)

Mammals: [http://www.dfg.ca.gov/wildlife/nongame/publications/bm\\_research/docs/86\\_27.pdf](http://www.dfg.ca.gov/wildlife/nongame/publications/bm_research/docs/86_27.pdf)

<http://www.dfg.ca.gov/wildlife/nongame/ssc/1998mssc.html>

Updates of all three reports are in preparation. Information on the Amphibian and Reptile Species of Special Concern report is available at: <http://arssc.ucdavis.edu>

Information on the mammal report is available at: <http://www.dfg.ca.gov/wildlife/nongame/ssc/mammals.html> and

<http://www.dfg.ca.gov/wildlife/nongame/ssc/docs/mammal/MSSCProjectTimeline.pdf>

A new California Bird Species of Special Concern report was completed in 2008. More information is available at:

<http://www.dfg.ca.gov/wildlife/species/ssc/birds.html>

A new category of “Taxa to Watch” was created in the new California Bird Species of Special Concern report. The birds on this Watch List are 1) not on the current Special Concern list but were on previous lists and they have not been state listed under CESA; 2) were previously state or federally listed and now are on neither list; or 3) are on the list of “Fully Protected” species. More information and brief accounts for each species is available in the report.

**DFG (CDFW):** Fully Protected: The classification of Fully Protected was the State’s initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts; white-tailed kite, golden eagle, trumpeter swan, northern elephant seal and ring-tailed cat are the exceptions. The white-tailed kite and the golden eagle are tracked in the CNDDDB; the trumpeter swan, northern elephant seal and ring-tailed cat are not.

The Fish and Game Code sections dealing with Fully Protected species state that these species “...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected” species, although take may be authorized for necessary scientific research. This language arguably makes the “Fully Protected” designation the strongest and most restrictive regarding the “take” of these species. In 2003 the code sections dealing with fully protected species were amended to allow the Department to authorize take resulting from recovery activities for state-listed species. More information on Fully Protected species and the take provisions can be found in the Fish and Game Code, (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 2, Article 4, §5.93. The category of Protected Amphibians and Reptiles in Title 14 has been repealed. The Fish and Game Code is available online at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=fgc&codebody=&hits=20>. Title 14 of the California Code of Regulations is available at: <http://ccr.oal.ca.gov/linkedSlice/default.asp?SP=CCR-1000&Action=Welcome>

**FP** - Fully Protected

**SSC** - Species of Special Concern

**WL** - Watch List

**CDF:** California Department of Forestry & Fire Protection – The Board of Forestry classifies as “sensitive species” those species that warrant special protection during timber operations. The list of “sensitive species” is given in §895.1 (Definitions) of the California Forest Practice Rules. The 2010 Forest Practice Rules are available at:

[http://www.fire.ca.gov/resource\\_mgmt/downloads/2010\\_FP\\_Rulebook\\_w-Diagrams\\_wo-TechRule\\_No1.pdf](http://www.fire.ca.gov/resource_mgmt/downloads/2010_FP_Rulebook_w-Diagrams_wo-TechRule_No1.pdf)

**S** - Sensitive

**IUCN:** International Union for Conservation of Nature – provides objective, scientifically-based information on the current status of globally threatened biodiversity. More information at <http://www.iucnredlist.org/technical-documents/categories-and-criteria>; detailed information on the IUCN and the Red List is available at: <http://www.redlist.org/>

**CD** - Conservation Dependent

**CR** - Critically Endangered

**DD** - Data Deficient

**EN** - Endangered

**LC** - Least Concern

**NT** - Near Threatened

**VU** - Vulnerable

**MMC:** Marine Mammal Commission – Section 202 of the Marine Mammal Protection Act directs the Marine Mammal Commission, in consultation with its Committee of Scientific Advisors, to make recommendations to the Department of Commerce, the Department of the Interior, and other federal agencies on research and management actions needed to conserve species of marine mammals. To meet this charge, the Commission devotes special attention to particular species and populations that are vulnerable to various types of human-related activities, impacts, and contaminants. Such species may include marine mammals listed as endangered or threatened under the Endangered Species Act or as depleted under the Marine Mammal Protection Act. In addition, the Commission often directs special attention to other species or populations of marine mammals not so listed whenever special conservation challenges arise that may affect them. More information on the Marine Mammal Protection Act and the Species of Special Concern list is available at: <http://www.mmc.gov/species>

**SSC:** Species of Special Concern

**NMFS:** National Marine Fisheries Service – National Oceanic and Atmospheric Administration (NOAA): The Office of Protected Resources (OPR) is a headquarters program office of NOAA’s National Marine Fisheries Service (NOAA Fisheries Service, or NMFS), under the U.S. Department of Commerce, with responsibility for protecting marine mammals and endangered marine life. NOAA’s Office of Protected Resources works to conserve, protect, and recover species under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) in conjunction with our Regional offices, Science Centers, and various partners. The category Species of Concern was established by the (NMFS) effective 15 April 2004. Species of Concern are those species about which NOAA’s National Marine Fisheries Service (NMFS) has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act (ESA). Proactive attention and conservation action is drawn to these species. “Species of concern” status does not carry any procedural or substantive protections under the ESA. More information is available at: <http://www.nmfs.noaa.gov/pr/species/concern>

**SC:** Species of Concern

**USFS:** United States Forest Service - USDA Forest Service defines sensitive species as those plant and animal species identified by a regional forester that are not listed or proposed for listing under the federal Endangered Species Act for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species’ existing distribution. Regional Foresters shall identify sensitive species occurring within the region. California is the Pacific Southwest Region (Region 5). The list of sensitive animals for Region 5 is undergoing revision. The anticipated completion date was spring 2009, however it still has not been updated in spring 2010. The sensitive designation on this list is based on the previous list. More information is available at: <http://www.fs.fed.us/r5/projects/sensitive-species/>

**USFWS:** United States Fish and Wildlife Service – The goal of the Birds of Conservation Concern 2008 report is to accurately identify the migratory and nonmigratory bird species (beyond those already designated as Federally threatened or endangered) that

represent our highest conservation priorities and draw attention to species in need of conservation action. We hope that by focusing attention on these highest priority species, this report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. This report is available at: [http://library.fws.gov/Bird\\_Publications/BCC2008.pdf](http://library.fws.gov/Bird_Publications/BCC2008.pdf)  
**BCC** - Birds of Conservation Concern

**WBWG**: Western Bat Working Group - comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Species designated as "High Priority" are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats. More information is available at: <http://www.wbwg.org>  
**H** - High Priority  
**LM** - Low-Medium  
**M** - Medium Priority  
**MH** - Medium-High Priority

**XERCES**: The Xerces Society is an international non-profit organization dedicated to protecting biological diversity through invertebrate conservation. Their core programs focus on endangered species, native pollinators, and watershed health. More information on the Red list is available at: <http://www.xerces.org/>  
**CI** - Critically Imperiled  
**DD** - Data Deficient  
**IM** - Imperiled  
**VU** - Vulnerable

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## Appendix B. References

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**Appendix C. List of All Plant Species Documented in the Study Area.**

**Appendix A List of All Plant Species Documented in the Study Area.**

GROUP	SCIENTIFIC NAME	COMMON NAME	NATIVE
<b>FERNS AND ALLIES</b>			
	Dennstaedtiaceae		
	Pteridium aquilinum var. pubescens	bracken; western bracken	Y
	Dryopteridaceae		
	Polystichum munitum	western sword fern	Y
	Polypodiaceae		
	Polypodium californicum	California polypody	Y
	Pteridaceae		
	Pentagramma triangularis	gold-back fern	Y
<b>GYMNOSPERMS</b>			
	Pinaceae		
	Pinus muricata	bishop pine; prickly-cone pine	Y
	Pseudotsuga menziesii var. menziesii	Douglas-fir	Y
	Taxodiaceae		
	Sequoia sempervirens	coast redwood	Y
<b>DICOTS</b>			
	Anacardiaceae		
	Toxicodendron diversilobum	poison oak	Y
	Apiaceae		
	Sanicula crassicaulis	Pacific sanicle, Gamble Weed	Y
	Aquifoliaceae		
	Ilex aquifolium	English holly	N
	Araliaceae		
	Hedera helix	English ivy	N
	Asteraceae		
	Baccharis pilularis	coyote brush	Y
	Hypochaeris radicata	rough cat's ear, hairy cat's ear	N
	Picris echioides	bristly ox tongue, bristly oxtongue	N
	Myosotis latifolia	wide-leaved forget-me-not	N
	Caprifoliaceae		
	Lonicera hispidula var. vacillans	hairy honeysuckle	Y
	Ericaceae		
	Arctostaphylos columbiana	redwood manzanita, hairy manzanita	Y
	Gaultheria shallon	salal	Y
	Rhododendron macrophyllum	California rose-bay	Y
	Rhododendron occidentale	western azalea	Y
	Vaccinium ovatum	California huckleberry	Y
	Fabaceae		
	Acacia decurrens	Black wattle	N
	Cytisus scoparius	Scotch broom	N
	Genista monspessulana	French broom	N
	Fagaceae		
	Lithocarpus densiflorus var. densiflorus	tanoak	Y



	Garryaceae		
	Garrya elliptica	coast silk tassel	Y
	Geraniaceae		
	Geranium sp.		
	Lamiaceae		
	Stachys rigida	rigid hedge-nettle	Y
	Myricaceae		
	Morella californica	wax-myrtle	Y
	Onagraceae		
	Epilobium ciliatum ssp. ciliatum	willowherb	Y
	Plantaginaceae		
	Plantago lanceolata	English plantain	N
	Polygonaceae		
	Rumex crispus	curly dock	N
	Primulaceae		
	Anagallis arvensis	scarlet pimpernel, poor man's weathervane	N
	Rhamnaceae		
	Frangula californica	California coffeeberry	Y
	Rosaceae		
	Cotoneaster pannosa	woolly cotoneaster	N
	Fragaria vesca	woodland strawberry	Y
	Rubus ursinus	California blackberry	Y
	Scrophulariaceae		
	Digitalis purpurea	purple foxglove	N
	Viscaceae		
	Arceuthobium campylopodum	western dwarf mistletoe	Y
<b>MONOCOTS</b>			
	Cyperaceae		
	Carex obnupta	slough sedge	Y
	Cyperus eragrostis	tall flatsedge	Y
	Iridaceae		
	Iris douglasiana	Douglas' iris	Y
	Juncaceae		
	Juncus effusus var. pacificus	Pacific common rush	Y
	Liliaceae		
	Allium triquetrum	three cornered leek, White flowered onion	N
	Orchidaceae		
	Goodyera oblongifolia	rattlesnake plantain	Y
	Poaceae		
	Anthoxanthum odoratum	sweet vernal grass	N
	Briza maxima	big quaking grass; rattlesnake grass	N
	Bromus carinatus	California brome	Y
	Calamagrostis nutkaensis	Pacific reedgrass	Y
	Cortaderia jubata	Pampas grass, Andes grass	N
	Cynosurus echinatus	hedgehog dogtail-grass; annual dogtail-grass	N
	Dactylis glomerata	orchard-grass	N
	Holcus lanatus	common velvetgrass	N
	Lolium multiflorum	Italian ryegrass	N

**Appendix D. Reduced Buffer Analysis.**

**Table 4. Sec. 20.496.020 ESHA -- Development Criteria.**

**(A) Buffer Areas.** A buffer area shall be established adjacent to all environmentally sensitive habitat areas. The purpose of this buffer area shall be to provide for a sufficient area to protect the environmentally sensitive habitat from degradation resulting from future developments and shall be compatible with the continuance of such habitat areas.

**(I) Width.** The width of the buffer area shall be a minimum of one hundred (100) feet, unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Game, and County Planning staff, that one hundred (100) feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the Environmentally Sensitive Habitat Areas and shall not be less than fifty (50) feet in width. New land division shall not be allowed which will create new parcels entirely within a buffer area. Developments permitted within a buffer area shall generally be the same as those uses permitted in the adjacent Environmentally Sensitive Habitat Area.

As discussed below, the width of the buffer area is determined to be 50 feet.

Standards for determining the appropriate width of the buffer area are as follows:

**(1a) Biological Significance of Adjacent Lands.**

Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. Functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance depends upon the habitat requirements of the species in the habitat area (e.g., nesting, feeding, breeding, or resting).

Where a significant functional relationship exists, the land supporting this relationship shall also be considered to be part of the ESHA, and the buffer zone shall be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer shall be measured from the edge of the wetland, stream, or riparian habitat that is adjacent to the proposed development.

No significant functional relationship exists between the Bishop pine forest and adjacent habitats that would justify considering them to be part of the ESHA. Bishop pines occur within the mixed coniferous forest. They may contribute to the genetic diversity of the species and may contribute seeds to the Bishop pine forest when openings occur.

**(1b) Sensitivity of Species to Disturbance.** The width of the buffer zone shall be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination shall be based on the following after consultation with the Department of Fish and Game or others with similar expertise:

(1b-i) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;

(1b-ii) An assessment of the short-term and long-term adaptability of various species to human disturbance;

(1b-iii) An assessment of the impact and activity levels of the proposed development on the resource.

Coast lily occurs adjacent to a seasonal spring within the Bishop pine forest. These components are likely those with the highest sensitivity to disturbance. A buffer distance of 50ft from the edge of the recovering portion of the Bishop pine forest precludes development within greater than 100ft of the spring and coast lily. Species composing the Bishop pine forest are common species, not individually sensitive or protected. Common species of avian wildlife that are expected to utilize the habitat area are adaptable to low levels of human disturbance. The continued use of the existing habitat by common species is expected to continue after the proposed development. Activities associated with use will not substantially change from historic levels of use in surrounding areas.

**Table 4. Sec. 20.496.020 ESHA -- Development Criteria.**

*(1c) Susceptibility of Parcel to Erosion. The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what degree the development will change the potential for erosion. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.*

Erosion control fencing should be installed along the western edge of the construction site at the 50ft buffer from the Bishop pine forest. The areas where developed is proposed have a southern aspect which slopes away the Bishop pine forest.

*(1d) Use of Natural Topographic Features to Locate Development. Hills and bluffs adjacent to ESHA's shall be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from ESHA's. Similarly, bluff faces should not be developed, but shall be included in the buffer zone.*

No topographic features are available to buffer sensitive areas from development.

*(1e) Use of Existing Cultural Features to Locate Buffer Zones. Cultural features (e.g., roads and dikes) shall be used, where feasible, to buffer habitat areas. Where feasible, development shall be located on the side of roads, dikes, irrigation canals, flood control channels, etc., away from the ESHA.*

No cultural features are available to buffer sensitive areas from development.

*(1f) Lot Configuration and Location of Existing Development. Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance shall be required as a buffer zone for any new development permitted. However, if that distance is less than one hundred (100) feet, additional mitigation measures (e.g., planting of native vegetation) shall be provided to ensure additional protection. Where development is proposed in an area that is largely undeveloped, the widest and most protective buffer zone feasible shall be required.*

Existing single family residence land use occurs along Fish Rock Road, including the parcels directly to the north, east and south of the subject parcels. A 50 foot buffer is the widest and most protective buffer zone feasible that would allow similar development.

*(1g) Type and Scale of Development Proposed. The type and scale of the proposed development will, to a large degree, determine the size of the buffer zone necessary to protect the ESHA. Such evaluations shall be made on a case-by-case basis depending upon the resources involved, the degree to which adjacent lands are already developed, and the type of development already existing in the area.*

The proposed development is a single family residence and associated infrastructure and is considered to be a moderate type of development in terms of scale and impact. A larger buffer area is not warranted by the scale of the proposed development.

*(2) Configuration. The buffer area shall be measured from the nearest outside edge of the ESHA (e.g., for a wetland from the landward edge of the wetland; for a stream from the landward edge of riparian vegetation or the top of the bluff).*

The buffer area is measured from the nearest outside edge of the area with Pacific reedgrass and California coffeeberry understory.

*(3) Land Division. New subdivisions or boundary line adjustments shall not be allowed which will create or provide for new parcels entirely within a buffer area.*

No new subdivisions or boundary line adjustments are proposed.