

OP-10: Biodiversity

Table Biodiversity -1: Special-Status Plant Species Known to Occur

Species	Federal Listing Status ¹	Status State Listing ¹	CRPR	Habitat	Potential for Occurrence ²
Blasdale's bent grass <i>Agrostis blasdalei</i>	–	–	1B.2	Coastal dunes, coastal bluff scrub, coastal prairie. Sandy or gravelly soil close to rocks; often in nutrient-poor soil with sparse vegetation. 16–1,198 feet in elevation. Blooms May–July.	May occur. The main residential campus contains coastal prairie habitat potentially suitable for this species.
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	–	–	1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 10–2,608 feet in elevation. Blooms March–June.	May occur. The main residential campus contains woodland and grassland habitat potentially suitable for this species.
Santa Cruz manzanita <i>Arctostaphylos andersonii</i>	–	–	1B.2	Broadleaved upland forest, chaparral, north coast coniferous forest. Open sites, redwood forest. 197–2,493 feet in elevation. Blooms November–May.	Known to occur. Santa Cruz manzanita has been documented within northern maritime chaparral habitat on the main residential campus and is a dominant species in some areas (UC Santa Cruz 2005a).
Santa Cruz Mountains pussypaws <i>Calyptidium parryi</i> var. <i>hesseae</i>	–	–	1B.1	Chaparral, cismontane woodland. Sandy or gravelly openings. 984–5,036 feet in elevation. Blooms May–August.	May occur. The main residential campus contains chaparral and woodland habitat potentially suitable for this species.
Bristly sedge <i>Carex comosa</i>	–	–	2B.1	Lake margins, wet places. 16–5,315 feet in elevation. Blooms May–September.	May occur. The main residential campus contains wetland habitat potentially suitable for this species.

Deceiving sedge <i>Carex saliniformis</i>	–	–	1B.2	Coastal prairie, coastal scrub, meadows and seeps, saltmarshes, and swamps. Mesic sites. 10–755 feet in elevation. Blooms June.	Known to occur. This species was thought to be extirpated from Santa Cruz County until several colonies were discovered in 2000 in forested areas on the UC Santa Cruz campus (Neubauer 2013).
Monterey spineflower <i>Chorizanthe pungens</i> <i>var. pungens</i>	FT	–	1B.2	Sandy soils in coastal dunes or more inland within chaparral or other habitats. 0–558 feet in elevation. Blooms April–June.	May occur. The main residential campus contains chaparral habitat potentially suitable for this species.
Scotts Valley spineflower <i>Chorizanthe robusta</i> <i>var. hartwegii</i>	FE	–	1B.1	Meadows, valley and foothill grassland. In grasslands with mudstone and sandstone outcrops. 344–804 feet in elevation. Blooms April–July.	May occur. The main residential campus contains grassland habitat potentially suitable for this species.
Robust spineflower <i>Chorizanthe robusta</i> <i>var. robusta</i>	FE	–	1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 30–804 feet in elevation. Blooms April–September.	May occur. The main residential campus contains woodland and chaparral habitat potentially suitable for this species.
San Francisco collinsia <i>Collinsia multicolor</i>	–	–	1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 98–820 feet in elevation. Blooms March–May.	May occur. The main residential campus contains forest habitat potentially suitable for this species.
Tear drop moss <i>Dacryophyllum</i> <i>falcifolium</i>	–	–	1B.3	North Coast coniferous forest. Limestone substrates and rock outcrops. 164–902 feet in elevation.	May occur. The main residential campus contains limestone soils.
Minute pocket moss <i>Fissidens pauperculus</i>	–	–	1B.2	Redwood. Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 33–3,360 feet in elevation.	May occur. The main residential campus contains redwood and stream habitat potentially suitable for this species.

Vaginulate grimmia <i>Grimmia vaginulata</i>	–	–	1B.1	Limestone. Chaparral. Openings; rocky, boulder and rock walls, carbonate. 2,247–3,724 feet in elevation.	May occur. The plan contains limestone soils.
Short-leaved evax <i>Hesperovax sparsiflora</i> <i>var. brevifolia</i>	–	–	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats. 0–705 feet in elevation. Blooms March–June.	May occur. The main residential campus contains coastal prairie habitat potentially suitable for this species.
Santa Cruz cypress <i>Hesperocyparis abramsiana</i> <i>var. abramsiana</i>	FT	SE	1B.2	Restricted to the Santa Cruz Mountains, on sandstone and granitic-derived soils; often with knobcone pine, redwoods. 984–3,560 feet in elevation.	May occur. The main residential campus contains forest habitat potentially suitable for this species.
Butano Ridge cypress <i>Hesperocyparis abramsiana</i> <i>var. butanoensis</i>	FT	SE	1B.2	Closed-cone coniferous forest, lower montane coniferous forest, chaparral. Sandstone. 1,312–1,608 feet in elevation.	May occur. The main residential campus contains forest and chaparral habitat potentially suitable for this species.
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT	SE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 33–722 feet in elevation. Blooms June–October.	May occur. The main residential campus contains grassland and coastal prairie habitat potentially suitable for this species.
Point Reyes horkelia <i>Horkelia marinensis</i>	–	–	1B.2	Sandy flats and dunes near coast; in grassland or scrub plant communities. 7–2,543 feet in elevation. Blooms May–September.	Known to occur. This species has been documented within the Marshall Fields complex in the north campus portion of the LRDP area (CNDDDB 2020). The main residential campus contains additional grassland habitat potentially suitable for this species.

Arcuate bush-mallow <i>Malacothamnus arcuatus</i>	–	–	1B.2	Chaparral, cismontane woodland. Gravelly alluvium. 3–2,411 feet in elevation. Blooms April–September.	May occur. The main residential campus contains chaparral and woodland habitat potentially suitable for this species.
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	–	–	3.2	Bare, grassy or rocky slopes. 148–2,707 feet in elevation. Blooms March–May.	May occur. The main residential campus contains grassland habitat potentially suitable for this species.
Marsh microseris <i>Microseris paludosa</i>	–	–	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 16–984 feet in elevation. Blooms April–June.	Known to occur. This species has been documented in the Marshall Fields complex in the north campus portion of the the main residential campus (CNDDDB 2020). The LRDP area contains forest and grassland habitat potentially suitable for this species.
Northern curly-leaved monardella <i>Monardella sinuata ssp. nigrescens</i>	–	–	1B.2	Coastal dunes, coastal scrub, chaparral, lower montane coniferous forest. Sandy soils. 0–984 feet in elevation. Blooms May–July.	May occur. The main residential campus contains chaparral and forest habitat potentially suitable for this species.
Woodland woollythreads <i>Monolopia gracilens</i>	–	–	1B.2	Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 328–3,937 feet in elevation. Blooms March–July.	May occur. The main residential campus contains grassland habitat potentially suitable for this species.
Kellman's bristle moss <i>Orthotrichum kellmanii</i>	–	–	1B.2	Sandstone outcrops with high calcium concentrations from eroded boulders out of non-calcareous sandstone bedrock. Rock outcrops in small openings within dense chaparral with overstory of scattered knobcone pine. 1,125–2,247 feet in elevation. Blooms January–February.	May occur. The main residential campus contains chaparral habitat potentially suitable for this species.

Dudley's lousewort <i>Pedicularis dudleyi</i>	–	SR	1B.2	Deep shady woods of older coast redwood forests; also in maritime chaparral. 197–2,953 feet in elevation. Blooms April–June.	May occur. The main residential campus contains redwood and chaparral habitat potentially suitable for this species.
Santa Cruz Mountains beardtongue <i>Penstemon rattanii</i> var. <i>kleei</i>	–	–	1B.2	Sandy shale slopes; sometimes in the transition between forest and chaparral. 1,312–3,609 feet in elevation. Blooms May–June.	May occur. The main residential campus contains forest and chaparral habitat potentially suitable for this species.
White-rayed pentachaeta <i>Pentachaeta bellidiflora</i>	FE	SE	1B.1	Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. 115–2,001 feet in elevation. Blooms March–May.	May occur. The main residential campus contains grassland habitat potentially suitable for this species.
Monterey pine <i>Pinus radiata</i>	–	–	1B.1	Closed-cone coniferous forest, cismontane woodland. Three primary stands are native to California. Dry bluffs and slopes. 197–410 feet in elevation.	May occur. While the main residential campus is not within the known primary stands of this species, the nearest known occurrence of this species is approximately 0.2 mile south of the LRDP area (CNDDDB 2020). The main residential campus contains forest habitat potentially suitable for this species.
White-flowered rein orchid <i>Piperia candida</i>	–	–	1B.2	Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and bogs. 148–5,299 feet in elevation. Blooms May–September.	May occur. The main residential campus contains forest habitat potentially suitable for this species.
Choris' popcornflower <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	–	–	1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 49–525 feet in elevation. Blooms March–June.	May occur. The main residential campus contains chaparral and coastal prairie habitat potentially suitable for this species.

San Francisco popcornflower <i>Plagiobothrys diffusus</i>	–	SE	1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 148–1,181 feet in elevation. Blooms March–June.	Known to occur. This species has been documented in the Marshall Fields complex in the north campus portion of the main residential campus (CNDDDB 2020). The main residential campus contains grassland and coastal prairie habitat potentially suitable for this species.
San Francisco champion <i>Silene verecunda</i> ssp. <i>verecunda</i>	–	–	1B.2	Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie. Often on mudstone or shale; one site on serpentine. 98–2,116 feet in elevation. Blooms March–June.	May occur. The main residential campus contains grassland, chaparral, and coastal prairie habitat potentially suitable for this species.
Santa Cruz microseris <i>Stebbinsoseris decipiens</i>	–	–	1B.2	Open areas in loose or disturbed soil, usually derived from sandstone, shale, or serpentine, on seaward slopes. 33–1,640 feet in elevation. Blooms April–May.	May occur. The main residential campus contains sandstone habitat potentially suitable for this species.
Santa Cruz clover <i>Trifolium buckwestiorum</i>	–	–	1B.1	Moist grassland. Gravelly margins. 344–2,001 feet in elevation. Blooms April–October.	Known to occur. This species has been documented in the Marshall Fields complex in the north campus portion of the the main residential campus (CNDDDB 2020). The main residential campus contains potentially grassland habitat.

<i>Pacific Grove clover</i> <i>Trifolium polyodon</i>	–	SR	1B.1	Along small springs and seeps in grassy openings. 16–394 feet in elevation. Blooms April–June.	Known to occur. This species has been documented in the Marshall Fields complex in the north campus portion of the main residential campus (CNDDDB 2020). The main residential campus contains seep habitat within grasslands potentially suitable for this species.
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Notes: CRPR = California Rare Plant Rank; CESA = California Endangered Species Act; CEQA = California Environmental Quality Act; ESA = Endangered Species Act; NPPA = Native Plant Protection Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected by ESA)

FT Federally Listed as Threatened (legally protected by ESA)

State:

SE State Listed as Endangered (legally protected by CESA)

SR State Listed as Rare (legally protected by NPPA)

California Rare Plant Ranks:

1A Plant species that are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

3 Plant species for which there is not enough information to assign the species to one of the other ranks or reject them.

Threat Ranks:

0.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)

0.2 Moderately threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

2 Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present because of poor habitat quality, lack of habitat features suitable for the species, or restricted current distribution of the species.

May occur: Habitat suitable for the species is available and there have been nearby recorded occurrences of the species.

Known to occur: The species has been observed within the LRDP area.

Sources: CNDDDB 2020; CNPS 2020; Kauffmann et al. 2015; Neubauer 2013

Table Biodiversity-2: Special-Status Wildlife Species Known to Occur in the Vicinity and Their Potential for Occurrence

Species	Federal Listing Status ¹	State Listing Status ¹	Habitat	Potential for Occurrence ²
Amphibians and Reptiles				
California giant salamander <i>Dicamptodon ensatus</i>	–	SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Known to occur. This species is known to breed within Cave Gulch and its tributaries and has been documented in the north campus portion of the LRDP area and within Empire Cave (Jones, pers. comm., 2020, CNDDDB 2020). Habitat potentially suitable for this species is present within stream and seep habitat and in wet upland areas throughout forested areas of the main residential campus .
California red-legged frog <i>Rana draytonii</i>	FT	SSC	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.	Known to occur. California red legged frog is known to occur within numerous locations in the southwestern portion of the main residential campus (e.g., within Moore Creek), and is known to breed in the Arboretum Pond (Biosearch Environmental Consulting 2020, CNDDDB 2020). Additional aquatic breeding habitat is present within two miles of the main residential campus(Biosearch Environmental Consulting 2020). The main residential campus contains approximately 970 acres of critical habitat for California red-legged frog.
Coast horned lizard <i>Phrynosoma blainvillii</i>	–	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	May occur. The nearest known occurrence of coast horned lizard is approximately 23 miles east of the main residential campus (CNDDDB 2020). Habitat potentially suitable for coast horned lizard is present within grasslands and open areas in chaparral and forest habitats.

Foothill yellow-legged frog West/Central Coast clade <i>Rana boylei</i>	–	SE	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. Need at least 15 weeks to attain metamorphosis.	Known to occur. There is a historic known occurrence of foothill yellow-legged frog in the main residential campus within stream habitat in Cave Gulch (1959), and approximately 1.9 miles north of the main residential campus (1931; CNDDDB 2020). Habitat potentially suitable for this species is present within stream habitat on the main residential campus.
Santa Cruz black salamander <i>Aneides niger</i>	–	SSC	Mixed deciduous and coniferous woodlands and coastal grasslands in San Mateo, Santa Cruz, and Santa Clara counties. Adults found under rocks, talus, and damp woody debris.	Known to occur. This species is known to occur within the main residential campus and has been documented near the Quarry Amphitheater and in Jordan Gulch (Jones, pers. comm., 2020, CNDDDB 2020). There are several additional occurrences within approximately 1 mile of the main residential campus (CNDDDB 2020).
Southwestern pond turtle <i>Actinemys pallida</i>	–	SSC	Aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.3 mile from water for egg-laying.	Known to occur. There is one known occurrence of southwestern pond turtle within the main residential campus in the Arboretum Pond (CNDDDB 2020). Aquatic habitat suitable for this species is present within stream habitat in the main residential campus, and upland habitat potentially suitable for the species is present within surrounding grasslands and open areas in chaparral and forested areas.
Birds				
American peregrine falcon <i>Falco peregrinus anatum</i>	FD	SD FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	May occur. There are no documented peregrine falcon nest sites within the main residential campus; however, there are many recent observations of the species within and adjacent to the main residential campus (CNDDDB 2020, eBird 2020). Habitat potentially suitable for nesting for this species is present on human-made structures or ledges in the main residential campus.

Bald eagle <i>Haliaeetus leucocephalus</i>	FD	SE FP	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.	May occur. There are no documented bald eagle nest sites within the LRDP area; however, there are many recent observations of the species within and adjacent to the main residential campus (CNDDDB 2020, eBird 2020). Habitat potentially suitable for nesting for this species is present within large trees in the main residential campus.
Black swift <i>Cypseloides niger</i>	–	SSC	Coastal belt of Santa Cruz and Monterey Co; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.	May occur. Black swifts are known to breed within ocean-facing cliffs and caves along the coast approximately 4 miles west of the main residential campus (CNDDDB 2020). While the main residential campus does not contain nesting habitat suitable for this species, black swifts may forage within the area.
Bryant's savannah sparrow <i>Passerculus sandwichensis alaudinus</i>	–	SSC	Restricted to a narrow coastal strip from Humboldt Bay south to the Morro Bay area. This sparrow occupies low tidally influenced habitats, adjacent ruderal areas, moist grasslands within and just above the fog belt, and, infrequently, drier grasslands.	Known to occur. The main residential campus is within the range of this species, and habitat potentially suitable for the species is present within grasslands in the main residential campus. Bryant's savannah sparrow has been observed breeding within IAA and has been observed during the breeding season in the Great Meadow and East Meadow (Jones, pers. comm., 2020).
Burrowing owl <i>Athene cunicularia</i>	–	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Known to occur. Burrowing owls are known to occur within two locations in the southern portion of the main residential campus (CNDDDB 2020). Habitat potentially suitable for this species is present within grasslands and open areas within chaparral habitat in the main residential campus.

Golden eagle <i>Aquila chrysaetos</i>	–	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	May occur. There are no documented golden eagle nest sites within the area; however, there are many recent observations of the species within and adjacent to the main residential campus (CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for this species is present within large trees in the area.
Loggerhead shrike <i>Lanius ludovicianus</i>	–	SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	May occur. There are no known loggerhead shrike nesting sites within the area; however, there have been many recent observations of the species within and adjacent to the main residential campus (CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for this species is present within chaparral habitat in the main residential campus.
Mountain plover <i>Charadrius montanus</i>	–	SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	Not expected to occur. The main residential campus is outside of the known range of this species.
Northern harrier <i>Circus hudsonius</i>	–	SSC	Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	May occur. There are no documented northern harrier nesting occurrences within the main residential campus; however, the species is common within the area, and there have been many recent observations of the species within and adjacent to the main residential campus (Jones, pers. comm., 2020, CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for northern harrier is present within grassland habitat in the main residential campus.

Olive-sided flycatcher <i>Contopus cooperi</i>	–	SSC	Nesting habitats are mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine. Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes, or other open terrain.	Known to occur. Olive-sided flycatchers have been observed nesting within forest habitat in upper campus (Jones, pers. comm., 2020). Additionally, there have been many recent observations of the species within and adjacent to the main residential area (eBird 2020). Nesting habitat potentially suitable for this species is present within redwood and other forested habitat in the area.
Purple martin <i>Progne subis</i>	–	SSC	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. Nest often located in tall, isolated tree/snag.	May occur. There are no known purple martin nesting occurrences within the main residential campus; however, there have been many recent observations of the species within and adjacent to the area (CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for this species is present within forested habitat and human made structures in the main residential campus.
Tricolored blackbird <i>Agelaius tricolor</i>	–	ST SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	May occur. The nearest known tricolored blackbird nesting colony is located in Antonelli Pond, directly adjacent to the Westside Research Park (CNDDDB 2020). Additionally, there have been many recent observations of the species within and adjacent to the area (eBird 2020). Nesting habitat potentially suitable for tricolored blackbird is present adjacent to aquatic habitat in the area.
Vaux's swift <i>Chaetura vauxi</i>	–	SSC	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.	May occur. There are no known Vaux's swift nesting occurrences within the area; however, there have been many recent observations of the species within and adjacent to the area (CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for this species is present within redwood and other forested habitat in the main residential campus.

White-tailed kite <i>Elanus leucurus</i>	-	FP	Rolling foothills and 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.	Known to occur. White-tailed kite nests have been documented within redwood forest habitat, in the UC Santa Cruz Arboretum and Botanic Garden, and in the central campus portion of the LRDP area (Jones, pers. comm., 2020, CNDDDB 2020). Additionally, there have been many recent observations of the species within and adjacent to the area (eBird 2020). Nesting habitat potentially suitable for this species is present within forested and riparian areas in the area.
Yellow warbler <i>Setophaga petechia</i>	-	SSC	Riparian forest, riparian scrub, riparian woodland. Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	May occur. There are no known yellow warbler nesting occurrences within the area; however, there have been many recent observations of the species within and adjacent to the main residential campus (CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for this species is present within riparian habitat in the main residential campus.
Yellow-breasted chat <i>Icteria virens</i>	-	SSC	Riparian forest, riparian scrub, riparian woodland. Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	May occur. There are no known yellow-breasted chat nesting occurrences within the main residential campus; however, there have been many recent observations of the species within and adjacent to the area (CNDDDB 2020, eBird 2020). Nesting habitat potentially suitable for this species is present within riparian habitat in the main residential campus.

Invertebrates

Dolloff cave spider ³ <i>Meta dolloff</i>	–	–	Limestone. Known from caves in the Santa Cruz area. This species is an orb-weaver and occurs from the cave mouth into deep twilight.	Known to occur. This species is known to occur within cave habitat in the main residential campus and has also been identified within soil pits surrounding the UC Santa Cruz Forest Ecology Research Plot in the north campus portion of the main residential campus, indicating that the species may occur within other non-cave habitats (Krohn and Jones 2020).
Empire Cave amphipod ³ <i>Stygobromus imperialis</i>	–	–	Aquatic. Endemic to Empire Cave in Santa Cruz County	Known to occur. This species is known to occur within cave habitat in the main residential campus.
Empire Cave <i>psuedoscorpion</i> ³ <i>Fissilicreagris imperialis</i>	–	–	Limestone. Known only from Empire Cave in Santa Cruz County.	Known to occur. This species is known to occur within cave habitat in the main residential campus.
MacKenzie's Cave amphipod ³ <i>Stygobromus mackenziei</i>	–	–	Aquatic, limestone. Known only from Empire Cave. A metamorphosed limestone cave subject to intermittent flooding.	Known to occur. This species is known to occur within cave habitat in the main residential campus.
Monarch butterfly - California overwintering population <i>Danaus plexippus pop. 1</i>	–	–	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (Eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Known to occur. Monarch butterflies are known to overwinter in trees within the UC Santa Cruz Arboretum and Botanic Garden. Habitat potentially suitable for this species is present within forested areas and tree groves throughout the area.

<p>Ohlone tiger beetle <i>Cicindela ohlone</i></p>	<p>FE</p>	<p>–</p>	<p>Remnant native grasslands with California oatgrass (<i>Danthonia californica</i>) and purple needlegrass (<i>Stipa pulchra</i>) in Santa Cruz County. Substrate is poorly-drained clay or sandy clay soil over bedrock of Santa Cruz mudstone.</p>	<p>Known to occur. Ohlone tiger beetle is known to occur in lower campus within the grassland/coastal prairie area in the southwest corner of the main residential campus west of Empire Grade, including IAA (one of the preserves established for the Ranch View Terrace HCP), and within the Marshall Fields complex in north campus (Arnold 2020, Jones, pers. comm., 2020). The species has potential to occur within portions of the main residential campus that contain grassland or coastal prairie habitats associated with Watsonville loam soils (Arnold 2020).</p>
<p>Santa Cruz telemid spider³ <i>Telema sp.</i></p>	<p>–</p>	<p>–</p>	<p>Limestone. Known from caves in the Santa Cruz area.</p>	<p>Known to occur. This species is known to occur within cave habitat in the main residential area.</p>
<p>Mammals</p>				
<p>American badger <i>Taxidea taxus</i></p>	<p>–</p>	<p>SSC</p>	<p>Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.</p>	<p>Known to occur. Over 100 feeding digs associated with American badgers have been observed within the main residential campus, including within Great Meadow and the UC Santa Cruz Arboretum and Botanical Garden in lower campus (Jones, pers. comm., 2020). Additionally, an American badger carcass was recovered in 2004 within grassland habitat in the main residential campus (CNDDDB 2020). The main residential campus contains grassland and open chaparral and forest habitats potentially suitable for this species.</p>

Mountain lion <i>Puma concolor</i>	–	SC	Mountain lions inhabit a wide range of ecosystems, including mountainous regions, forests, deserts, and wetlands. Mountain lions establish and defend large territories and can travel large distances in search of prey or mates. The Central Coast and Southern California Evolutionarily Significant Units (ESUs) were granted emergency listing status in April of 2020, and CDFW is currently reviewing a petition to list these ESUs as threatened under CESA.	Known to occur. Mountain lions have been documented traversing through the main residential campus, and it is likely that the area comprises a portion of the home range for many individual lions (Santa Cruz Puma Project 2020). While there are no known mountain lion dens within the main residential campus, potential den habitat (e.g., caves, cavities, thickets) may be present within less developed portions of the main residential campus.
Pallid bat <i>Antrozous pallidus</i>	–	SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	May occur. The nearest known historic (1928) occurrence of this species is approximately 4 miles east of the main residential campus (CNDDDB 2020). Roost habitat potentially suitable for this species is present in the main residential campus within rock areas and large trees.
Ringtail <i>Bassariscus astustus</i>	–	FP	Riparian habitats, forest habitats, and shrub habitats in lower to middle elevations. Usually found within 0.6 mile of a permanent water source.	May occur. Habitat potentially suitable for ringtail is present within riparian areas and forested areas near streams and drainages in the main residential campus.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	–	SSC	Chaparral, redwood. Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	Known to occur. San Francisco dusky-footed woodrat nests have been observed within chaparral and forest habitats throughout the main residential campus, and the species is considered to be common within habitat areas suitable for the species (Jones, pers. comm., 2020). Habitat suitable for this species is present throughout chaparral, forest, and other wooded areas within the main residential campus.

Townsend's big-eared bat <i>Corynorhinus townsendii</i>	–	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	May occur. The nearest known historic (1945) occurrence of this species is approximately 1 mile southwest of the main residential campus (CNDDDB 2020). Roost habitat potentially suitable for this species is present within buildings, other human-made structures (e.g., bridges), and cave systems in the main residential campus.
Western red bat <i>Lasiurus blossevillei</i>	–	SSC	Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	May occur. There are no known occurrences of western red bat within the main residential campus; however, habitat potentially suitable for this species is present within forested portions of the main residential campus.

Notes: CNDDDB = California Natural Diversity Database; CEQA = California Environmental Quality Act

1 Legal Status Definitions

Federal:

- FE Federally Listed as Endangered (legally protected)
- FT Federally Listed as Threatened (legally protected)
- FD Federally Delisted

State:

- FP Fully protected (legally protected)
- SSC Species of special concern (no formal protection other than CEQA consideration)
- SE State Listed as Endangered (legally protected)
- ST State Listed as Threatened (legally protected)
- SC State Candidate for listing (legally protected)
- SD State Delisted

2 Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present because of poor habitat quality, lack of habitat features suitable for the species, or restricted current distribution of the species.

May occur: Habitat suitable for the species is available; however, there are little to no other indicators that the species might be present.

Known to occur: The species has been observed within the LRDP area.

3 Species associated with caves in the LRDP area are not listed under ESA or CESA; however, these species are considered locally important and potentially rare or endemic to the area.

Sources: CNDDDB 2020; eBird 2020; Jones, pers. comm., 2020; USFWS 2020a; Xerces 2018; Santa Cruz Puma Project 2020