# 5.4 BIOLOGICAL RESOURCES

This section of the EIR describes the affected environment and regulatory setting for biological resources. It also summarizes the results of biological field surveys of the project area and describes the potential impacts on biological resources that would result from implementation of the proposed project. This section also discusses the proposed project in the context of regional and local biological resources and addresses the potential impacts to biological resources that may occur as a result of project implementation. Additionally, this section provides mitigation measures that would reduce the impacts identified. The environmental setting, context, and impact analysis in this section are based on the following sources and technical studies:

- Shasta County. *Shasta County General Plan, 6.7 Fish and Wildlife Habitat*. Last amended 2004.
- Wildland Resource Managers. *Tierra Robles Oak Tree Assessment Study.* September 2012.
- Wildland Resource Managers. *The Oaks Resource of Tierra Robles.* 2015.
- Wildland Resource Managers. *Tierra Robles Oak Management Plan.* 2016.
- Wildland Resource Managers. *Tierra Robles Wildland Fuel/Vegetation Management Plan*. July 2015.
- Wildland Resource Managers. *Wetland Delineation for Chatham Ranch*. December 2008.
- Wildland Resource Managers. *Chatham Ranch Wetland Delineation Addendum*. May 2011.
- Wildland Resource Managers. *Chatham Ranch Biological Evaluation*. January 2005.
- Wildland Resource Managers. *Biological Review for Geringer's Capitol "Tierra Robles Ranch."* August 2016.
- Wildland Resource Managers. *Botanical Survey of Chatham Ranch*. April 11, 2005.
- ENPLAN. *Tierra Robles Biological Evaluation*. July 2012.
- UC Integrated Hardwood Range Management Program. *Oak Woodland Impact Decision Matrix*. 2008.
- S2~J2. *Oak Woodlands Mitigation Measures*. Memorandum to Shasta County. November 26, 2016.

Field studies were conducted in conformance with existing protocols for species of interest to identify any plant communities, listed plant species, listed wildlife species, and wildlife habitat present on the proposed biological resource study area. In addition to the field surveys, literature reviews were conducted to determine if sensitive biological resources have been recorded on or in the vicinity of the proposed project site. Data sources examined for the literature review included the California Natural Diversity Database (CNDDB), California Department of Fish and Wildlife (CDFW) Special-Status Animals List and BIOS database, California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants, soils records, wetland mapping, United States Fish and Wildlife (USFWS) records, and National Marine Fisheries Service (NMFS) records. The findings of the field survey and literature reviews are provided below.

## 5.4.1 ENVIRONMENTAL SETTING

### REGIONAL SETTING

The study area is located in unincorporated Shasta County, California. The undeveloped 715.4-acre proposed project site is situated approximately five miles east of the City of Redding, between the unincorporated communities of Bella Vista and Palo Cedro. The study area is characterized as a dissected plain located between the Klamath Mountains to the north and the Cascades to the east. The plain is highly dissected by streams that drain towards the Sacramento River.

The climate of the region is characterized as hot and sub-humid, and average precipitation is approximately 20 to 40 inches per year. Mean maximum temperature is approximately 64 degrees Fahrenheit (°F), and mean minimum temperature is approximately 52°F. Predominant upland vegetation communities within the region include: oak woodland, oak-pine woodland, oak savannah, chaparral, and annual grassland. Aquatic environments in the region include: seasonal and perennial streams that drain to the Sacramento River; vernal pools and other seasonal wetlands; freshwater marsh; groundwater seeps; and man-made ponds and reservoirs.

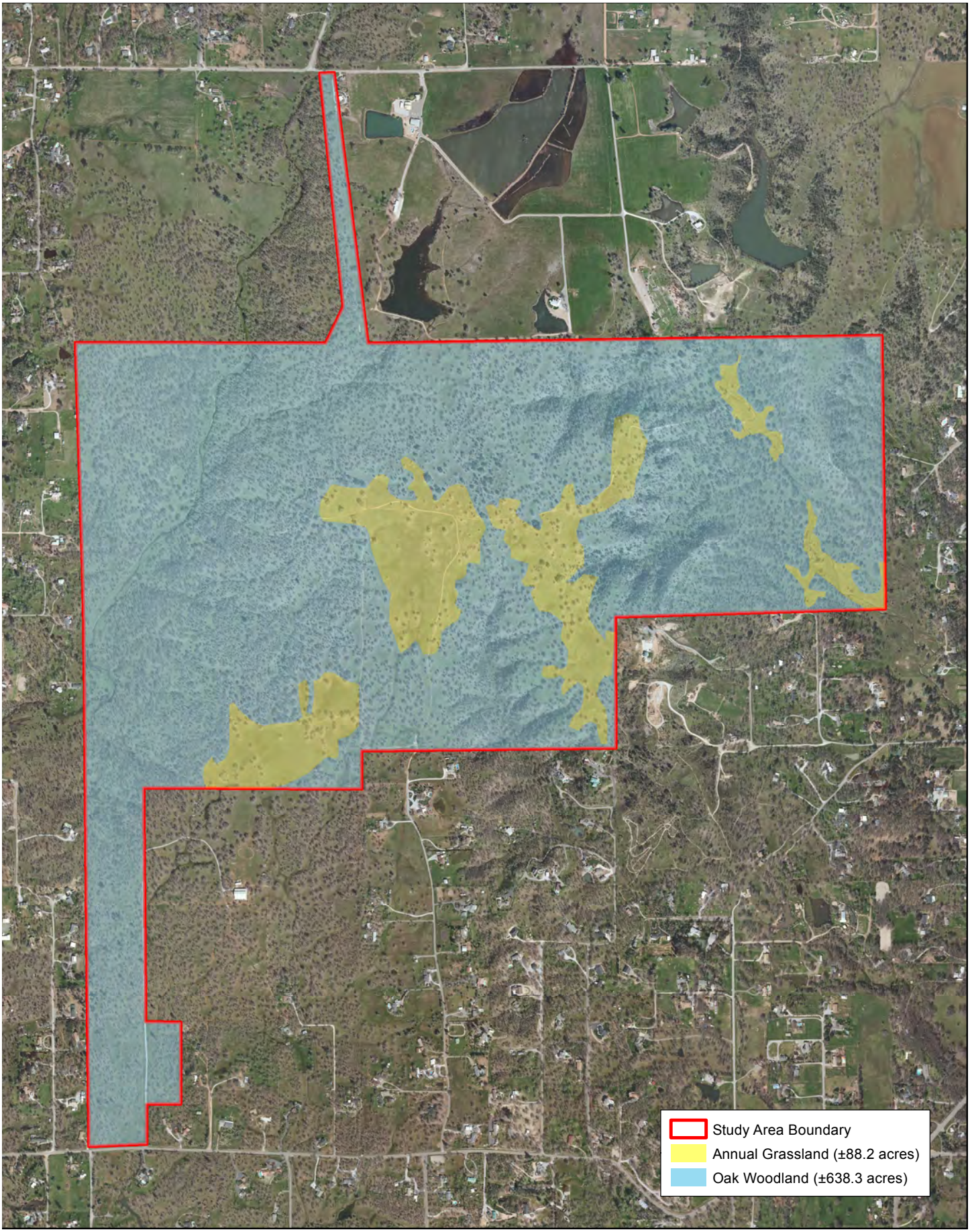
### EXISTING SITE CONDITIONS

The site is generally bounded by Old Alturas Road to the north and Boyle Road to the south and located 1.6 miles west of Deschutes Road. The site is characterized by level to rolling terrain in the western portion of the site, and steeper slopes and ridges are located in the eastern portion of the property, with elevations ranging from approximately 600 feet above mean sea level (msl) to 650 feet above msl. The climate of the project vicinity is of the Mediterranean type with cool, wet winters and hot, dry summers. Annual precipitation averages approximately 33.68 inches at the Redding Municipal Airport, approximately six miles to the southwest.

Eight soil units are present on the site: Anderson gravelly sandy loam, moderately deep; Churn gravelly loam, deep, 0-3 percent slopes; Clough gravelly loam, 3-8 percent slopes; Inks-Pentz complex, 30-50 percent slopes; Newtown gravelly loam, 8-15 percent slopes; Red Bluff gravelly loam, moderately deep, 0-3 percent slopes; Red Bluff gravelly loam, moderately deep, 3-8 percent slopes; and Redding-Red Bluff gravelly loams, 0-3 percent slopes. None of these soil units is hydric (i.e., capable of supporting wetlands). However, according to the Natural Resources Conservation Service, over half of these soils may contain hydric inclusions.

### EXISTING BIOLOGICAL COMMUNITIES

Natural Communities present on the proposed project site include annual grasslands, seasonal streams, riparian, oak woodlands, and wetlands (refer to Figure 5.4-1, PRIMARY HABITAT TYPES, and Figure 5.4-2, WATERS OF THE U.S. WITH STREAM CROSSING LOCATIONS). The following provides an overview of the existing onsite biological communities:



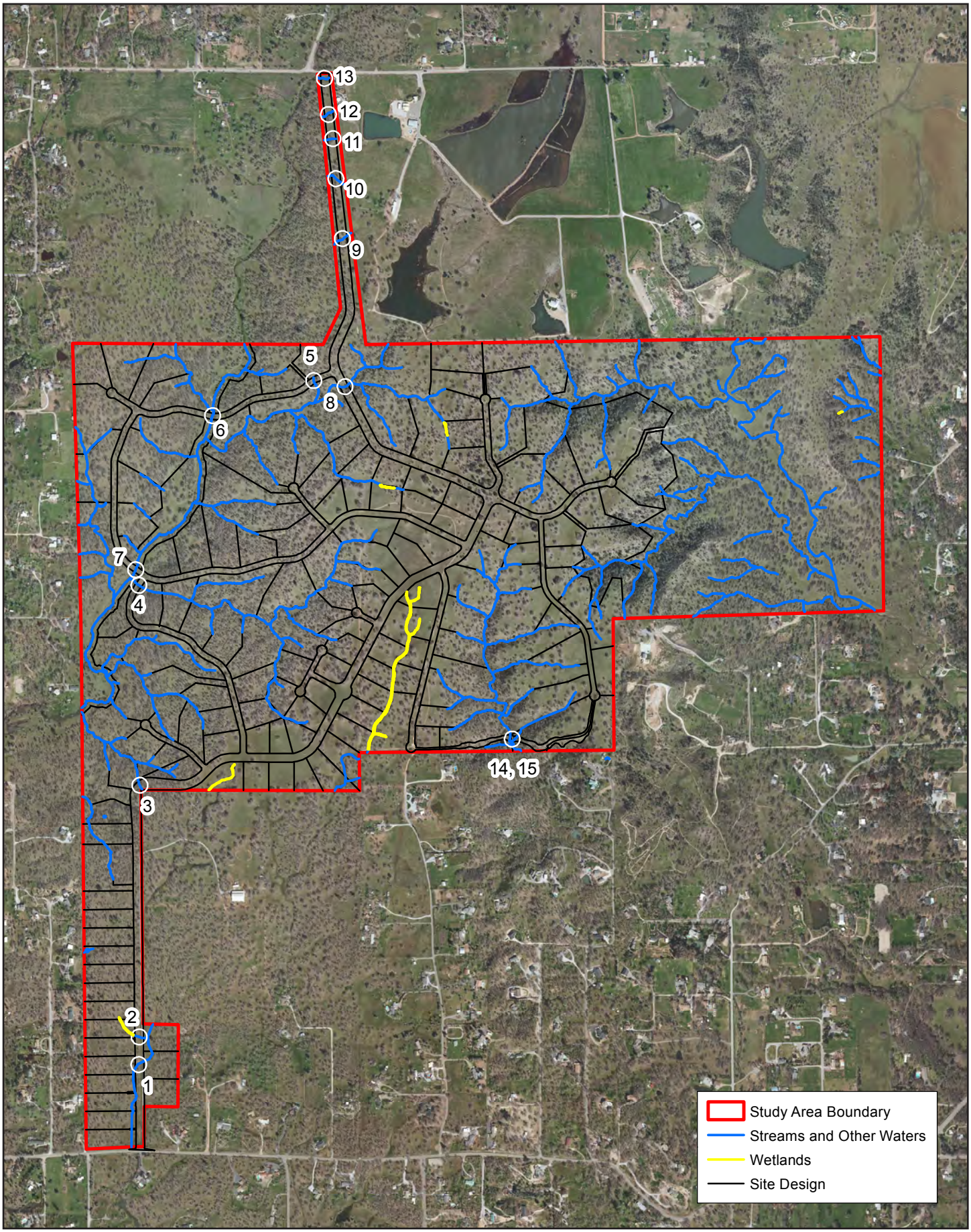

N.T.S.

SOURCE:

TIERRA ROBLES PLANNED DEVELOPMENT • EIR

# Primary Habitat Types

Figure 5.4-1




N.T.S.

SOURCE:

TIERRA ROBLES PLANNED DEVELOPMENT • EIR

# Waters of the U.S.

Figure 5.4-2

### Annual Grassland

Approximately 88 acres (12 percent) of the project site consists of annual grassland, which has been moderately disturbed by ranching and cattle grazing activities in the past. Grasses present on the proposed project site include, but are not limited to, soft chess, silver hair grass, rigput brome, annual rye grass, medusa head, vernal grass, red brome, foxtail fescue, and annual hairgrass. Blue oaks and gray pine are interspersed throughout the grassland. Chaparral honeysuckle and poison oak occasionally occur in close proximity to the oaks and pines.

The grassland has moderate values for wildlife species. The grassland provides habitat for a variety of mammals such as black-tailed deer, coyote, mice, gophers, and moles. Reptiles expected to utilize the grassland may include gopher snakes, rattlesnakes, and kingsnakes. The grassland may also provide potential nesting habitat for ground-nesting migratory birds such as killdeer and California quail, which were observed on the site during the field inspections. Pacific treefrogs were observed in pools associated with Clough Creek on the site.

### Seasonal Stream

The proposed project site is dissected by three major drainage systems including Clough Creek, which flows southwest across the northwestern corner of the property, an unnamed stream that flows south across the east-central portion of the project site, and a major unnamed drainage that flows from north to southeast across the eastern side of the project site. In addition, there are two small streams with attached tributaries which drain the central portion of the project site.

Clough Creek, an intermittent stream, features a fairly large watershed that originates several miles north of the project site and flows south, draining into Stillwater Creek 2.5 miles south of the project site. Stillwater Creek is a tributary to the Sacramento River, which is located approximately 7.5 miles downstream to the south-southeast. The Clough Creek drainage is highly dissected by short tributary drainages. These tributaries, ephemeral in nature, flow from the upland areas on the east and west of the drainage into the creek. The streambed consists primarily of pebble, gravel, and clay.

The unnamed stream that flows south across the east-central portion of the project site, originates as a shallow ephemeral stream in the north-central uplands of the project site, draining the tableland of that area. As the stream flows south, it falls into a fairly deep gorge that drains the eastern portion of the project area through a series of short ephemeral side streams. These streams converge to form an intermittent stream that flows south off the project site and ultimately drains into Little Cow Creek approximately 3 miles south of the project area. Little Cow Creek drains to Cow Creek, which is tributary to the Sacramento River, located approximately 10 miles downstream to the south.

The major unnamed drainage that flows from north to southeast across the eastern side of the project site flows intermittently during the rainy season and ultimately flows into Cow Creek, and then the Sacramento River.

The two smaller streams with associated tributaries in the central portion of the project site, flow for a limited duration following storm events and are part of the Stillwater Creek watershed.

Although no salmonids were observed during the field surveys, Clough Creek and the unnamed seasonal stream in the eastern portion of the site provide potential rearing/spawning habitat for salmonids during

spring and early summer when flows are adequate and water temperatures are below 77°F. Additionally, the streams support a variety of freshwater invertebrates, and the shallow waters and the relatively short duration of ponding provide marginally suitable breeding habitat for Pacific tree frogs and western toads. These streams also provide potential habitat for western pond turtles during spring and early summer. Standing pools in the unnamed seasonal stream that drains the eastern portion of the project site were inhabited by bluegill and mosquitofish. Common garter snakes may forage for frogs and toads along the seasonal streams; waterfowl may forage for invertebrates. The streams have moderate values to wildlife given the variety of species that may be present.

### Riparian

Along Clough Creek and the unnamed seasonal stream in the northeastern portion of the property, there are scattered individual of riparian plants interspersed with upland vegetation with annual grasses. Common species at these locations include willows, alders, California wild grape, Himalayan blackberry, and spike-rush. Other streams in the project site do not feature riparian habitat. Due to the minimal extent of the riparian vegetation onsite, riparian habitat is not mapped on Figure 5.4-1, PRIMARY HABITAT TYPES.

### Wetlands

Wetlands on the project site include wet swales located in the central and southern portions of the site, two seasonal ponds (associated with Clough Creek and the unnamed stream that flows from north to southeast across the eastern side of the project site), and a seep located in the eastern portion of the site. These water features provide some value to wildlife species given their large-ranging size (the largest is 11,543 square feet) and increased ponding duration. The wet swales support ostracods and caddisflies, and provides marginal breeding habitat for frogs. Similar to the wet swales, the ponds on the site have very low value to wildlife species given their very small size, shallow depth, and brief duration of ponding. The ponds provide marginal breeding habitat for frogs.

### Oak Woodland

Oak woodlands cover approximately 88 percent of the project site. The canopy of this woodland consists primarily of blue oaks, interior live oaks, and grey pine. In most areas, annual grasses and forbs comprise the understory with patches of manzanita, coffeeberry, and poison oak being the predominant shrubs. Within the steeper draws of the drainage in the northeast corner of the property the vegetation is dominated by interior live oak with a scattered mid-story of poison oak, coffee berry, and manzanita. This woodland generally has very little dead and downed woody debris, and few snags. The plant species composition and structure of the oak woodland in the study area reasonably approximates the general description of this habitat type. Oak woodlands provide nesting habitat for a variety of migratory and resident birds, including scrub jays, acorn woodpeckers, northern flickers, oak titmice, western bluebirds, turkeys, red-tailed hawks, warblers, and many other species. Terrestrial salamanders (e.g., California slender salamander and ensatina) and western toads are occasionally found on moist soil beneath logs or fallen limbs. Western fence lizards and western skinks are particularly abundant, feeding on a variety of terrestrial insects, many of which inhabit decaying woody debris. Rattlesnakes, gopher snakes, and California kingsnakes are common in this woodland, feeding predominantly on mice and squirrels. Several species of bats are also known to roost in this woodland. Other mammals in this woodland type include black-tailed deer, black-tailed jackrabbit, and coyote.

## PLANT SPECIES

Table 5.4-1, PLANT SPECIES OBSERVED, includes a list of those plant species observed on the proposed project site.

**Table 5.4-1**
**PLANT SPECIES OBSERVED**

| Scientific Name | Common Name | Family Name |
|---|---|---|
| *Chlorogalum pomeridianum* var. *pomeridianum* | Wavy-leaved soap plant | Agavaceae |
| *Alisma triviale* | Northern water plantain | Alismataceae |
| *Allium amplectens* | Clasping onion | Alliaceae |
| *Amaranthus albus* | Tumbleweed | Amaranthaceae |
| *Toxicodendron diversilobum* | Poison oak | Anacardiaceae |
| *Daucus pusillus* | Rattlesnake weed | Apiaceae |
| *Eryngium articulatum* | Jointed coyote thistle | Apiaceae |
| *Lomatium caruifolium* var. *denticulatum* | Foothill lomatium | Apiaceae |
| *Lomatium utriculatum* | Bladder lomatium | Apiaceae |
| *Perideridia* sp. | Yampah | Apiaceae |
| *Sanicula bipinnata* | Poison sanicle | Apiaceae |
| *Sanicula bipinnatifida* | Purple sanicle | Apiaceae |
| *Sanicula crassicaulis* | Pacific sanicle | Apiaceae |
| *Torilis arvensis* | Field hedge-parsley | Apiaceae |
| *Asclepias cordifolia* | Purple milkweed | Apocynaceae |
| *Asclepias eriocarpa* | Indian milkweed | Apocynaceae |
| *Vinca major* | Greater periwinkle | Apocynaceae |
| *Hedera helix* | English ivy | Araliaceae |
| *Aristolochia californica* | Pipevine | Aristolochiaceae |
| *Achillea millefolium* | Common yarrow | Asteraceae |
| *Bidens* sp. | Sticktight | Asteraceae |
| *Carduus pycnocephalus* | Italian thistle | Asteraceae |
| *Centaurea solstitalis* | Yellow star thistle | Asteraceae |
| *Centromadia fitchii* | Fitch's spikeweed | Asteraceae |
| *Cichoruim intybus* | Chicory | Asteraceae |
| *Conyza* sp. | Horseweed | Asteraceae |
| *Eriophyllum lanatum* | Woolly sunflower | Asteraceae |
| *Gnaphalium* sp. | Cudweed | Asteraceae |
| *Gnaphalium palustre* | Western marsh cudweed | Asteraceae |
| *Grindelia camporum* | Hairy gumweed | Asteraceae |
| *Hypochaeris glabra* | Smooth cat's ear | Asteraceae |
| *Hypochaeris radicata* | Rough cat's ear | Asteraceae |
| *Lactuca serriola* | Prickly lettuce | Asteraceae |
| *Lagophylla glandulosa* | Glandular hareleaf | Asteraceae |
| *Leontodon saxatilis* | Hawbit | Asteraceae |
| *Logfia gallica* | Narrow-leaved cottonrose | Asteraceae |
| *Madia* sp. | Madia | Asteraceae |
| *Micropus californicus* var. *californicus* | Slender cottonweed | Asteraceae |
| *Microseris acuminata* | Sierra foothill microseris | Asteraceae |
| *Psilocarphus brevissimus* | Woolly marbles | Asteraceae |
| *Senecio vulgaris* | Old-man-in-the-spring | Asteraceae |
| *Soliva sessilis* | Lawn burweed | Asteraceae |
| *Solidago* sp. | Goldenrod | Asteraceae |
| *Sonchus asper* ssp. *asper* | Prickly sow thistle | Asteraceae |
| *Tragopogon dubius* | Goat's beard | Asteraceae |
| *Wyethia angustifolia* | Narrowleaf mule ears | Asteraceae |
| *Xanthium strumarium* | Cocklebur | Asteraceae |
| *Amsinckia intermedia* | Common fiddleneck | Boraginaceae |
| *Cryptantha flaccida* | Weak-stemmed cryptantha | Boraginaceae |
| *Eriodictyon californicum* | Yerba santa | Boraginaceae |
| *Heliotropium europaeum* | European pulsey | Boraginaceae |
| *Nemophila pedunculata* | Meadow nemophila | Boraginaceae |

## Table 5.4-1
## PLANT SPECIES OBSERVED

| Scientific Name | Common Name | Family Name |
|---|---|---|
| *Plagiobothrys austinae* | Austin's popcorn-flower | Boraginaceae |
| *Plagiobothrys fulvus* | Fulvous popcorn-flower | Boraginaceae |
| *Plagiobothrys greenei* | Greene's popcornflower | Boraginaceae |
| *Plagiobothrys nothofulvus* | Rusty popcorn-flower | Boraginaceae |
| *Plagiobothrys shastensis* | Shasta popcorn-flower | Boraginaceae |
| *Plagiobothrys stipitatus* | Small popcorn-flower | Boraginaceae |
| *Barbarea verna* | Early wintercress | Brassicaceae |
| *Capsella bursa-pastoris* | Shepherd's purse | Brassicaceae |
| *Hirschfeldia incana* | Shortpod mustard | Brassicaceae |
| *Raphanus raphanistrum* | Jointed charlock | Brassicaceae |
| *Sisymbrium officinale* | Oriental hedge mustard | Brassicaceae |
| *Thysanocarpus curvipes* | Lace pod | Brassicaceae |
| *Downingia cuspidata* | Cuspidate downingia | Campanulaceae |
| *Heterocodon rariflorum* | Western pearl-flower | Campanulaceae |
| *Lonicera interrupta* | Chaparral honeysuckle | Caprifoliaceae |
| *Cerastium glomeratum* | Mouse-eared chickweed | Caryophyllaceae |
| *Minuartia californica* | California sandwort | Caryophyllaceae |
| *Petrorhagia dubia* | Grass pink | Caryophyllaceae |
| *Scleranthus annuus* ssp. *annuus* | German knotgrass | Caryophyllaceae |
| *Silene gallica* | Common catchfly | Caryophyllaceae |
| *Spergularia rubra* | Ruby sand spurry | Caryophyllaceae |
| *Stellaria media* | Common chickweed | Caryophyllaceae |
| *Salsola tragus* | Russian thistle | Chenopodiaceae |
| *Calystegia occidentalis* | Western morning-glory | Convolvulaceae |
| *Convolvulus arvensis* | Bindweed | Convolvulaceae |
| *Crassula aquatica* | Water pygmy weed | Crassulaceae |
| *Marah* sp. | Man-root | Cucurbitaceae |
| *Carex barbarae* | Barbara sedge | Cyperaceae |
| *Carex densa* | Dense sedge | Cyperaceae |
| *Carex feta* | Green-sheathed sedge | Cyperaceae |
| *Carex multicaulis* | Many-stemmed sedge | Cyperaceae |
| *Cyperus eragrostis* | Nutsedge | Cyperaceae |
| *Eleocharis bella* | Least spikerush | Cyperaceae |
| *Eleocharis macrostachya* | Creeping spikerush | Cyperaceae |
| *Eleocharis engelmannii* var. *engelmannii* | Engelmann's spikerush | Cyperaceae |
| *Arctostaphylos viscida* | White-leaf manzanita | Ericaceae |
| *Chamaesyce maculata* | Spotted spurge | Euphorbiaceae |
| *Croton setigerus* | Dove weed | Euphorbiaceae |
| *Acacia dealbata* | Silver wattle | Fabaceae |
| *Albizia julibrissin* | Silk tree | Fabaceae |
| *Acmispon americanus* | Spanish lotus | Fabaceae |
| *Acmispon brachycarpus* | Hairy lotus | Fabaceae |
| *Acmispon wrangelianus* | Wrangel lotus | Fabaceae |
| *Cercis occidentalis* | Western redbud | Fabaceae |
| *Lathyrus angulatus* | Angular-seeded pea | Fabaceae |
| *Lupinus bicolor* | Bicolored lupine | Fabaceae |
| *Lupinus nanus* | Valley sky lupine | Fabaceae |
| *Medicago polymorpha* | California bur-clover | Fabaceae |
| *Robinia pseudoacacia* | Black locust | Fabaceae |
| *Trifolium depauperatum* | Cowbag clover | Fabaceae |
| *Trifolium dubium* | Little hop clover | Fabaceae |
| *Trifolium glomeratum* | Sessile-headed clover | Fabaceae |
| *Trifolium hirtum* | Rose clover | Fabaceae |
| *Trifolium incarnatum* | Crimson clover | Fabaceae |
| *Trifolium microcephalum* | Small-headed clover | Fabaceae |
| *Trifolium subterraneum* | Subterranean clover | Fabaceae |
| *Trifolium variegatum* | Variegated clover | Fabaceae |
| *Vicia sativa* | Garden vetch | Fabaceae |

## Table 5.4-1
## PLANT SPECIES OBSERVED

| Scientific Name | Common Name | Family Name |
|---|---|---|
| *Vicia villosa* | Winter vetch | Fabaceae |
| *Quercus douglasii* | Blue oak | Fagaceae |
| *Quercus lobata* | Valley oak | Fagaceae |
| *Quercus wislizeni* | Interior live oak | Fagaceae |
| *Centaurium tenuiflorum* | June centaury | Gentianaceae |
| *Cicendia quadrangularis* | Cicendia | Gentianaceae |
| *Zeltnera venusta* | Charming centaury | Gentianaceae |
| *Erodium botrys* | Long-beaked filaree | Geraniaceae |
| *Erodium cicutarium* | Red-stremmed filaree | Geraniaceae |
| *Geranium dissectum* | Cut-leaf geranium | Geraniaceae |
| *Geranium molle* | Dove's-foot geranium | Geraniaceae |
| *Hypericum mutilum* | Small-flowered St. John's-wort | Hypericaceae |
| *Hypericum perforatum* | Klamath weed | Hypericaceae |
| *Iris pseudacorus* | Paleyellow iris | Iridaceae |
| *Isoetes howellii* | Howell's quillwort | Isoetaceae |
| *Isoetes nuttallii* | Nuttall's quillwort | Isoetaceae |
| *Juglans hindsii* | Northern California black walnut | Juglandaceae |
| *Juncus acuminatus* | Sharp-fruited rush | Juncaceae |
| *Juncus bufonius* | Toad rush | Juncaceae |
| *Juncus capitatus* | Capitate rush | Juncaceae |
| *Juncus effusus* | Soft rush | Juncaceae |
| *Juncus leiospermus* var. *leiospermus* | Red Bluff dwarf rush | Juncaceae |
| *Juncus phaeocephalus* var. *paniculatus* | Panicled rush | Juncaceae |
| *Juncus tenuis* | Slender rush | Juncaceae |
| *Luzula comosa* var. *laxa* | Hairy wood rush | Juncaceae |
| *Marrubium vulgare* | Horehound | Lamiaceae |
| *Mentha pulegium* | Pennyroyal | Lamiaceae |
| *Monardella* sp. | Monardella | Lamiaceae |
| *Pogogyne zizyphoroides* | Sacramento pogogyne | Lamiaceae |
| *Trichostema lanceolatum* | Vinegar weed | Lamiaceae |
| *Limnanthes alba* ssp. *versicolor* | White meadowfoam | Lamiaceae |
| | | |
| *Linum bienne* | Pale flax | Linaceae |
| *Lythrum hyssopifolia* | Hyssop loosestrife | Lythraceae |
| *Malva* sp. | Mallow | Malvaceae |
| *Sidalcea asprella* | Checker bloom | Malvaceae |
| *Marsilea vestita* ssp. *vestita* | Hairy water fern | Marsileaceae |
| *Pilularia americana* | American pillwort | Marsileaceae |
| *Mollugo verticillata* | Green carpetweed | Molluginaceae |
| *Calandrinia ciliata* | Red maids | Montiaceae |
| *Montia fontana* | Water chickweed | Montiaceae |
| *Morus* sp. | Mulberry | Moraceae |
| *Anagallis arvensis* | Scarlet pimpernel | Myrsinaceae |
| *Eucalyptus* sp. | Gum tree | Myrtaceae |
| *Fraxinus latifolia* | Oregon ash | Oleaceae |
| *Syringa* sp. | Lilac | Oleaceae |
| *Clarkia purpurea* | Four-spot | Onagraceae |
| *Epilobium densiflorum* | Dense flowered spike-primrose | Onagraceae |
| *Epilobium torreyi* | Torrey's spike-primrose | Onagraceae |
| *Ludwigia* sp. | Yellow waterweed | Onagraceae |
| *Castilleja attenuata* | Valley tassels | Orobanchaceae |
| *Cordylanthus* sp. | Bird's-beak | Orobanchaceae |
| *Parentucellia viscosa* | Yellow parentucellia | Orobanchaceae |
| *Pedicularis densiflora* | Indian warrior | Orobanchaceae |
| *Triphysaria eriantha* | Johnny tuck | Orobanchaceae |
| *Oxalis corniculata* | Creeping wood-sorrel | Oxalidaceae |
| *Eschscholzia californica* | California poppy | Papaveraceae |
| *Eschscholzia lobbii* | Frying pan poppy | Papaveraceae |
| *Phytolacca americana* | Pokeweed | Pinaceae |

## Table 5.4-1
## PLANT SPECIES OBSERVED

| Scientific Name | Common Name | Family Name |
|---|---|---|
| *Pinus sabiniana* | Grey pine | Pinaceae |
| *Callitriche heterophylla* | Variable-leaved water-starwort | Plantaginaceae |
| *Gratiola ebracteata* | Hedge hyssop | Plantaginaceae |
| *Keckiella breviflora* | Short-flowered keckiella | Plantaginaceae |
| *Kickxia elatine* | Sharp-leaved fluellin | Plantaginaceae |
| *Plantago erecta* | Hooker's plantain | Plantaginaceae |
| *Plantago lanceolata* | English plantain | Plantaginaceae |
| *Veronica anagallis-aquatica* | Water speedwell | Plantaginaceae |
| *Veronica peregrina* ssp. *xalapensis* | Purslane speedwell | Plantaginaceae |
| *Aira caryophyllea* | Silver hairgrass | Poaceae |
| *Andropogon virginicus* var. *virginicus* | Broomsedge bluestem | Poaceae |
| *Anthoxanthum aristatum* | Vernal grass | Poaceae |
| *Avena barbata* | Slender wild oats | Poaceae |
| *Avena fatua* | Wild oats | Poaceae |
| *Briza maxima* | Big quaking grass | Poaceae |
| *Briza minor* | Little quaking grass | Poaceae |
| *Bromus diandrus* | Ripgut grass | Poaceae |
| *Bromus hordeaceus* | Soft chess | Poaceae |
| *Bromus madritensis* ssp. *rubens* | Red brome | Poaceae |
| *Bromus sterilis* | Poverty brome | Poaceae |
| *Bromus tectorum* | Downy brome | Poaceae |
| *Cortaderia selloana* | Uruguayan pampas grass | Poaceae |
| *Cynodon dactylon* | Bermuda grass | Poaceae |
| *Cynosurus echinatus* | Hedgehog dogtail | Poaceae |
| *Dactylis glomerata* | Orchard grass | Poaceae |
| *Deschampsia danthonioides* | Annual hairgrass | Poaceae |
| *Elymus caput-medusae* | Medusa head | Poaceae |
| *Elymus glaucus* ssp. *glaucus* | Blue wild rye | Poaceae |
| *Elymus multisetus* | Big squirreltail | Poaceae |
| *Eragrostis curvula* | Weeping lovegrass | Poaceae |
| *Festuca arundinacea* | Tall fescue | Poaceae |
| *Festuca bromoides* | Six-weeks fescue | Poaceae |
| *Festuca microstachys* | Reflexed fescue | Poaceae |
| *Festuca myuros* | Foxtail fescue | Poaceae |
| *Festuca perennis* | Annual ryegrass | Poaceae |
| *Gastridium phleoides* | Nit grass | Poaceae |
| *Glyceria occidentalis* | Western mannagrass | Poaceae |
| *Holcus lanatus* | Common velvet grass | Poaceae |
| *Hordeum marinum* ssp. *gussoneanum* | Mediterranean barley | Poaceae |
| *Hordeum murinum* ssp. *leporinum* | Hare wall barley | Poaceae |
| *Leersia oryzoides* | Rice cutgrass | Poaceae |
| *Melica californica* | California melic | Poaceae |
| *Panicum* sp. | Old witch grass | Poaceae |
| *Paspalum dilatatum* | Dallis grass | Poaceae |
| *Phleum pratense* | Cultivated timothy | Poaceae |
| *Poa annua* | Annual bluegrass | Poaceae |
| *Poa compressa* | Canadian bluegrass | Poaceae |
| *Polypogon maritimus* | Mediterranean beardgrass | Poaceae |
| *Polypogon monspeliensis* | Annual beardgrass | Poaceae |
| *Scribneria bolanderi* | Scribner grass | Poaceae |
| *Secale cereale* | Rye | Poaceae |
| *Setaria viridis* | Bristly foxtail | Poaceae |
| *Sorghum halepense* | Johnson grass | Poaceae |
| *Stipa pulchra* | Purple needlegrass | Poaceae |
| *Triticum aestivum* | Wheat | Poaceae |
| *Navarretia intertexta* ssp. *intertexta* | Needle-leaf navarretia | Poaceae |
| *Navarretia leucocephala* | White-flowered navarretia | Polemoniaceae |
| *Navarretia tagetina* | Marigold navarretia | Polemoniaceae |
| *Eriogonum nudum* | Naked buckwheat | Polygonaceae |

**Table 5.4-1**
**PLANT SPECIES OBSERVED**

| Scientific Name | Common Name | Family Name |
|---|---|---|
| *Polygonum* sp. | Smartweed | Polygonaceae |
| *Rumex acetosella* | Sheep sorrel | Polygonaceae |
| *Rumex crispus* | Curly dock | Polygonaceae |
| *Rumex pulcher* | Fiddle dock | Polygonaceae |
| *Rumex salicifolius* | Willow dock | Polygonaceae |
| *Portulaca oleracea* | Common purslane | Portulacaceae |
| *Primula hendersonii* | Henderson's shooting star | Primulaceae |
| *Pentagramma triangularis* ssp. *triangularis* | Goldback fern | Pteridaceae |
| *Delphinium* sp. | Larkspur | Ranunculaceae |
| *Ranunculus aquatilis* | Water buttercup | Ranunculaceae |
| *Ranunculus muricatus* | Prickle-fruited buttercup | Ranunculaceae |
| *Ranunculus occidentalis* | Western buttercup | Ranunculaceae |
| *Ranunculus sceleratus* | Cursed buttercup | Ranunculaceae |
| *Ceanothus cuneatus* var. *cuneatus* | Buckbrush | Rhamnaceae |
| *Frangula californica* ssp. *tomentella* | California buckthorn | Rhamnaceae |
| *Prunus* sp. | Prunus | Rosaceae |
| *Prunus dulcis* | Almond | Rosaceae |
| *Pyracantha* sp. | Pyracantha | Rosaceae |
| *Rosa* sp. *(horticultural)* | Rose | Rosaceae |
| *Rubus armeniacus* | Himalayan blackberry | Rosaceae |
| *Poterium sanguisorba* | Garden burnet | Rosaceae |
| *Crucianella angustifolia* | Cross-wort | Rubiaceae |
| *Galium parisiense* | Wall bedstraw | Rubiaceae |
| *Galium porrigens* var. *tenue* | Climbing bedstraw | Rubiaceae |
| *Sherardia arvensis* | Field madder | Rubiaceae |
| *Populus fremontii* ssp. *fremontii* | Fremont cottonwood | Salicaceae |
| *Salix exigua* | Sandbar willow | Salicaceae |
| *Salix gooddingii* | Goodding's black willow | Salicaceae |
| *Salix laevigata* | Red willow | Salicaceae |
| *Salix lasiandra* var. *caudata* | Pacific willow | Salicaceae |
| *Salix lasiolepis* | Arroyo willow | Salicaceae |
| *Acer saccharinum* | Silver maple | Sapindaceae |
| *Aesculus californica* | California buckeye | Sapindaceae |
| *Verbascum blattaria* | Moth mullein | Scrophulariaceae |
| *Verbascum thapsus* | Woolly mullein | Scrophulariaceae |
| *Ailanthus altissima* | Tree of heaven | Simaroubaceae |
| *Odontostomum hartwegii* | Hartweg's odontostomum | Tecophilaeaceae |
| *Brodiaea californica* | California brodiaea | Themidaceae |
| *Brodiaea minor* | Small brodiaea | Themidaceae |
| *Dichelostemma multiflorum* | Round-toothed ookow | Themidaceae |
| *Triteleia hyacinthina* | Wild hyacinth | Themidaceae |
| *Typha* sp. | Cattail | Typhaceae |
| *Vitis californica* | Wild grape | Vitaceae |
| *Tribulus terrestris* | Puncture vine | Zygophyllaceae |

Sources: ENPLAN. Botanical Field Surveys on May 9, May 10, May 23, June 1, and June 5, 2012; and March 7, 2014. Wildland Resource Managers. Botanical Survey of Chatham Ranch. April 11, 2005.

## WILDLIFE

Table 5.4-2, ANIMAL SPECIES OBSERVED, includes a list of those animal species observed on the proposed project site.

## Table 5.4-2
## ANIMAL SPECIES OBSERVED

| Scientific Name | Common Name | Status |
|---|---|---|
| **Birds** | | |
| *Melanerpes formicivorus* | Acorn woodpecker | None |
| *Melanerpes lewis* | Lewis woodpecker | None |
| *Corvus brachyrhynchos* | American crow | None |
| *Hirundo rustica* | Barn swallow | None |
| *Euphagus cyanocephalus* | Brewer's blackbird | None |
| *Melozone crissalis* | Brown towhee | None |
| *Callipepla californica* | California quail | None |
| *Branta canadensis* | Canada goose | None |
| *Petrochelidon pyrrhonota* | Cliff swallow | None |
| *Junco hyemalis* | Dark-eyed junco | None |
| *Bubo virginianus* | Great-horned owl | None |
| *Sturnus vulgaris* | European starling | None |
| *Charadrius vociferus* | Killdeer | None |
| *Anas platyrhynchos* | Mallard duck | None |
| *Zenaida macroura* | Mourning dove | None |
| *Colaptes auratus* | Northern flicker | None |
| *Mimus polyglottos* | Northern mockingbird | None |
| *Columba livia domestica* | Pigeon | None |
| *Carpodacus purpureus* | Purple finch | None |
| *Buteo jamaicensis* | Red-tailed hawk | None |
| *Turdus migratorius* | Robin | None |
| *Cathartes aura* | Turkey vulture | None |
| *Sialia mexicana* | Western bluebird | None |
| *Tyrannus verticalis* | Western kingbird | None |
| *Sturnella neglecta* | Western meadowlark | None |
| *Aphelocoma californica* | Western scrub-jay | None |
| *Sitta carolinensis* | White-breasted nuthatch | None |
| *Meleagris gallopavo* | Wild turkey | None |
| *Pica nuttalli* | Yellow-billed magpie | None |
| **Reptiles** | | |
| *Thamnophis sirtalis* | Common garter snake | None |
| *Crotalus oreganus oreganus* | Northern Pacific rattlesnake | None |
| *Pituophis catenifer catenifer* | Pacific gopher snake | None |
| *Sceloporus occidentalis* | Western fence lizard | None |
| **Amphibians** | | |
| *Hyla regilla* | Pacific tree frog | None |
| *Rana catesbeiana* | Bullfrog | None |
| **Mammals** | | |
| *Odocoileus hemionus* | Black-tailed deer | None |
| *Lepus californicus* | Black-tailed jackrabbit | None |
| *Sciurus griseus* | Western gray squirrel | None |
| *Otospermophilus beecheyi* | California ground squirrel | None |
| *Canis latrans* | Coyote | None |
| *Thomomys* sp. | Gopher | None |
| *Mephitis mephitis* | Striped skunk | None |
| **Fish** | | |
| *Lavinia symmetricus* | California roach | None |
| *Gambusia affinis* | Mosquitofish | None |
| *Lepomis macrochirus* | Bluegill | None |
| **Invertebrates** | | |
| *Pacifastacus leniusculus* | Signal crayfish | None |
| Sources: ENPLAN. Wildlife Field Survey on July 3, 2012. Wildland Resource Managers. Wildlife Field Survey on March 26 and April 2, 2015. | | |

### Domesticated Animals

The proposed project site is located within a primarily rural residential area, with parcels varying in size from 1 to 20 acres, and limited agricultural uses. Table 3-2, EXISTING SURROUNDING LAND USES, in Section 3.0, PROJECT DESCRIPTION, identifies the surrounding zoning designations that include the following: Exclusive Agriculture (EA), Unclassified (U) Rural Residential 5-acre minimum (R-R-BA-5); Rural Residential 3-acre minimum (R-R-BA-3); Rural Residential 2.5-acre minimum (R-R-BA-2.5); Rural Residential with Mobile Home 3-acre minimum (R-R-T-BA-3); Rural Residential with Mobile Home 2.5-acre minimum (R-R-T-BA-2.5); and Rural Residential with Mobile Home (R-R-T). As noted in Section 5.10, LAND USE AND PLANNING, within a mile to a mile and a half of the proposed project there are approximately 1,005 parcels that are less than 6 acres in size, many of which are developed with single-family residential uses.

Residential development is currently present along the site's eastern, southern, and western boundaries. Due to the close proximity of existing residential development, the potential exists for domesticated pets to harass wildlife in the area.

## CRITICAL HABITAT

Critical habitat is a specific geographic area that is essential for the conservation of a threatened or endangered species, and may require special management or protection. Critical habitat can be designated by the USFWS or the NMFS. No critical habitat was identified in the USFWS species list obtained for the project area.

Review of the USFWS' Critical Habitat Mapper and critical habitat data maintained by NMFS showed that no critical habitat has been designated on the proposed project site. Critical habitat has been designated for vernal pool tadpole shrimp and vernal pool fairy shrimp approximately 4.4 miles southwest of the study area. Critical habitat has been designated for Central Valley steelhead approximately 0.6 miles west and 1.8 miles east of the project area in Little Cow Creek and Stillwater Creek, respectively. Critical habitat has been designated for slender Orcutt grass as close as approximately 2.8 miles, 3.7 miles, and 4.4 miles southwest of the project area. Critical habitat is designated for Central Valley spring-run Chinook salmon approximately 4 miles west and approximately 3 miles downstream of the study area in Stillwater Creek and Little Cow Creek, respectively.

## ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, established the essential fish habitat (EFH) mandate, which only applies to species managed under a federal Fishery Management Plan. As such, EFH analysis is required for Chinook salmon. Essential fish habitat for the Chinook salmon fishery consists of "those waters and substrate necessary for salmon production needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem." Review of NMFS' EFH Mapper found that the project area is within a hydrologic unit (Cow Creek) which is designated as EFH for Chinook salmon.

## ANADROMOUS FISH

### Sacramento River Winter-Run Chinook Salmon

The Sacramento River winter-run Chinook salmon is listed as Endangered by both the State and federal governments. The Evolutionary Significant Unit (ESU) is represented by a single naturally spawning population that has been completely displaced from its historical spawning habitat by the construction of Shasta and Keswick Dams.

Sacramento River winter-run Chinook salmon are distinguished from other runs of Chinook salmon in the Sacramento River in that adults generally enter freshwater and migrate upstream during winter and spring, then spawn several months later after their gonads have matured. Spawning occurs between mid-April and mid-August. The winter-run currently spawns almost exclusively in the Sacramento River between Keswick Dam and Red Bluff, where cold water released from Keswick Dam during summer provides conditions suitable for spawning. Fry emerge between mid-June and mid-October and move to river margins or tributaries to rear. Juveniles rear in freshwater streams and rivers between July and mid-March. Emigration occurs between mid-March and mid-July.

Recent trends in Sacramento River winter-run Chinook salmon abundance indicate some recovery since the listing; however, the population remains well below the recovery goals, and is particularly susceptible to extinction due to loss of genetic variation resulting from the reduction of the ESU to one population. According to NMFS, the winter-run continues to be at a high risk of extinction. Sacramento River winter-run Chinook salmon population size increased during the early 2000s, but has declined in recent years due to periods of unfavorable ocean conditions (2005-2006) and drought (2007-2009). Longer term reduction in risk of extinction and improved status of the winter-run will depend on the successful re-establishment of another low-risk population in a historically used area (e.g., Battle Creek).

### Central Valley Spring-Run Chinook Salmon

The Central Valley spring-run Chinook salmon is listed as Threatened by both the State and federal governments. The ESU for the spring-run is the Sacramento River Basin downstream of impassible barriers. The ESU includes all naturally spawned populations of spring-run Chinook salmon in the Sacramento River and its tributaries, including the Feather River, as well as the Feather River Hatchery spring-run Chinook salmon program.

Adult Central Valley spring-run Chinook salmon begin entering the Sacramento-San Joaquin Delta in early January, and enter natal streams between mid-March and mid-October. Upon entering fresh water, Central Valley spring-run Chinook salmon are sexually immature and must hold in cold water habitats through summer to mature. Typically, they utilize mid- to high- elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between August and mid-October, mostly within four tributaries of the Sacramento River: Butte, Big Chico, Doe, and Mill Creeks. Embryos hatch following a 5- to 6-month incubation period and alevins (sac-fry) remain in the gravel for an additional 2 to 3 weeks. Some fish begin the downstream migration soon after emergence, while other do so as yearlings. In general, juvenile rearing in streams and rivers occurs between mid-October and mid-May.

Historically, the spring-run was the dominant run in the Sacramento River Basin, with runs in excess of 600,000 adults. The declining population is mainly attributable to loss of upstream, cold water habitats blocked by impassable dams. In addition to this habitat loss, a spatial and temporal overlap with spawning fall-run has resulted in the hybridization and homogenation of some subpopulations. Threats from hatchery production, habitat loss, overharvesting, disease, predation, and water diversions continue to keep the ESU at moderate risk for extinction. According to NMFS, with few exceptions, spring-run populations have declined more recently, particularly since 2006. The recent declines in abundance place the Mill Creek and Deer Creek populations in the high extinction risk category due to their rate of decline. Butte Creek remains in the low extinction risk category, although the rate of decline makes it a borderline case. The only spring-run populations that seemed to have improved in status between 2005 and 2010 are in Battle Creek and Clear Creek. Overall, the status of the ESU has likely deteriorated since 2005, and its extinction risk may have increased.

**Central Valley Steelhead**

The Central Valley steelhead is listed as Threatened by the federal government. The steelhead is an anadromous strain of rainbow trout that emigrates to the sea and returns to inland waters as adults to spawn. This ESU includes all naturally produced steelhead in the Sacramento-San Joaquin Rivers. Existing wild steelhead stocks in the Central Valley are mostly confined to the upper Sacramento River and its tributaries. The majority of the Central Valley steelhead spawning migration occurs between August and March. Spawning then occurs between December and April in streams with cool, well-oxygenated water that is available year round. Eggs incubate for one to four months before the fry emerge. Newly emerged fry move to shallow stream margins to escape predation and high water velocities. Steelhead may remain in fresh water for one to four years before emigrating, but typically emigrate after two years in fresh water. Once at sea, adults spend anywhere from one to four years there before returning to fresh water to spawn as four or five year olds.

Factors affecting the survival and recovery of Central Valley steelhead are similar to those affecting winter- and spring-run Chinook salmon and are primarily associated with habitat loss. The most recent biological information suggests that the extinction risk for Central Valley steelhead has increased since 2005; several factors for this change include drought and poor ocean conditions in recent years. There continue to be threats to the genetic integrity of natural or wild steelhead from hatchery steelhead programs in the Central Valley, but it is unclear if or how this factor has influenced the overall viability of the ESU. The best available information on the biological status of the ESU and continuing and new threats indicate that its status as a Threatened species is appropriate. Long-term recovery will require improved freshwater habitat conditions, abatement of a wide range of threats including threats from hatchery populations, and the reintroduction of steelhead to some of its historic habitat.

**Central Valley Fall-Run/Late-Fall-Run Chinook Salmon**

Central Valley fall-run Chinook salmon is a Federal Species of Concern and a State Species of Special Concern. Central Valley late-fall-run Chinook salmon is a Federal Species of Concern. Fall-run/late-fall-run Chinook salmon are currently the most abundant of the Chinook salmon runs in the Sacramento River Watershed. Much of the habitat where fall-run/late-fall-run Chinook salmon historically spawned is located downstream of major dams on the Sacramento and San Joaquin River; thus, these runs were not affected to the degree that other Chinook runs were. The fall-run/late-fall-run Chinook salmon spawn in the lower reaches (200 to 2,000 feet in elevation) of most rivers and streams in the Central Valley.

Adult Central Valley fall-run Chinook salmon enter freshwater at an advanced stage of maturity, migrate quickly upstream to spawning sites, and spawn within a few days or weeks of entering freshwater. Spawning migrations occur from July through December. Spawning occurs between October and December, with peak spawning occurring in November. Embryo incubation occurs between October and early March. Unlike other Chinook runs, juveniles emigrate to the ocean three to seven months after they emerge from the spawning gravel. Downstream emigration to the sea by juveniles occurs between mid-December and mid-June.

Adult Central Valley late-fall-run Chinook salmon begin their spawning migrations in the Sacramento River between mid-October and mid-April. Spawning occurs between January and April, with peak spawning occurring in February and March. Embryo incubation occurs between early January and late June. Downstream emigration by juveniles occurs between mid-April and mid-December.

## CORE AREAS FOR RECOVERY

Core areas are the specific sites that are necessary to recover endangered or threatened species. Higher recovery priorities are assigned to: (1) species with low numbers or populations or limited geographical distributions, (2) the largest blocks of habitat, (3) the largest populations of each taxon, and (4) to those populations or species representing unique ecological conditions and genotypes. Core areas may be modified in the future based upon the results of status surveys and research. The project area is not within a core area for recovery of a federally listed species. The nearest core area for recovery (the "Redding Core Area" for Vernal Pool Ecosystems) is approximately 2.6 miles southwest of the project site.

## WETLANDS AND OTHER WATERS OF THE U.S.

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines wetlands in Section 404 of the Clean Water Act as, "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support under normal circumstances) a prevalence of vegetation typically adopted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link, or significant nexus with, other waters of the U.S. The U.S. Army Corps of Engineers (Corps) is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the Environmental Protection Agency (EPA) has overall responsibility for the Act.

"Other waters of the U.S." refers to those hydric features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and/or an ordinary high-water mark. Examples of other waters of the U.S. include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

CDFW does not normally have direct jurisdiction over wetlands unless they are subject to jurisdiction under Streambed Alteration Agreements or they support state-listed endangered species; however, CDFW has trust responsibility for wildlife and habitats pursuant to California law. As a trustee agency, CDFW has jurisdiction over stream-dependent riparian habitat. Stream-dependent riparian habitat is defined in California Fish and Game Code Section 2785 as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." Project activities resulting in

permanent impacts to streams would be subject to a Streambed Alteration Agreement. In cases where streams are fully avoided, but stream-dependent riparian habitat would be permanently impacted, CDFW offers recommendations during the CEQA review process to assist the lead agency in making informed decisions regarding this resource.

Two types of waters of the U.S. are present in the biological study area, as identified and defined below:

### Seasonal Streams

Onsite seasonal streams include intermittent and ephemeral streams. Intermittent streams are drainage channels with apparent bed and bank features that flow for more than several days following precipitation events. Ephemeral streams are drainage channels that flow for brief periods in response to rainfall. Water sources may include direct precipitation, runoff from upstream channel reaches, and always include at least some seepage from surrounding soils (groundwater).

### Seasonal Wetlands

Onsite seasonal wetlands are comprised of wet swales, ponds, and a seep. Wet swales are drainage channels that do not exhibit bed and bank features, but are instead vegetated with plants typically occurring in wetlands. Water sources may include direct precipitation, runoff from upstream channel reaches, and seepage from surrounding soils. Ponds are defined as small bodies of still water formed naturally or by hollowing or embanking. A seep is a moist or wet place where water, usually groundwater, reaches the ground surface from an underground aquifer.

## SUMMARY OF WETLANDS AND OTHER WATERS OF THE U.S.

The field delineation efforts mapped 27 features in the proposed project site, including wetlands and other waters, within multiple categories that included main-stem streams, tributaries, wet swales, ponds, and seeps. Indicators of wetland hydrology in the onsite wetlands included inundation, drainage patterns, and water-stained leaves. Onsite wetland soils exhibited common, distinct mottles and were dominated by hydrophytic vegetation. Vegetation at contrasting upland sites consisted predominately of the annual grassland and blue oak woodland species, with scattered gray pine. Soils at contrasting upland sites exhibited no mottling or other hydric indicators, nor were indicators of wetland hydrology observed. Table 5.4-3, SUMMARY OF WATERS BY TYPE, provides an acreage summary of the delineation results. For the purpose of simplifying acreage calculations, types of wetland features (wet swales, ponds, and seeps) were grouped as one category, “Seasonal Wetlands,” and types of other waters (intermittent and ephemeral streams) were grouped under a second category, “Seasonal Streams.”

**Table 5.4-3**
**SUMMARY OF WATERS BY TYPE**

| Type | Area (Acres) |
|---|---|
| **Water Features** | |
| *Seasonal Wetlands* | *0.7* |
| *Seasonal Streams* | *5.8* |
| **Total Waters on Proposed Project Site** | **6.5** |

Sources: Wildland Resource Managers. Wetland Delineation for Chatham Ranch. December 2008; Wildland Resource Managers. Chatham Ranch Wetland Delineation Addendum. May 2011.

## SPECIAL-STATUS SPECIES

Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, State, or other agencies. Some of these species receive specific protection that is defined by federal or State endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of State resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special-status species" in this Draft EIR following a convention that has been developed in practice but as no official sanction. The various categories encompassed by the term, and the legal status of each, are discussed in the Regulatory Settings section. For the purposes of this assessment, the term "special-status" includes:

- *Species that are federally listed or proposed under the FESA (50 CFR 17.11-17.12);*
- *Species that are candidates for listing under the FESA (61 FR 7596-7613);*
- *Species that are State listed or proposed under the CESA (14 CCR 670.5);*
- *Species listed by the USFWS or CDFW as a species of concern (USFWS), rare (CDFW), or of special concern (CDFW);*
- *Fully protected animals as defined by the State of California (CDFG Code Sections 3511, 4700, and 5050);*
- *Plants listed as rare or endangered under the California Native Plant Protection Act (State of California CDFG Code Section 1900 et seq.); and*
- *Plants listed by the California Native Plant Society (CNPS) as rare, threatened or endangered (List 1A and List 2 status plants in CNPS 2007).*

The USFWS official species list identifies one federally listed plant species, slender Orcutt grass, as potentially being affected by work in the project area; no plant species proposed for listing are identified on the species list. Review of CNDDB records found that one special-status plant species, silky cryptantha, has been reported in the project site. Twelve special-status plants species are known to occur within a 10-mile radius of the project area: Ahart's paronychia, Bellinger's meadowfoam, big-scale balsamroot, Boggs Lake hedge-hyssop, legenere, northern clarkia, Red Bluff dwarf rush, Sanford's arrowhead, Shasta snow-wreath, silky cryptantha, slender Orcutt grass, Sulphur Creek brodiaea, and Shasta limestone monkeyflower. The project site contains potentially suitable habitat for Ahart's paronychia, Boggs Lake hedge-hyssop, legenere, Red Bluff dwarf rush, slender Orcutt grass, big-scale balsamroot, silky cryptantha, and Sulphur Creek brodiaea.

The USFWS species lists identifies eight federally listed animal species (Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle [VELB], Delta smelt, Central Valley steelhead, California red-legged frog, and northern spotted owl) as potentially being affected by work in the project area.

Review of CNDDB records found that no special-status animal species or animal species proposed for listing have been reported in the project site. Seventeen special-status animal species (bald eagle, bank swallow, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, foothill yellow-legged frog, fisher, Pacific lamprey, purple martin, Shasta salamander, spotted bat, Central Valley steelhead, tricolored blackbird, VELB, vernal pool fairy shrimp, vernal pool tadpole shrimp, western pond turtle, and western spadefoot) and 10 non-status animal species (California linderiella, great egret,

kneecap lanx, Oregon shoulderband, osprey, Shasta hesperian, Wintu sideband, Shasta chaparral, silver-haired bat, and western pearlshell) are known to occur within a 10-mile radius of the project area.

Although not reported on the USFWS species list for the project area or in CNDDB records, two additional special-status salmonids (Central Valley fall-run Chinook salmon and Central Valley late-fall-run Chinook salmon) are known to utilize the Sacramento River and large tributary streams. Review of the CalFish database records (contained in CDFW's BIOS database) and the Stillwater-Churn Creek Watershed Assessment found no records of listed salmonids in seasonal streams in the project area. However, these streams are tributary to Cow Creek and Stillwater Creek, which are known to support rearing and/or spawning by Chinook salmon and Central Valley steelhead. Cow Creek and Stillwater Creek confluence with the Sacramento River approximately 10 miles downstream of the project area.

A list of special-status plant and animal species that have the potential to occur within the vicinity of the project area was compiled based on data in the USFWS official species list for the project site, CNDDB records, and critical habitat geographic information system (GIS) data maintained by the USFWS. Special-status plants and animals with the potential to occur within the project area are identified in Table 5.4-4, POTENTIALLY IMPACTED SPECIAL-STATUS SPECIES IN THE PROJECT AREA. Additionally, Table 5.4-4 indicates each species' potential to be impacted by the project. Special-status species determined to have a reasonable potential for being impacted by the project are discussed below.

**Red Bluff Dwarf Rush**

Although not state or federally listed, Red Bluff dwarf rush has been assigned a California Rare Plant Rank of 1B by CDFW. Pursuant to §15380 of the State *CEQA Guidelines*, for the purposes of CEQA analysis, the plant must be addressed as if it were formally listed. Red Bluff dwarf rush is an annual herb that typically occurs along the edges of vernal pools and vernal drainages, on clay-rich terrace soils. The species is found between 100 and 3,400 feet in elevation. The flowering period is March through May. During ENPLAN's 2012 botanical survey of the project site, a population of Red Bluff dwarf rush approximately 0.25 acres in size, was identified in the Resource Management Area (RMA) of approximately 13 lots (60-69 and 77-79). Although no development would occur in the RMAs, the RMAs and road alignment as currently designed do not provide a sufficient minimum buffer (100 feet) from the mapped occurrence of Red Bluff dwarf rush. With the current project design, the Red Bluff dwarf rush occurs in or adjacent to the road right-of-way, and is 100 feet or less from approximately five building envelopes. Work in this area has the potential to directly and indirectly affect Red Bluff dwarf rush.

**Salmonids**

Salmonids, which include Chinook salmon (fall-run, late-fall-run, winter-run, and spring-run) and Central Valley steelhead, inhabit clean, cold water. The various runs of Chinook salmon and steelhead in California are differentiated primarily by the maturity of adult fish entering freshwater and the time of spawning migrations. The fall-run begin their spawning migration in the fall, the late-fall-run initiate their spawning in the late-fall; the winter-run enter freshwater in winter; and the spring-run begin spawning migration in early spring. Due to their dependency on dissolved oxygen, Chinook salmon and steelhead have strict thermal requirements. The preferred temperature ranges for the different life stages of Chinook salmon are as follows: adult migration (3.3 degrees Celsius [$^0$C]-14.4$^o$C) adult spawning (4.4$^o$C-13.9$^o$C), egg incubation and fry emergence (5.0 $^o$C-14.4$^o$C), and juvenile rearing (5.0 $^o$C-14.4$^o$C). Temperature ranges lethal to all life stages of Chinook salmon and Central Valley steelhead are 25$^o$C and 21$^o$C, respectively. Salmonids require clean, rounded gravel for spawning.

**Table 5.4-4**
**POTENTIALLY IMPACTED SPECIAL-STATUS SPECIES IN THE PROJECT AREA**

| Common Name | Scientific Name | Status* | General Habitat Description | Potential to Occur in Project Area |
|---|---|---|---|---|
| **Wildlife** | | | | |
| Conservancy fairy shrimp | *Branchinecta conservatio* | FE | Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water. | The project site lacks large vernal pool complexes that provide suitable habitat for conservancy fairy shrimp. The species is not expected to be present. |
| Vernal pool fairy shrimp | *Branchinecta lynchi* | FT | Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools. | The wet swales on lots 60-69 and 77-79 of the project site provide marginally suitable habitat for vernal pool tadpole shrimp. The species could be present. |
| Vernal pool tadpole shrimp | *Lepidurus packardi* | FE | Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills. | The wet swales on Lots 60-69 and 77-79 of the project site provide marginally suitable habitat for vernal pool tadpole shrimp. The species could be present. |
| Valley elderberry longhorn beetle | *Desmocerus californicus dimorphus* | FT | The valley elderberry longhorn beetle (VELB) is found only in association with elderberry shrubs (*Sambucus* spp.). The species' elevational range extends from sea level to 3,000 feet. | Various elderberry shrubs, the host plant of the larval stage of the valley elderberry longhorn beetle, have been identified within the project area and provide suitable habitat for the VELB. |
| Sacramento River winter-run Chinook salmon | *Oncorchynchus tshawytscha* | FE, SE | Sacramento River winter-run Chinook salmon spawn almost exclusively in the Sacramento River, and not in tributary streams. Spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs where there is an abundance of loose gravel. Juveniles may rear in tributaries of the Sacramento River. | Although no salmonids were observed during the field surveys, Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential rearing/spawning habitat for Chinook salmon during spring and early summer when flows are adequate and water temperatures are below 77 degrees Fahrenheit. |
| Central Valley spring-run Chinook salmon | *Oncorhynchus tshawytscha* | FT, ST | Central Valley spring-run Chinook salmon enter the Sacramento-San Joaquin Delta in early January, and enter natal streams between March and May. Upon entering fresh water, spring-run are sexually immature and must hold in cold water habitats through summer to mature. Typically, Central Valley spring-run Chinook salmon utilize mid- to high-elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between September and October. | Although no salmonids were observed during the field surveys, Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential rearing/spawning habitat for Chinook salmon during spring and early summer when flows are adequate and water temperatures are below 77 degrees Fahrenheit. |
| Central Valley steelhead | *Oncorhynchus mykiss* | FT | Central Valley steelhead inhabit cold-water tributaries of the Sacramento and San Joaquin rivers. Adults begin their upstream spawning migration between August and November. Spawning occurs between January and March. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing, shallower water. | Although no steelhead were observed during the field surveys, Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential rearing/spawning habitat for steelhead during spring and early summer when flows are adequate and water temperatures are below 77 degrees Fahrenheit. |
| Central Valley fall-run Chinook salmon | *Oncorhynchus tshawytscha* | FSC, SSSC | The Central Valley fall-run Chinook salmon spawn in the lower reaches of most rivers and streams in the Central Valley. Adults begin their spawning migration between July and December. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing water. | Although no salmonids were observed during the field surveys, Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential rearing/spawning habitat for Chinook salmon during spring and early summer when flows are adequate and water temperatures are below 77 degrees Fahrenheit. |

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| Central Valley late-fall-run Chinook salmon | *Oncorhynchus tshawytscha* | FSC, SSSC | The Central Valley late-fall-run Chinook salmon spawn in the lower reaches of most rivers and streams in the Central Valley. Adults begun their upstream spawning migration between October and April. Spawning occurs between January and April. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing water. | Although no salmonids were observed during the field surveys, Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential rearing/spawning habitat for Chinook salmon during spring and early summer when flows are adequate and water temperatures are below 77 degrees Fahrenheit. |
| Delta smelt | *Hypomesus transpacificus* | FT, SE | Delta smelt primarily inhabit the brackish waters of the Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edge waters. | The Delta smelt would not be present because the project area is well outside the range of the species. |
| Western pond turtle | *Emys marmorata* | SSSC | The western pond turtle associates with permanent or nearly permanent water in a variety of habitats. This turtle is typically found in quiet water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. Nesting and courtship occur during spring. Nests are generally constructed within 500 feet of a waterbody, but some nests have been found up to 1,200 feet away. Pond turtles leave aquatic sites in the fall and overwinter in uplands nearby. Pond turtles return to aquatic sites in spring. | Although no western pond turtles were observed during the field surveys, Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential habitat for western pond turtles during spring and early summer. |
| Northern spotted owl | *Strix occidentalis caurina* | FT, ST, SSSC | Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snag. The nesting season is March through June. | No dense, old-growth, multi-layered forests occur in or adjacent to the project area. The northern spotted owl would thus not nest in or adjacent to the project area. |
| Tricolored blackbird | *Agelaius tricolor* | SC, SSSC | Tricolored blackbirds are colonial nesters and generally nest near open water. Nesting areas must be large enough to support a minimum colony of about 50 pairs. Tricolored blackbirds generally construct nests of dense cattails or tules, although that can also nest in thickets of willow, blackberry, wild rose and tall herbs. | No suitable nesting habitat for tricolored blackbird occurs in the project area. The tricolored blackbird would thus not nest in the project area. |
| Bald eagle | *Haliaeetus leucocephalus* | FD, SE, SFP | Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July. | No suitable nesting habitat for the bald eagle is present in or adjacent to the project area. No bald eagles or bald eagle nests were observed during the wildlife survey, nor is the species expected to nest in or adjacent to the project area. |
| Bank swallow | *Riparia riparia* | ST | Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting. | No vertical cliffs with fine-textured or sandy soils are present in the project area. The bank swallow would thus not nest in the project area. |

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| California red-legged frog | *Rana draytonii* | FT, SSSC | Suitable aquatic habitat for the California red-legged frog consists of permanent water bodies of fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. The California red-legged frog is not characteristically found in deep lacustrine habitats (e.g. deep lakes and reservoirs). Dense, shrubby riparian vegetation, e.g. willow and bulrush species, and bank overhangs are important features of California red-legged frog breeding habitat. The California red-legged frog tends to occur in greater numbers in deeper, cooler pools with dense emergency and shoreline vegetation. | The project area lacks suitable breeding habitat for the California red-legged frog, and does not provide a dispersal corridor(s) between potential breeding habitats in the proposed project site vicinity. Although the project area is within the historic range of the California red-legged frog, there is substantial documentation that the species has been extirpated from Shasta County for many decades. The nearest confirmed sighting of the California red-legged frog is approximately 70 miles to the southeast in mountainous terrain in eastern Butte County. The California red-legged frog is presumed to be absent from the project area. |
| Foothill yellow-legged frog | *Rana boylii* | SSSC | Foothill yellow-legged frogs are typically found in shallow, partly-shaded, perennial streams in areas with riffles and rocky substrates. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall. This frog needs at least some cobble-sized substrate for egg-laying. | Seasonal streams in the project area do not provide suitable habitat for the foothill yellow-legged frog. The foothill yellow-legged frog would thus not be present. |
| Shasta salamander | *Hydromantes shastae* | ST | The Shasta salamander is primarily restricted to limestone outcrops near Lake Shasta. | No limestone outcrops occur in or adjacent to the project area. The Shasta salamander would thus not be present. |
| Fisher – West Coast DPS | *Pekania pennanti* | FP, SC, SSSC | Fishers primarily inhabit mixed conifer forests dominated by Douglas-fir, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities; den sites are most often found in areas with no human disturbance. | No mature, dense forest stands with snags and greater than 50 percent canopy closure occur in the project area. Further, the project area is subject to moderate levels of human disturbance. No fishers or fisher dens were observed in the project area during the wildlife survey, nor is the species expected to den in the project area. |
| Pacific lamprey | *Entosphenus tridentatus* | SSSC | Pacific lamprey is an anadromous parasitic lamprey. Adults begin their spawning migration between July and December. Spawning occurs between March and July in spawning habitat that is similar to that of salmon: gravel bottomed streams at the upstream end of riffle habitat. Pacific lamprey distribution is also similar to that of salmon. | The project area lacks suitable breeding habitat for Pacific lamprey. The nearest confirmed sighting of the species is approximately four miles to the southeast of the project area in Clover Creek. The Pacific lamprey is presumed to be absent from the project area. |
| Purple martin | *Progne subis* | SSSC | Purple martins inhabit woodlands and low elevation coniferous forests of Douglas-fir, ponderosa pine, and Monterey pine. Purple martins nest in old woodpecker cavities or in man-made structures such as culverts, bridges, or nest boxes. | Marginally suitable nesting habitat for purple martin is present in the project area. However, according to CNDDB, the nearest mapped occurrences of purple martin are approximately 9 miles northwest in the vicinity of Shasta Lake. Thus, the purple martin is not expected to nest in the project site. |

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| Spotted bat | *Euderma maculatum* | SSSC | Spotted bats inhabit grasslands, mixed coniferous forests, and deserts. Spotted bats roost in caves, rock crevices, and buildings. Spotted bats are not known to roost on bridges. | The project area lacks suitable roosting habitat for spotted bat. The spotted bat would thus not be expected to roost on the project site. |
| Western spadefoot | *Spea hammondii* | SSSC | Western spadefoot breed from January through May in shallow, temporary pools that persist for at least three weeks. Breeding pools are generally absent of bullfrogs, fish, and crayfish. After breeding, adults seek shelter underground either by excavating a subterranean burrow or retreating into a small mammal burrow nearby. Tadpoles transform within three weeks. Following transformation, juveniles leave breeding pools and seek shelter underground. Western spadefoots remain underground until breeding pools form the following spring. | Potentially suitable breeding habitat for western spadefoot is present in the project area. However, western spadefoot was not observed during the surveys conducted on March 26 and April 2, 2015, during the early evening and nighttime hours, and is not expected to be present. |
| **Plants** | | | | |
| Ahart's paronychia | *Paronychia ahartii* | 1B.1 | Ahart's paronychia is an annual herb that occurs in valley and foothill grassland, vernal pool, and cismontane woodland habitats. This plant is typically found in nearly barren clay of swales and on higher ground around vernal pools from 100 to 1,700 feet in elevation. It also occurs in rocky soils. The flowering period is March through June. | The project area has marginally suitable habitat for Ahart's paronychia. However, Ahart's paronychia was not observed during the botanical surveys and it not expected to be present. |
| Bellinger's meadowfoam | *Limnanthes floccosa* ssp. *bellingeriana* | 1B.2 | In California, Bellinger's meadowfoam occurs around meadows, seeps, damp stony flats, and in cismontane woodland below 3,600 feet in elevation in Shasta County. The flowering period is April through June. | No suitable habitat for Bellinger's meadowfoam occurs in the project area. Bellinger's meadowfoam was not observed during the botanical surveys and is not expected to be present. |
| Big-scale balsamroot | *Balsamorhiza macrolepis* | 1B.2 | Big-scale balsamroot occurs in valley and foothill grasslands, cismontane woodlands, and chaparral habitats, and may occasionally occur on serpentine soils. The species is reported up to 5,100 feet above sea level. The flowering period is between March and June. | The project area has potentially suitable habitat for big-scale balsamroot. However, big-scale balsamroot was not observed during the botanical surveys and it not expected to be present. |
| Boggs Lake hedge-hyssop | *Gratiola heterosepala* | SE, 1B.2 | Boggs Lake hedge-hyssop occurs in marshes, swamps, and vernal pools. The species is reported from sea level to 7,800 feet in elevation. The flowering period is April through August. | The wet swales on the project site provide marginally suitable habitat for Boggs Lake hedge-hyssop. However, Boggs Lake hedge-hyssop was not observed during the botanical surveys and is not expected to be present. |
| Legenere | *Legenere limosa* | 1B.1 | Legenere is an annual herb that occurs in moist or wet soil associated with vernal pools, vernal marshes, lakes, ponds, and sloughs up to 3,000 feet in elevation. The flowering period is April through June. | Wet swales on the proposed project site provide marginally suitable habitat for legenere. However, legenere was not observed during the botanical surveys and thus, is not expected to be present. |
| Northern clarkia | *Clarkia borealis* spp. *borealis* | 1B.3 | Northern clarkia is an annual herb that inhabits chaparral, cismontane woodland, and coniferous forests between 1,200 and 2,400 feet in elevation. The species often occurs in dry, rocky substrates along roads. The flowering period is June through September. | No suitable habitat for northern clarkia occurs in the project area. Northern clarkia was not observed during the botanical surveys and is not expected to be present. |

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| Oval-leaved viburnum | *Viburnum ellipticum* | 2B.3 | Oval-leaved viburnum is a perennial deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forests. The species often occurs on north-facing slopes covered by dense brush. Oval-leaved viburnum is found between 700 and 4,600 feet in elevation. The flowering period is May and June. | In California, oval-leaved viburnum is an introduced weed. Review of CNDDB records found that oval-leaved viburnum has been reported within 10 miles of the project area. However, CDFW does not consider oval-leaved viburnum to be a special-status species. No further evaluation of this species is warranted. |
| Silky cryptantha | *Cryptantha crinita* | 1B.2 | Silky cryptantha is an annual herb that occurs along low-gradient seasonal streams with broad floodplains, usually on the valley floor, where it is found on gravelly or cobbly substrates. The species also occurs in vernally moist uplands. Less frequently, it occurs along perennial streams, including the Sacramento River. The species is found between 200 and 4,000 feet in elevation. The flowering period is between April and May. | Streams in the project site provide potentially suitable habitat silky cryptantha, and an occurrence of silky cryptantha has been broadly mapped to include a portion of the project site. However, silky cryptantha was not observed during the botanical surveys and is not expected to be present. |
| Red Bluff dwarf rush | *Juncus leiospermus* var. *leiospermus* | 1B.1 | Red Bluff dwarf rush is an annual herb that typically occurs along the edges of vernal pools and vernal drainages, or on clay-rich terrace soils. The species is found between 100 and 3,400 feet in elevation. The flowering period is March through May. | Seasonal wetlands in the project area provide suitable habitat for Red Bluff dwarf rush. One population of Red Bluff dwarf rush was observed within the project site during a 2012 field evaluation. |
| Sanford's arrowhead | *Sagittaria sanfordii* | 1B.2 | Sanford's arrowhead occurs in freshwater ponds, marshes, and ditches with perennial water. The species was reported from sea level to 2,200 feet in elevation. The flowering period is May through October. | No suitable habitat for Sanford's arrowhead occurs in the project area. Sanford's arrowhead was not observed during the botanical surveys and is not expected to be present. |
| Shasta limestone monkeyflower | *Erythranthe taylori* | 1B.1 | Shasta limestone monkeyflower is a newly described species initially reported to occur only on limestone rocks near Shasta Lake. However, field studies in 2015 found the species on non-limestone rock outcrops and associated talus slopes, and extended the species range north into southern Siskiyou County. The species occurs between 1,100 and 3,600 feet in elevation. The flowering period is February through May. | No suitable habitat for Shasta limestone monkeyflower occurs in the project area. Shasta limestone monkeyflower was not observed during the botanical surveys and is not expected to be present. |
| Slender Orcutt grass | *Orcuttia tenuis* | FT, SE, 1B.1 | Slender Orcutt grass is an annual herb that occurs in vernal pools and similar habitat, occasionally on reservoir edges or stream floodplains, on clay soils with seasonal inundation in valley grasslands to coniferous forest or sagebrush scrub. The species is found between 100 and 5,800 feet in elevation. The flowering period is May through September. | Seasonal wetlands in the project area provide potentially suitable habitat for slender Orcutt grass, and a CNDDB occurrence of slender Orcutt grass has been broadly mapped to include a portion of the project site. However, slender Orcutt grass was not observed during the botanical surveys, and is not expected to be present. |
| Shasta snow-wreath | *Neviusia cliftonii* | 1B.2 | The Shasta snow-wreath is a perennial deciduous shrub that is generally limited to limestone-derived soils in shady stream canyons. The species is found between 900 and 1,700 feet in elevation. The flowering period is April through June. | No limestone-derived soils occur in the project area. Shasta snow-wreath was not observed during the botanical surveys and is not expected to be present. |

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| Sulphur Creek brodiaea | *Brodiaea matsonii* | 1B.1 | Sulphur Creek brodiaea, a perennial bulbiferous herb, is reported from only two locations along Sulphur Creek. This plant occurs on metamorphic amphibolite schists in close proximity to streams, meadows, and/or seeps within cismontane woodland. The species is reported between 600 and 700 feet in elevation. The flowering period is May and June. | Potentially suitable habitat for Sulphur Creek brodiaea is present along streams in the project area. However, Sulphur Creek brodiaea was not observed during the botanical surveys and is not expected to be present. |

*** Status Codes:**

Federal:

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| FE | Federally Listed – Endangered |
| FT | Federally Listed – Threatened |
| FC | Federal Candidate Species |
| FP | Federal Proposed Species |
| FD | Federal Deslisted |
| FSC | Federal Species of Concern |

State:

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| SFP | State Fully Protected |
| SR | State Rare |
| SE | State Listed - Endangered |
| ST | State Listed - Threatened |
| SC | State Candidate Species |
| SD | State Delisted |
| SSSC | State Species of Special Concern |

Rare Plant Rank

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|---|---|
| 1A | Plants Presumed Extinct in California |
| 1B | Plants Rare, Threatened or Endangered in California and Elsewhere |
| 2 | Plants Rare, Threatened or Endangered in California but More Common Elsewhere |

Rare Plant Threat Rank

| | |
|---|---|
| 0.1 | Seriously Threatened in California |
| 0.2 | Fairly Threatened in California |
| 0.3 | Not Very Threatened in California |

Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site, provide potential rearing/spawning habitat for Chinook salmon and Central Valley steelhead during spring and early summer when flows are adequate and water temperatures are below 77 degrees Fahrenheit. Work in and adjacent to streambeds has the potential to indirectly or directly affect Chinook salmon or Central Valley steelhead.

### Western Pond Turtle

The western pond turtle, a State Species of Special Concern, is found in a variety of habitats (e.g. ponds, reservoirs, streams, rivers, ditches, sloughs) from sea level to approximately 6,000 feet in elevation. Pond turtles prefer ponds or slow-flowing streams with deep pools. The western pond turtle can be found in relatively shallow waters (i.e., 6 inches) when migrating up and down drainages, but generally desire water deep enough so they can escape predators. Such habitats often have muddy bottoms. The presence of suitable basking sites is often an important habitat component for western pond turtles. Basking sites may include partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Courtship and mating occur primarily in late April or early May. Most egg-laying occurs in May and June, although some females may deposit a second clutch of eggs later in summer. Nests are usually within 500 feet of water.

Nests are generally found in substrates that have a high sand, clay, or silt component, and are generally located on unshaded, south-facing slopes. Using their hind feet, female turtles will excavate a shallow 2-3 inch-deep, flask-shaped nest with an opening approximately 1.5 inches in diameter. From 1 to 13 eggs are deposited in the nest. Females will often cover the nest site with leaf litter and soil to conceal the nest. Eggs hatch approximately 80 to 130 days later. Hatchlings generally emerge from the nest in August and move to aquatic sites, although in some populations in the northern part of the species' range, hatchlings may overwinter and emerge from the nest the following spring. Adult and juvenile western pond turtles generally leave aquatic sites in the fall to overwinter in nearby uplands and return to aquatic sites in the spring. Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site provide potential habitat for western pond turtles during spring and early summer. Work in and adjacent to these waters has the potential to indirectly or directly affect the western pond turtle.

### Western Spadefoot Toad

The western spadefoot toad, a California Species of Concern, breeds from January through May in shallow, temporary pools that persist for at least three weeks. Breeding pools are generally absent of bullfrogs, fish, and crayfish. After breeding, adults seek shelter underground either by excavating a subterranean burrow or retreating into a small mammal burrow nearby. Tadpoles transform within three weeks. Following transformation, juveniles leave breeding pools and seek shelter underground. Western spadefoots remain underground until breeding pools form the following spring. Surveys for the species in the project site were conducted on March 26 and April 2, 2015 during the early evening and nighttime hours. No frog or toad tadpoles were observed in any of these habitats, nor is there an expectation that the western spadefoot toad is present. The onsite aquatic habitats remained ponded for a length of time considered normal for similar shallow habitats in the Redding area. The results of these surveys provide a reliable basis for concluding that western spadefoot toads are not utilizing the onsite aquatic features as breeding habitat.

### Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp, a federally Threatened species, was identified relatively recently, in 1990, and there is little information on the historical range of the species. Vernal pool fairy shrimp are currently known to occur in a wide range of vernal pool habitats in the southern and Central Valley areas of California, including the Stillwater Plains in Shasta County, and in vernal pool habitats within the "Agate Desert" area of Jackson County, Oregon. Vernal pool fairy shrimp occupy a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Although the species has been collected from large vernal pools, including one exceeding 25 acres, it tends to occur in smaller pools. It is most frequently found in pools measuring less than 0.05 acre. These are most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. Vernal pool fairy shrimp have been collected from early December to early May. Females carry their eggs in a ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the mother dies and sinks. When the pool dries out, so do the eggs. They remain in the dry pool bed until they hatch in response to rains and other environmental stimuli.

Vernal pool tadpole shrimp, a federally Endangered species, has a patchy distribution across the Central Valley of California, from Shasta County southward to northwestern Tulare County, with isolated occurrences in Alameda and Contra Costa Counties. Although vernal pool tadpole shrimp are spread over a wide geographic range, their habitat is highly fragmented and they are uncommon where they are found. Vernal pool tadpole shrimp inhabit vernal pools containing clear to very turbid water. The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the shrimp emerge from cysts that lie dormant in the dry sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools have been filled. Some cysts hatch immediately while others remain dormant in the soil, hatching later in the rainy season.

The wet swales on Lots 60-69 and 77-79 have a low potential to support the federally listed vernal pool fairy shrimp and/or vernal pool tadpole shrimp. If present, work could indirectly affect these species.

### Valley Elderberry Longhorn Beetle

The VELB, a federally Threatened species, is associated with elderberry shrubs in California's Central Valley. In the Central Valley, the elderberry shrub is often associated with riparian forests along rivers and streams and occurs from near sea level to approximately 9,000 feet in elevation. Currently, the beetle persists in scattered localities along the Sacramento, American, San Joaquin, Kings, Kaweah, and Tule rivers, and their tributaries.

The beetle’s entire life cycle involves elderberry shrubs that are at least one inch in diameter at ground level. As elderberry flowers begin to open during the spring, adult beetles emerge from pupation inside the wood. Exit holes formed by the emerging adults are distinctive small oval openings. Often these holes are the only indicators that the beetles occur in an area. Adults eat elderberry foliage until approximately June. After mating, females lay eggs in crevices in the bark. After hatching, the larvae tunnel into the wood where they will remain for one to two years. The interior wood is the larva’s only food source.

Approximately five elderberry clusters have been identified on the project site. Given the high density of vegetation on the steep slopes where the elderberries were observed, it is possible that others are present, but were not detected. Work has the potential to directly and indirectly affect VELB.

## 5.4.2 METHODOLOGY

### BIOLOGICAL ASSESSMENT AND ESSENTIAL FISH HABITAT EVALUATION

Biological studies prepared to address the project proposal include botanical and wildlife evaluations, a wetland delineation, and an oak woodland assessment (refer to Appendix 15.4, BIOLOGICAL RESOURCES DOCUMENTATION).

**Botanical Evaluation**

Botanical evaluations were conducted on multiple occasions to determine if special-status plant species, plant species proposed for listing, and/or designated critical habitat for federal endangered and threatened species are present in the project area or may be affected by project implementation. On the first occasion, a botanical survey of the project site was conducted on April 11, 2005. The results of the survey are contained in Wildland Resource Manager's report, "Biological Review for Geringer's Capitol "Tierra Robles Ranch," prepared in 2015." It is unknown if any records searches were conducted at the time that this initial botanical evaluation was conducted.

On subsequent occasions, ENPLAN conducted botanical surveys of the site on May 9, 10, and 23, 2012; June 1 and 5, 2012; and on March 7, 2014. Prior to the botanical surveys, various records were checked to identify state or federally listed and proposed plant species previously reported in the vicinity, as well as other plant species potentially affected by project implementation. These records included the USFWS official species list for the project site, CNDDB records within a 10-mile radius of the project site, and critical habitat GIS data maintained by the USFWS. The field surveys were undertaken in general accordance with CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. Some field surveys were conducted during the blooming period (late May to early June) for slender Orcutt grass, which is the only federally listed plant species identified on the USFWS species list for the project site and the only special-status plant species reported within 10 miles of the project area.

The survey consisted of an intensive and systematic evaluation of the proposed project site. All plant species observed during the botanical surveys are documented in Table 5.4-1, PLANT SPECIES OBSERVED. All of the special-status plant species potentially occurring in the project area would have been evident at the time the fieldwork was conducted.

The records search for special-status plants was updated in 2016; no new occurrences of state or federally listed plant species, plant species proposed for listing, or critical habitat designated for federally listed plant species were added in the interim period that could potentially be affected by the proposed project.

**Wildlife Evaluation**

Wildlife evaluations were conducted by Wildland Resource Management on numerous field visits between 2005 and 2016 to determine if special-status animal species, animal species proposed for listing, and/or designated critical habitat for federal endangered and threatened species are present in the project area or may be affected by project implementation. On the initial field visits, a wildlife survey of the project site was conducted on July 12 and August 27, 2005. In addition to the field surveys, background information included review of the CNDDB. The results of the initial survey are contained in in Wildland

Resource Management's report "Chatham Ranch Biological Evaluation," prepared in 2005, and summarized in the 2015 report "Biological Review for Geringer's Capitol 'Tierra Robles Ranch'."

A subsequent wildlife survey of the project site was conducted by ENPLAN on July 3, 2012. Animal species observed while conducting the wildlife surveys were documented. Prior to conducting the subsequent wildlife survey, various records were checked to identify state or federally listed, or proposed animal species previously reported in the vicinity of the study area and to identify species potentially affected by project implementation. These records included the USFWS official species list for the project site, California Native Plant Society records, CNDDB records within a 10-mile radius of the project site, CalFish records (contained in CDFW's BIOS database), critical habitat GIS data maintained by the NMFS and USFWS, and EFH data maintained by NMFS. The evaluation also determined whether designated critical habitat for federally listed animal species and/or EFH for Chinook salmon are present in the project area. In addition, consultation with CDFW staff also occurred on several occasions. The records search was updated in 2016 and 2017. No new occurrences of special-status animal species, animal species proposed for listing, or critical habitat designated for federally listed animal species were added that would be affected by the proposed project.

All animal species observed while conducting the wildlife surveys are documented in Table 5.4-2, ANIMAL SPECIES OBSERVED.

The habitats and special habitat elements in the project area were identified through field investigation. Based on the results of the records review and field inspection, the potential for state or federally listed, or proposed animal species to utilize habitats in the study area was determined. Species that are proposed for listing can become listed during the course of the environmental, entitlement, and permitting work for a project and as such are typically addressed as if they are listed. Many of the special-status animal species and animal species proposed for listing potentially occurring in the project area would have been evident at the time the field work was conducted. Determination of the potential presence of other state or federally listed animal species and animal species proposed for listing could readily be made based on observed habitat characteristics. For wildlife, habitat characteristics are often the best measure of determining whether a particular special-status species may be present.

Temporary pools on the proposed project site provide potentially suitable breeding habitat for western spadefoot, a State Species of Special Concern. Habitats on the proposed project site potentially capable of supporting breeding grounds for western spadefoot were surveyed in on March 26 and April 2, 2015 during the early evening and nighttime hours to determine the presence or absence of these species. Although seasonal wetlands in the project site could provide potential suitable habitat for federally listed species of vernal pool branchiopods (e.g., vernal pool fairy shrimp and vernal pool tadpole shrimp), protocol-level surveys to determine the presence of vernal pool branchiopods in seasonal wetlands were not conducted.

### Wetland Delineation

As described in the wetland delineation report "Wetlands Delineation for Chatham Ranch," prepared for the project in 2008, project area contour maps were used to conduct site reviews and wetland mapping between June and August 2006. Site vegetative characteristics, topographic features, and habitats were noted. The wetland delineation methodology generally followed the United States Corps of Engineers (Corps) Wetland Delineation Manual, Technical Report Y-87-1, January 1987. The location and reach of the stream courses was determined by using a Garmin GPS 12 hand-held unit and Bushnell "Yardage Pro"

range finder and a Keyson two-hundred-foot tape measure. The delineation was initiated at the downstream end of the jurisdictional watercourse, the stream being mapped moving upstream until either the direction or the width of the stream changed or a tributary was found. At each stream course change or tributary confluence, a GPS waypoint was recorded. Each tributary was mapped from the confluence of the main stream to the head of the tributary. Mapping was then continued on the main stream until the next tributary was reached. This process was continued until the entire reach of the stream and all joining tributaries were mapped.

Stream courses were flagged at junctions of tributaries. GPS points were taken at stream junctions and where stream course changed direction or width. Stream courses were defined by flow lines or the "ordinary high water mark" (OHWM). The OHWM mark was usually determined by cut banks, shelving, the presence of clear natural lines on the bank, and removal of vegetation. In the upper reaches, the presence of liter and debris and water movement was noted. The distance across the OHWM was measured using the flexible 200-foot measuring tape. Widths were recorded for each stream reach of a given width.

The pre-jurisdictional wetlands delineation report was submitted to the Corps for verification on September 25, 2009. Subsequently, a field visit between the Corps and consultant who prepared the report occurred on March 30 and 31, 2010. As a result of the field meeting, an addendum to the wetland delineation report, the "Chatham Ranch Wetland Delineation Addendum," was prepared in May 2011 to incorporate changes requested by the Corps. Verification of the wetlands mapping was received from the Corps on October 24, 2011. A Corps verification is valid for a 5-year period; therefore, the existing verification may be subject to renewal if wetlands or other waters of the U.S. are impacted by the proposed project.

**Oak Woodland Assessment**

The following methodology was used for the tree survey conducted at the proposed project site:

All trees within proposed building envelopes (areas within each lot where a structure may be placed) and road rights-of-way were measured and counted. Using a GPS system, each building envelope was first located in the field, flagged, and numbered. All road rights-of-way were identified by utilizing maps of the road system overlaid onto aerial photographs. The centerline of each road was flagged; road widths were determined from the road maps.

Each tree within the building envelopes and road rights-of-way was measured at diameter at breast height (dbh) using a Builtmore stick or a diameter tape. If a tree was multi-stemmed, but the fork occurred above ground level, only the largest stem was measured. If the stems originated from a parent root crown but had soil between the stems, each stem was counted as a tree. Any tree over 1-foot tall, regardless of diameter size, was counted. Each oak tree within a building envelope was counted and marked with orange tree marking paint. Each oak tree within the road rights-of-way was counted and marked with yellow tree marking paint. The approximate location of each tree was plotted and the data subsequently recorded in an Excel program to allow calculation of the amount of basal area[1] within each building envelope as well as total tree removal necessary for project implementation.

[1] Basal area is the area of a given section of land that is occupied by the breast-high cross-section of tree trunks.

***Shasta County Methodologies***

The State of California provides for oak protection through Senate Bill 1334, Oak Woodlands Conservation (last amended March 31, 2004). Oak woodlands supporting oaks exhibiting 5-inch or greater dbh are subject to the Act and must be evaluated. Because the proposed project site supports oaks meeting the above threshold, the oak woodland areas were evaluated to determine if tree removal associated with the proposed project would have a significant effect on the environment.

In consultation with Shasta County and CDFW, the University of California Integrated Hardwood Range Management Program (IHRMP) was applied to the proposed project in order to qualitatively evaluate the significance of the loss of oak woodlands, and apply appropriate mitigation measures.

## 5.4.3 REGULATORY SETTING

### FEDERAL

#### Endangered Species Act

The Federal Endangered Species Act (FESA) generally prohibits the "taking" of a species listed as endangered or threatened (16 USC 1532, 50 CFR 17.3). Under the FESA, the "take" of a threatened or endangered species is deemed to occur when an intentional or negligent act or omission results in any of the following actions: "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term "harm" includes acts that results in death or injury to wildlife. Such acts may include significant habitat modification or degradation if it results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. For projects with a federal nexus, Section 7 of the FESA requires that federal agencies, in consultation with USFWS or NOAA Fisheries, use their authorities to further the purpose of FESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. Section 10(a)(1)(B) allows non-federal entities to obtain permits for incidental taking of threatened or endangered species through consultation with USFWS or NOAA Fisheries.

Critical habitat is defined in Section 3(5)(A) of the FESA as (i) the specific areas within the geographical area occupied by a species, at the same time it is listed in accordance with the FESA, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Section 3(3) of the FESA defines "conservation" as to use and the use of all methods and procedures which are necessary to bring an endangered species or threatened species to the point at which the measures provided pursuant to the FESA are no longer necessary (i.e., the species is recovered and removed from the list of endangered and threatened species).

The designation of critical habitat directly affects only federal agencies, by prohibiting actions they fund, authorize, or carry out from destroying or adversely modifying critical habitat. Individuals, businesses, and other non-federal entities are not affected by the designation of critical habitat so long as their actions do not require a permit, a license, funding, or other support from a federal agency.

### Regulation of Activities in Waters of the U.S. and Wetlands

The Corps has primary federal responsibility for administering regulations that concern "waters of the U.S.," including jurisdictional wetlands. The Corps acts under two statutory authorities: 1) Rivers and Harbors Act (Sections 9 and 10) which governs specified activities in "navigable waters of the U.S.," and 2) Section 404 of the Clean Water Act, which regulate activities in wetlands and other waters. The Corps requires that a permit be obtained if a project proposes placing structures within, over, or under navigable waters and/or discharging dredged or fill material into "waters of the U.S." below the ordinary high-water mark in non-tidal waters. The Environmental Protection Agency (EPA), USFWS, the National Marine Fisheries Services (NMFS), and several other agencies provide comments on Corps permit applications.

### Migratory Bird Treaty Act

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA is administered by the USFWS and special permits from the agency are generally required for the "take" of any migratory birds.

### Federal Magnuson-Stevens Fishery Conservation and Management Act

The Federal Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan (FMP). The MSA requires federal agencies to consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agencies that may adversely affect EFH (MSA Section 305[b][2]). A component of this consultation process is the preparation and submittal of an Essential Fish Habitat Assessment (EFHA). The length of the EFHA will vary, based on project complexity and the magnitude of potential impacts on EFH, but all EFHAs must include the following information: (1) a description of the proposed action; (2) an analysis of the effects, including cumulative effects, of the proposed action on EFH, the managed species, and associated species, such as major prey species, included affected life history stages; (3) the federal agency's views regarding the effects of the proposed action on EFH; and (4) proposed mitigation, if applicable. In instances where MSA and FESA issues overlap, NOAA Fisheries encourages an integrated approach to consultation. The EFH mandate applies to all species managed under an FMP. For the Pacific Coast (excluding Alaska), there are three FMPs covering groundfish, coastal pelagic species, and Pacific salmon.

## STATE

### California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW has the responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code 2070). The CDFW also maintains a list of "candidate species," which are species that the CDFW formally notices as being under review for addition to the list of endangered or threatened species. In addition, CDFW maintains lists of "species of special concern," which serve as species "watch lists." Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered

or threatened species may be present in the project study area and, if so, whether the proposed project would have a potentially significant impact on any of these species. In addition, the CDFW encourages informal consultation on any proposed projects that may affect a species that is a candidate for state listing. In accordance with Section 15380 of the CEQA guidelines, species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined by CDFW. "Take" of protected species incidental to otherwise lawful management activities may be authorized under Section 2091 of the Fish and Game Code of California. Authorization from the CDFW would be in the form of an Incidental Take Permit. Under the CESA, project-related impacts of the authorized take must be minimized and fully mitigated, and adequate funding must be in place to implement the mitigation measures and monitor compliance with the measures and their effectiveness. Standard mitigation requirements can include land acquisition, permanent protection and management, and/or funding in perpetuity of compensatory lands.

### California Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code Section 1900-1913) prohibits the taking, possessing, or sale within the State of any plants with a state designation of rare, threatened, or endangered, as defined by the CDFW. An exception to this prohibition allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are plowed under to otherwise destroyed. Fish and Game Code Section 1913 exempts from the "take" prohibition "the removal of endangered or rare native plants from a channel, lateral ditch, building site, or road, or other right-of-way."

### California Fish and Game Code

Raptor species (birds of prey) are protected from "take" according to the California Fish and Game Code (Section 3503.5 1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW. California statutes also accord "fully protected" status to a number of specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be "taken," even with an Incidental Take Permit (California Fish and Game Code, Sections 3505, 3511, 4700, 5050, and 5515).

### Oak Woodlands Conservation Act

The State of California provides for oak protection through the Oak Woodlands Conservation Act (SB 1334, 2001), last amended in 2004, which applies to actions taken within unincorporated county areas in California. The Act requires the California Environmental Quality Act (CEQA) lead agency (when it is a county) to determine whether a project may result in a conversion of oak woodlands that will have a significant effect on the environment. If an agency determines that the project will have a significant effect on oak woodlands, the agency shall require implementation of one or more oak woodland mitigation alternatives. Oak woodlands supporting oaks exhibiting 5-inch or greater dbh are subject to the Act and must be evaluated.

### State CEQA Guidelines

Although threatened and endangered species are protected by specific federal and State statutes, State CEQA Guidelines §15380(d) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the Section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or the CDFW (e.g., candidate species, species or concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

### Regulation of Activities in Waters of the U.S. and Wetlands

The State's authority in regulating activities in "waters of the U.S." and wetlands resides primarily with the CDFW and the State Water Resources Control Board (SWRCB). The CDFW provides comment on Corps permit actions under the Fish and Wildlife Coordination Act. The CDFW is also authorized under the California Fish and Game Code to develop mitigation measures and enter into 1602 Streambed Alteration Agreements with applicants who propose projects that would obstruct the flow of, or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams. The SWRCB, acting through the Regional Water Quality Control Board (RWQCB), must certify that a Corps permit authorizing the fill of waters of the U.S. meets State water quality objectives. The State more broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050(e)). This broader definition would allow the State to regulate the discharge of dredge or fill material within waters not regulated by the Corps (e.g., isolated waters).

## LOCAL

### Shasta County General Plan

The Shasta County *General Plan*, last amended in 2004, serves as the general, long-range guiding policy document for future development in Shasta County. The *General Plan* provides goals, policies, and implementation measures to reduce impacts of projects on biological resources. Applicable goals and policies relative to the proposed project site are listed below.

*Objective FW-1.* Protection of significant fish, wildlife and vegetation resources.

*Objective FW-2.* Provide for a balance between wildlife habitat protection and enhancement and the need to manage and use agricultural, mineral extraction, and timber land resources.

- *Policy FW-b.* Recognition that classification of some fish, wildlife, and vegetation resources designated and used as Timberlands, Mineral Resource, Croplands, or Grazing lands does, in most cases, protect habitat resources. However, if there is a conflict, the timber, mineral extraction, or agricultural land use classifications mentioned above shall prevail in a manner consistent with State and Federal laws.

- *Policy FW-c.* Projects that contain or may impact endangered and/or threatened plant or animal species, as officially designated by the California Fish and Game Commission and/or the U. S. Fish and Wildlife Service, shall be designed or conditioned to avoid any net adverse project impacts on those species.

- *Policy FW-d.* The significant river and creekside corridors of Shasta County shall be designated on the General Plan maps. The primary purpose of this designation is to protect the riparian habitats from development and from adverse impacts from conflicting resources uses. The purpose is also to encourage open space and recreation (policy OSR-e). Mapping of significant waterway corridors in areas designated as resource protection lands is not required since it is assumed that resource land uses will also act to protect such waterway corridors. Riparian habitat protection along the significant river and creekside corridors, as designated on the plan maps shall be achieved, where appropriate, by the following measures:

    - Regulation of vegetation removal.
    - Design of grading and road construction to restrict sediment input to all streams.
    - Establishment of a development set-back.
    - The siting of structures, including clustering.
    - Recreation plans for the Sacramento River, Clear Creek, and other feasible waterway resources.

- *Policy FW-e.* Salmon spawning gravel in the following rivers and creeks shall be protected:

    - Sacramento River: Keswick Dam to Shasta-Tehama County line.
    - Battle Creek: Mouth to the mouth of South Fork Battle Creek.
    - Cow Creek: Mouth to Powerhouse on South Cow Creek; the mouth of Coal Gulch on Old Cow Creek; the mouth of Dry Clover Creek on Clover Creek; the mouth of Tracy Creek on Oak Run Creek; the mouth of Salt Creek on Little Cow Creek.
    - Cottonwood Creek: Mouth to west line of Section 6, T.29N., R.5W., M.D.B.& M.
    - Bear Creek: Mouth to the Highway 44 bridge.
    - Clear Creek: Mouth to Whiskeytown Dam.
    - Churn Creek: Mouth to Redding City limits.
    - Stillwater Creek: Mouth to the Highway 299E bridge.
    - Olney Creek: Mouth to mouth of Tadpole Creek.
    - Anderson Creek: Mouth to Interstate 5.

## 5.4.4 STANDARDS OF SIGNIFICANCE

### SIGNIFICANCE CRITERIA

In accordance with State *CEQA Guidelines*, the effects of a project are evaluated to determine whether they would result in a significant adverse impact on the environment. An EIR is required to focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria used to determine the significance of impacts may vary depending on the nature of the project. According to Appendix G of the State *CEQA Guidelines*, the proposed project would have a significant impact related to biological resources, if it would:

- *Have a substantial effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.* Refer to Impact 5.4-1, below.

- *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.* Refer to Impact 5.4-1, below.

- *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.* Refer to Impact 5.4-2, below.

- *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.* Refer to Impact 5.4-3, below.

- *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.* Refer to Impact 5.4-4, below.

- *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community, Conservation Plan, or other approved local, regional, or State habitat conservation plan.* Refer to AREAS OF NO PROJECT IMPACT, below.

Based on these standards, the effects of the proposed project have been categorized as either "no impact," a "*less than significant*" impact, or a "*potentially significant*" impact. Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a "*significant and unavoidable*" impact.

## AREAS OF NO IMPACT

In October 2012 and February 2016, the County prepared an Initial Study to determine significant effects of the proposed project. In the course of this evaluation, certain impacts of the proposed project were found not to be significant because of the inability of a project of this scope to create such impacts or the absence of project characteristics producing effects of this type. The effects determined not to be significant are not required to be included in primary analysis sections of the Draft EIR. As such, the following impacts either are not applicable to the proposed project or are not reasonably foreseeable and are not addressed further within this section (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT):

- *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community, Conservation Plan, or other approved local, regional, or State habitat conservation plan.*

## 5.4.5 POTENTIAL IMPACTS AND MITIGATION MEASURES

The findings from the various technical reports) have been referenced when determining potential impacts of the proposed project. Further information in this section is based on, but not limited to, the County's *General Plan*, available literature, and other publicly available information from responsible and/or trustee agencies. In accordance with CEQA, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. Biological resource impacts are analyzed below according to topic. Mitigation measures directly correspond with an identified impact.

| | |
|---|---|
| **IMPACT 5.4-1** | ***The proposed project could have a substantial effect, either directly or through habitat modification, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; or could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.*** |

**Significance: Potentially Significant Impact.**

**Impact Analysis:** The analysis presented below describes potential impacts to special-status species and habitats within the project area (refer to Appendix 15.4, BIOLOGICAL RESOURCES DOCUMENTATION).

***Natural Communities***

Implementation of the project as proposed would result in the following impacts to natural communities:

- Indirect effects to downstream waters (i.e., intermittent streams and swales) due to increased erosion and sedimentation.
- Conversion of approximately 46.2 acres of annual grassland into urban habitat (i.e., road ROW, building envelopes, open space access road).
- Fragmentation of approximately 42 acres of annual grassland in the residential RMAs.
- Conversion of approximately 146.24 acres of oak woodland habitat into urban habitat (i.e., road ROW, building envelopes, and open space access road).
- Fragmentation of approximately 300.4 acres of oak woodland in the residential RMAs.
- Potential for the introduction and spread of unique weed species to new habitats.

*Streams and Wetlands.* The proposed project has been designed to avoid streams and wetlands, and thus, would not result in the permanent fill of these features which could result in the loss of habitat for animal species that spend all or a portion of their lifecycle in water, particularly aquatic macroinvertebrates. However, temporary indirect effects to downstream waters could occur if sediments or pollutants enter drainages and degrade habitat for fish and other aquatic life (refer to Figure 5.4-2,

WATERS OF THE U.S.). Temporary impacts to the streams and wetlands will be avoided/minimized through implementation of standard erosion control and spill prevention measures (refer to Section 5.9, HYDROLOGY AND WATER QUALITY). No mitigation measures are warranted.

*Riparian Vegetation.* The proposed project has been designed to avoid the limited expanse of riparian vegetation that occurs along a portion of Clough Creek and along sections of the unnamed stream in the northeastern portion of the project site. The proposed project is thus not expected to affect riparian vegetation, nor result in temporary loss or degradation of habitat values. No mitigation measures are warranted.

*Annual Grassland.* The conversion of approximately 46.2 acres of grassland would result in the permanent loss of potential nesting habitat for ground-nesting birds and potential foraging habitat for a variety of wildlife including, but not limited to, black-tailed deer, coyote, black-tailed jackrabbits, gopher snakes, rattlesnakes, and California kingsnakes. Fragmentation of the remaining approximately 42 acres of grassland would result in loss of potential nesting and foraging habitat connectivity for wildlife due to "edge effects," including noise, lighting, entry by humans and domestic animals, polluted runoff, weed establishment, etc.

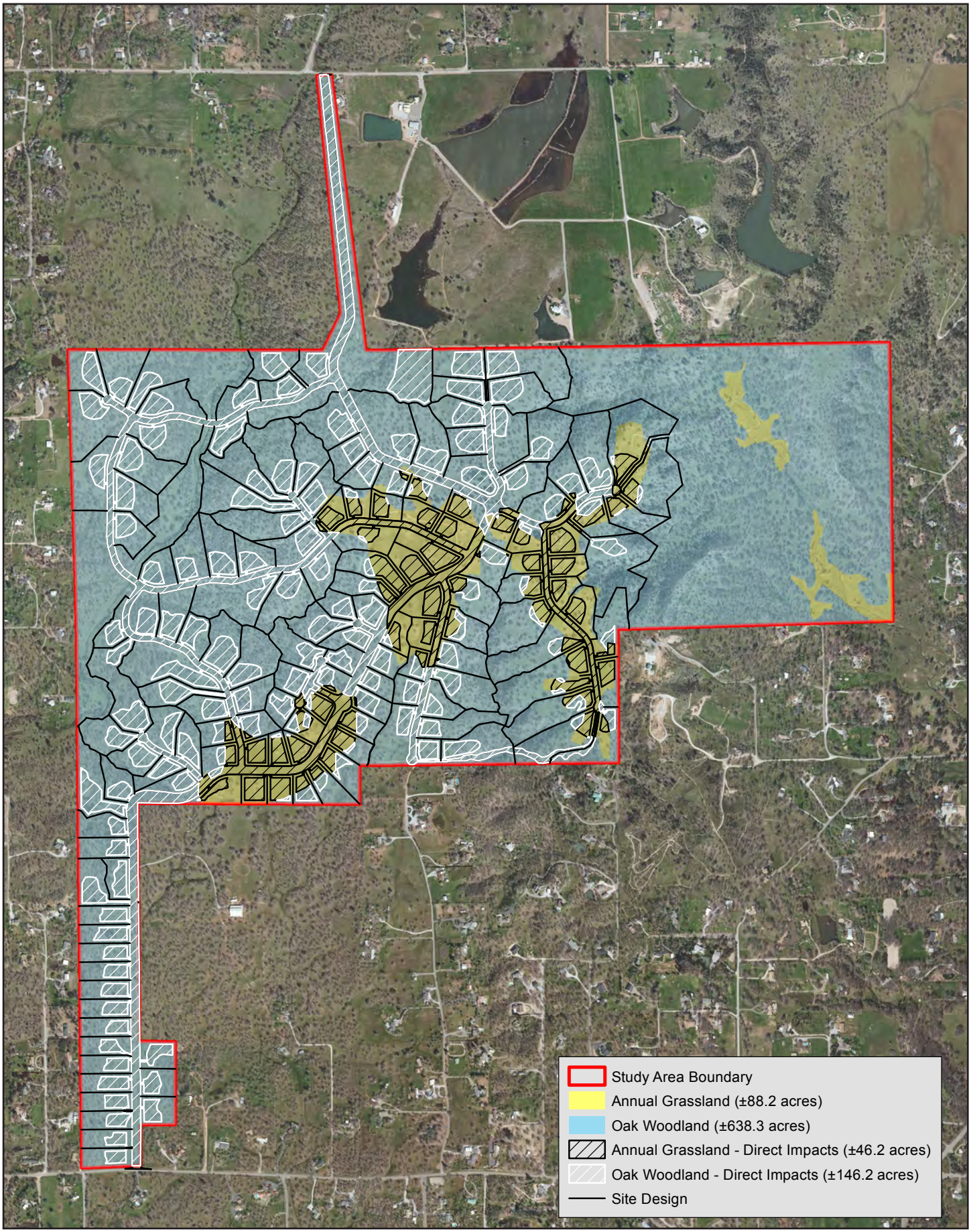
Annual grasslands are not considered a sensitive natural community by CDFW, and mitigation for the conversion of annual grasslands is typically not warranted. The annual grassland located on the project site is heavily disturbed by past and on-going seasonal livestock grazing. This has resulted in a low diversity of plant species, high proportion of introduced plant species, and a limited amount of vegetative cover for wildlife species; the onsite grassland offers no unique habitat values.

Therefore, the proposed protection of nearly half of the annual grassland in the residential RMAs (42 acres of 88.2 total acres of grassland) will provide sufficient mitigation. Impacts of the project on annual grassland habitat *are less than significant*. Refer to Figure 5.4-3, IMPACTS TO PRIMARY ONSITE HABITATS.

*Oak Woodland.* Approximately 88 percent of the project site supports an oak woodland. The dominant species in the oak woodland is blue oak (*Quercus douglasii*). Interior live oak (*Quercus wislizeni*) is occasionally interspersed with the blue oaks as a subdominant species, and is the dominant species on the steep side slopes of the eastern drainage. The onsite oaks vary in size from seedlings under one-inch diameter to trees of nearly 30 inches dbh.

Tree removal would result in the loss of potential nesting habitat for migratory birds, potential roosting habitat for bats, and potential shelter and foraging habitat for various animals such as squirrels, skunks, rodents, snakes, and lizards.

To assess the significance of project impacts on oak woodland, the methodology recommended by the University of California Integrated Hardwood Range Management Program (IHRMP) was applied. The IHRMP developed a qualitative matrix table to evaluate the significance of loss of oak woodlands. The IHRMP matrix table is based on ecological function and allows one to determine significance by comparing the site condition (intact, moderately degraded, or highly degraded) to the level of impact (low, moderate, or high). For the purposes of IHRMP evaluation, the oak woodlands in the project site are considered "intact." The project site has been managed for grazing but is relatively undisturbed and features significant ecological functions.

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N.T.S.

SOURCE:

TIERRA ROBLES PLANNED DEVELOPMENT • EIR

# Impacts to Primary Habitats

Figure 5.4-3

The impact of the proposed project on these oak woodlands is "high," which correlates to a significant adverse environmental effect. In accordance with the IHRMP methodology, the oak woodland impact area includes all new roads, utilities, landscaping, the full building envelope, and surrounding lands that are subject to "edge effects." As noted above, edge effects include direct and indirect impacts due to noise, lighting, entry by humans and domestic animals, polluted runoff, weed establishment, etc. These effects would lower the overall wildlife carrying capacity of the site and alter wildlife habitat values to favor species that can adapt to human activity.

- *Impact Calculation and Mitigation Requirement.* The oak woodland impact area totals 446.6 acres, of which 146.2 acres would be directly impacted (building envelopes and roads). All of the oak woodlands within the RMAs, a total of 300.4 acres, would be impacted due to edge effects; for the purposes of this evaluation, it is estimated there would be a 25 percent loss of oak woodland habitat values within the RMAs (even after taking into account the enhancement measures discussed below). Thus, project implementation would result in an impact equivalent to the direct loss of 221 acres (146.2 + (300.4 x 0.25)). The IHRMP recommends a 2:1 preservation ratio to compensate for oak woodlands adversely affected by proposed projects. At a 2:1 mitigation ratio, 442 acres of mitigation credit are needed to offset project impacts.

- *Mitigation Credit Calculation.* The project applicant is taking a number of steps to avoid impacts on oak woodlands and to enhance the value of the oak woodlands. With respect to avoidance, the project applicant has proposed the establishment of several open space preserves to provide at least partial mitigation for the loss of oak woodlands. Shasta County staff has reviewed the proposed preserves and finds that the onsite preserves provide better mitigation on a per-acre basis than would offsite preserves. Specifically, the onsite preserves include the principal onsite stream corridors, which provide some of the highest wildlife habitat values on the site. Because the onsite preserves abut the RMAs, they provide for enhanced buffering and reduction of edge effects. The onsite preserves are also clearly capable of supporting the same suite of plants and wildlife that occupy the planned development areas; this ability is unlikely to be met in full at offsite preserves. Finally, the onsite preserves provide "islands" and corridors for wildlife use and dispersal, which are particularly valuable in the urbanizing portions of the County. For these reasons, the County is applying a 1.25:1 mitigation credit ratio for the establishment of onsite preserves.

  With respect to enhancement, the open space preserves and RMAs will be managed by the TRCSD in accordance with the Tierra Robles Oak Management Plan; the Plan prescribes a number of measures that will help maintain and enhance the onsite oak woodlands in perpetuity. Plan implementation will provide for ongoing monitoring and maintenance of the oak woodlands, promote oak regeneration, ensure that a variety of tree size-classes are represented onsite, promote retention of snags and downed trees, maintain acorn production (which is essential for wildlife), and reduce fire hazards, especially the hazard of catastrophic wildfire. In recognition of the value added by the physical improvements and the independent management authority, the County is applying a 0.1:1 mitigation credit ratio for enhancement of the RMAs (which total ±300.4 acres) and the western open space preserves (which total ±37.6 acres). The much larger eastern open space preserve (±154.1 acres), would provide a consolidated block of wildlife habitat and would be predominantly well-buffered by adjoining RMAs. Edge effects in the eastern open space would remain relatively unchanged

from the current conditions. For these reasons, the County is applying a 0.2:1 mitigation credit for enhancement of the eastern open space.

In summary, the following mitigation credits related to oak woodlands apply to the proposed project:

| | |
|---|---|
| *Preservation of all open space preserves (191.7 acres @ 1.25:1 ratio):* | *239.6-acre credits* |
| *Enhancement of eastern open space preserve (154.1 acres @ 0.2:1 ratio):* | *30.8-acre credits* |
| *Enhancement of western open space preserve and RMAs (338.0 acres @ 0.1:1 ratio):* | *33.8-acre credits* |

These onsite mitigation credits total 304.2 acres. The remaining mitigation requirement of 137.8 acres would be met through purchase of an offsite conservation easement. Dual use of the offsite conservation easement to meet both oak woodland and agricultural land protection requirements is appropriate.

**MM 5.4-1a** requires a permanent offsite conservation easement to be established for the preservation of 137.8 acres of blue oak woodland. As required by **MM 5.4-1b**, the area classified as Open Space would be protected through establishment of conservation easements and deed restrictions to ensure protection of oak woodland values. The conservation easements would be held by a conservation-oriented third-party entity acceptable to Shasta County to ensure ongoing monitoring and management of both the offsite and onsite conservation areas. Several qualified entities currently hold conservation easements in Shasta County. For example, Shasta Land Trust is an accredited land trust that has successfully conserved approximately 22,000 acres of working ranches, wildlife habitat, and open space throughout Shasta County and adjacent areas. Western Shasta Resource Conservation District, a special district of the State, also holds several conservation easements in the County related to open space preservation and habitat restoration. Other land trusts that accept conservation easements within the County include Wildlife Heritage Foundation in Lincoln, Northern California Regional Land Trust in Chico, and Ducks Unlimited in Rancho Cordova.

**MM 5.4-1c** requires RMAs to be maintained in perpetuity. The RMAs would be managed for their oak woodland habitat values and for fire-hazard reduction, would provide a degree of connectivity with larger wildlife habitats and corridors, and would maintain a woodland structure capable of supporting nesting birds and small- to medium-sized wildlife species. With implementation of **MM 5.4-1a**, **MM 5.4-1b**, and **MM 5.4-1c**, impacts on the oak woodlands would be *less than significant*.

In addition, the Tierra Robles *Design Guidelines* address the protection and preservation of oak trees. A "Lotbook" page was prepared for each of the 166 lots for purposes of future site planning. Each Lotbook page identifies a building envelope, total tree basal area within the building envelope, and the total number of oak trees within the building envelope. In accordance with the *Design Guidelines*, an Architectural Review Committee appointed by the TRCSD would review all building and landscape plans prior to commencement of any clearing, grading, construction, or landscaping, to ensure oak trees outside of the established building envelope are not removed. In the event that the owner of a future lot desires to impact a greater basal area than identified on the Lotbook page for the property, the additional amount of trees removed over the baseline basal area will be assessed a fee at $75.00 per inch diameter by the TRCSD.

The *Design Guidelines*, which apply to all development within the project boundaries, include measures for the protection of oak trees during construction (prohibiting work within the dripline of any existing oak tree, requiring drainage improvements when necessary to ensure continued health of existing oak trees, etc.). The *Design Guidelines* also require planting an average of one street tree per 35 feet of lineal

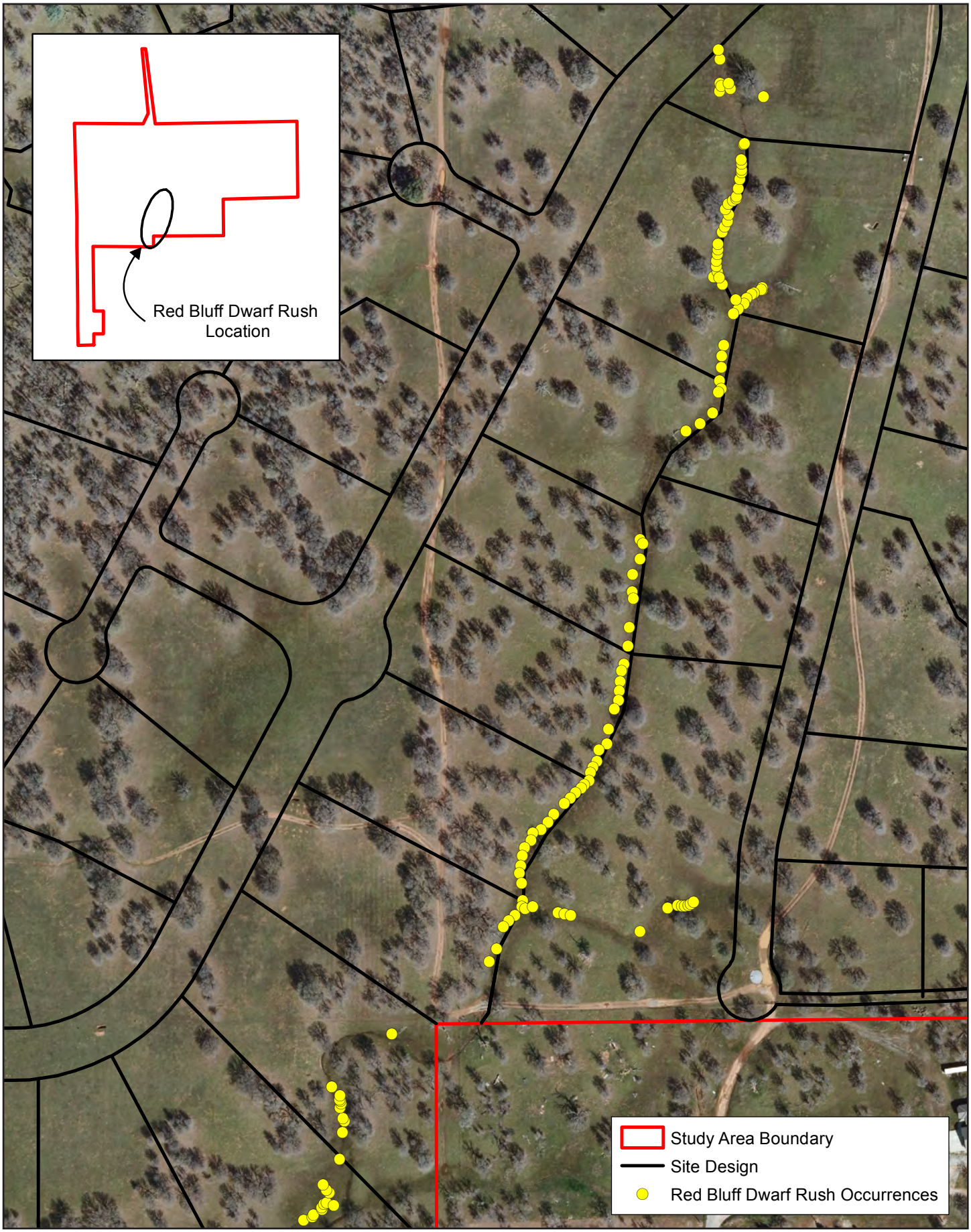
parcel frontage (minimum of three street trees for each parcel); 50 percent of the street trees must be native oak species. In addition, one tree must be planted on the property per 1,000 square feet of lot area where appropriate (in areas not already heavily forested). The *Design Guidelines* include a plant palette of trees, shrubs, and ground covers that complement the character of the oak woodland, grassland, and riparian setting.

*Weed Species.* A number of introduced weed species are present in the study area. The proposed project could potentially introduce additional weed species into the study area or facilitate the spread of unique weed species to other locations. The potential for introduction and spread of weeds can be avoided/minimized by using only certified weed-free erosion control materials, mulch, and seed; precluding the use of rice straw in riparian areas; limiting any import or export of fill to material known to be weed free; and requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the County (if the equipment has most recently been used within the County, cleaning would not be required), and requiring the contractor to thoroughly wash all equipment upon completion of its onsite use. With implementation of **MM 5.4-1d** impacts with respect to weed species would be *less than significant*.

***Special-Status Plant Species***

The USFWS official species list for the project site identifies one federally listed plant species, slender Orcutt grass, as potentially being affected by work proposed in the project area. Review of CNDDB records showed that one special-status plant species, silky cryptantha, has been mapped as occurring within the study area. Ten other special-status plant species are known to occur within a 10-mile radius of the study area: Ahart's paronychia, Bellinger's meadowfoam, big-scale balsamroot, Boggs Lake hedge-hyssop, legenere, northern clarkia, Red Bluff dwarf rush, Sanford's arrowhead, Shasta snow-wreath, slender Orcutt grass, Sulphur Creek brodiaea, and Shasta limestone monkeyflower. As shown in Table 5.4-4 and discussed above, one special-status plant species, Red Bluff dwarf rush, was observed in the project study area during a 2012 field evaluation. No other special-status plant species are expected to be present. The following discussion addresses potential effects on Red Bluff dwarf rush that could result from implementation of the proposed project.

*Red Bluff Dwarf Rush.* A population of Red Bluff Dwarf Rush was identified in a wet swale in the south-central portion of the project site. The plant population is located in the RMAs of approximately 13 lots, as shown in Figure 5.4-4, MAPPED OCCURENCES OF RED BLUFF DWARF RUSH. Although no development would occur in the RMAs, the RMAs and road as currently designed do not provide a sufficient minimum buffer (100 feet) from the mapped occurrence of Red Bluff dwarf rush. With the current project design, the dwarf rush occurs in or adjacent to the road right-of-way, and is 100 feet or less from about five building envelopes. Project implementation is considered potentially significant with respect to Red Bluff dwarf rush. With implementation of **MM 5.4-1e**, impacts would be *less than significant*.




N.T.S.

SOURCE:

TIERRA ROBLES PLANNED DEVELOPMENT • EIR

# Mapped Occurrences of Red Buff Dwarf Rush

Figure 5.4-4

### *Special-Status Animal Species*

The USFWS official species list for the project site identifies eight federally listed animal species as potentially being affected by work in the project area: Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, VELB, Delta smelt, Central Valley steelhead, California red-legged frog, and northern spotted owl (refer to Table 5.4-4, POTENTIALLY IMPACTED SPECIAL-STATUS SPECIES IN THE PROJECT AREA). Review of CNDDB records showed that no special-status animal species have been mapped as occurring within the study area. Seventeen special-status animal species (bald eagle, bank swallow, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, foothill yellow-legged frog, fisher, Pacific lamprey, purple martin, Shasta salamander, spotted bat, Central Valley steelhead, tricolored blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western pond turtle, and western spadefoot) and 10 non-status animal species (California linderiella, great egret, kneecap lanx, Oregon shoulderband, osprey, Shasta hesperian, Wintu sideband, Shasta chaparral, silver-haired bat, and western pearlshell) are known to occur within a 10-mile radius.

Although not reported on the USFWS species list for the project site or in CNDDB records, two additional special-status salmonids (Central Valley fall-run Chinook salmon and Central Valley late-fall-run Chinook salmon) are known to utilize the Sacramento River and large tributary streams. Review of CalFish database records (contained in CDFW's BIOS database) and the Stillwater-Churn Creek Watershed Assessment found no records of salmonids in seasonal streams in the study area. However, these streams are tributary to Cow Creek and Stillwater Creek, which are known to support rearing and/or spawning by Chinook salmon (i.e., winter-run, spring-run, fall-run, and late-fall-run) and Central Valley steelhead. Cow Creek and Stillwater Creek confluence with the Sacramento River approximately 10 miles downstream of the study area.

No special-status animal species were observed in the project study area during the wildlife evaluation; however, suitable habitat for several of these species occurs on the project site and the special-status species could potentially be present onsite at some stage of their cycle (refer to Table 5.4-2, ANIMAL SPECIES OBSERVED). As shown in Table 5.4-4 and discussed above, the following special-status animal species may potentially be affected by the proposed project: vernal pool fairy shrimp, vernal pool tadpole shrimp, VELB, Chinook salmon (fall-run, late-fall-run, winter-run, and spring-run), Central Valley steelhead, and western pond turtle. The following discussion addresses special-status animal species potentially affected by project implementation.

*Salmonids.* Special-status salmonids potentially affected by the proposed project are limited to Chinook salmon and Central Valley steelhead. The proposed project would not directly affect salmonids because all stream features would be fully avoided. Work adjacent to onsite streambeds has the potential to indirectly effect Chinook salmon and Central Valley steelhead that could be present in onsite and downsteam waters. Indirect effects on these species would occur if sediment or pollutant concentrations are sufficiently high to cause physical impairment of fish or degradation of spawning and/or rearing habitat. Compliance with conditions of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities would preclude potential indirect impacts to salmonids (refer to Section 5.9, HYDROLOGY AND WATER QUALITY). Potential impacts on Chinook salmon and Central Valley steelhead would be *less than significant*. No mitigation measures are warranted.

*Western Pond Turtle.* Clough Creek in the western portion of the site and an unnamed seasonal stream in the eastern portion of the site have a low potential to be utilized by western pond turtles for foraging or dispersal when water is present. The other seasonal streams in the study area do not provide suitable habitat for the western pond turtle. The proposed project would not directly affect western pond turtle because the project has been designed to fully avoid all streams. Indirect effects on these species would occur if sediment or pollutant concentrations are sufficiently high to cause physical impairment of turtles or degradation of turtle habitat. Compliance with conditions of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities would preclude potential indirect impacts to western pond turtle (refer to Section 5.9, HYDROLOGY AND WATER QUALITY). Potential impacts on western pond turtle would be *less than significant*. No mitigation measures are warranted.

*Bats.* Special-status bats could roost in trees in the project site. Vegetation removal associated with implementation of the proposed project could potentially cause physical harm to roosting bats, if present. Implementation of **MM 5.4-1f**, **MM 5.4-1g**, and **MM 5.4-1h** would reduce potential impacts to roosting bats to *less than significant*.

*Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp.* Vernal pool fairy shrimp and vernal pool tadpole shrimp have a low potential to be present in the wet swales on Lots 60-69 and 77-79. Habitat for these species could be directly or indirectly affected by work occurring in or near the swale. Project implementation would have a potentially significant impact on the vernal pool fairy shrimp and vernal pool tadpole shrimp. However, with implementation of the fencing, wastewater disposal requirements, and increased setback as required in **MM 5.4-1e,** potential impacts would be *less than significant*. No further mitigation is warranted.

VELB**.** At least five elderberry clusters have been identified on the project site. Because elderberry bushes are present, VELB could also be present. The plants appear to be confined to the proposed open space on the eastern side of the site, on steep slopes. Implementation of the proposed project could directly or indirectly affect VELB due to activities associated with the vegetation management plan for the proposed project. The vegetative management prescription for this open space area calls for removal of all brush and mid-story vegetation for a distance of 200 feet downslope of the crest of the slope. At least three elderberries are located within this zone; therefore, brush clearing could result in accidental removal of elderberries. Although the plan states that elderberry bushes should be retained where found, brush removal crews would be unlikely to recognize the bushes, particularly when leaves are absent. Project implementation would have a potentially significant impact on the valley elderberry longhorn beetle. With implementation of **MM 5.4-1i** and **MM 5.4-1j**, impacts would be *less than significant*.

***Critical Habitat***

Critical habitat is a specific geographic area that is essential for the conservation of a threatened or endangered species, and may require special management or protection. Critical habitat can be designated by the USFWS or the NMFS. The USFWS species list for the site does not identify designated critical habitat for any species.

Review of the USFWS' Critical Habitat Mapper and critical habitat data maintained by NMFS showed that no critical habitat has been designated in the project site. Critical habitat has been designated for slender Orcutt grass approximately 2.8 miles, 3.7 miles, and 4.4 miles southwest of the study area. Critical habitat has been designated for vernal pool tadpole shrimp and vernal pool fairy shrimp approximately 4.4 miles southwest of the study area. Critical habitat is designated for Central Valley steelhead approximately 0.6 miles east of the study area and approximately 1.8 miles west of the study area in Little Cow Creek and Stillwater Creek, respectively. Critical habitat is designated for Central Valley spring run Chinook salmon approximately 4 miles west and approximately 3 miles downstream of the study area in Stillwater Creek and Little Cow Creek, respectively.

No critical habitat designated for any federally listed species would be directly affected by the proposed work. However, critical habitat designated for salmonids in Cow Creek and Stillwater Creek could be indirectly affected. Critical habitat for these salmonids includes the river or stream water, bottom (including spawning substrate), and the adjacent riparian zone that provides cover, shelter, shade, and food for rearing juveniles. If sediments or pollutants were to enter these streams, they could impair water quality, cause sedimentation of spawning gravels, and otherwise result in degradation of critical habitat. Preparation and implementation of the required Storm Water Pollution Prevention Plan (SWPPP) that identifies Best Management Practices (BMPs) to minimize pollutants from discharging from the construction site would minimize potential indirect impacts to critical habitat (refer to Section 5.9, HYDROLOGY AND WATER QUALITY).

***Nesting Migratory Birds***

Although no active bird nests were observed on the proposed project site during the field inspections, birds are expected to establish nests in vegetation on or adjacent to these areas in future nesting seasons. The federal MBTA requires that nesting migratory birds not be adversely affected by human activities. Nesting migratory birds would potentially be directly or indirectly impacted by construction activities associated with the proposed project. Direct impacts include mortality resulting from removal of vegetation containing an active nest with eggs or chicks. Indirect impacts include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults. Most migratory birds anticipated to occur in the project area nest between February 1 and August 31. Implementation of **MM 5.4-1k** would reduce potential impacts to nesting migratory birds to *less than significant*.

***Other Potential Impacts***

The proposed project is entirely surrounded by local roads, such as Old Alturas Road and Boyle Road, as well as by residential and agricultural developments. These uses result in increased noise levels and increased night lighting, as well as other disturbances to wildlife, such as harassment by domesticated animals and the intrusion of pedestrians.

*Operational Noise***.** In general, increases in ambient noise levels related to development would primarily result from an increase in traffic volumes. Other sources of development-related increases in noise that may affect native wildlife include operation of landscape maintenance equipment and tools (e.g., mowers, blowers, trimmers, wood chippers), and loud music from vehicles and residences. Some of these noise sources, such as traffic noise, are relatively constant (although with daily cycles related to peak traffic periods), and some wildlife species may habituate and adapt to increased ambient noise levels, while

others may avoid noisy areas. Other noise sources are more occasional or discrete and are more likely to startle wildlife and at least temporarily disrupt their behavior at the time.

Most studies addressing the effects of noise on birds have focused on traffic noise (including road construction); however, other types of noise are expected to have similar effects on birds. In several studies, traffic noise has been found to reduce the density of nesting birds; one study found that 60% of woodland/forest bird species showed a reduction in nest density adjacent to roads. This may be due in part to masking of bird calls by traffic noise. However, other studies have shown no effects or minimal effects of noise on birds.

California Department of Transportation (Caltrans) has found that effects of traffic noise on birds may include physiological and behavioral effects, damage to hearing from acoustic overexposure, and masking of bird vocalizations which may lead to behavioral and population effects[2]. However, Caltrans also notes that no studies have definitively identified traffic noise as affecting birds with regard to stress and physiological effects, that birds are more resistant to acoustic overexposure than are humans and other mammals, that birds are able to regenerate sensory cells of the inner ear and can recover from acoustic overexposure, and that some birds may change their calls to compensate for traffic noise. Further studies are necessary to develop a science-based approach to evaluating potential impacts of noise on bird species.[3]

The primary sources of stationary noise in the project vicinity are associated with the existing residential and agricultural uses surrounding the site. The noise associated with these sources may include swimming pool pumps, heaters/air conditioners, generators, agricultural equipment, etc.

Although no active bird nests were observed on the proposed project site during the field inspections, birds could establish nests in vegetation on or adjacent to these areas in future nesting seasons, and could be affected by increased noise levels. While the proposed project would increase noise levels, the increase in noise is not considered to substantially interfere with potential nesting activity adjacent to the site based on the following: 1) the project site has and continues to experience disruption from human activity, especially on the fringes of the site nearest existing roads and residential and agricultural uses (i.e., off-highway vehicle use, pedestrian use, and mountain bike riding); 2) landscaping in the common areas in road rights-of-way and individual building envelopes would reduce noise levels outside of these areas; 3) the RMAs would provide a noise setback from the open space preserves; and 4) studies have been inconclusive as to the actual impact on birds, and further scientific-based studies are required to determine actual noise impacts on bird species. No additional measures are required.

*Nighttime Lighting.* Currently, only the fringes of the project study area are influenced by artificial light sources, including exterior and interior lighting associated with adjacent residential uses and vehicle headlights from motorists traveling along Old Alturas Road, Boyle Road, and several other local, residential roadways such as Northgate Drive, Green Oaks Lane, and Rae Lane. Artificial lighting has the potential to impact birds and other nocturnal species. These effects can include impacts to singing and foraging behavior, reproductive behavior, navigation, and altered migration patterns. In addition, nocturnal species may be more susceptible to predators due to increased lighting.

[2] https://www.fhwa.dot.gov/environment/noise/noise_effect_on_wildlife/effects/wild04.cfm
http://www.dot.ca.gov/hq/env/bio/files/caltrans_birds_10-7-2007b.pdf
[3] Ibid.

The proposed project would introduce new exterior light sources that include exterior wall-mounted lighting on the future residential buildings, and possibly wall-mounted safety and security lighting at the Community Wastewater Treatment System facility. However, as described in Section 3.0, PROJECT DESCRIPTION, and in accordance with the *Design Guidelines* prepared by Shasta Red, LLC, for the project, lighting should be carefully used and oriented or shielded to minimize glare to enhance the overall design concept of the home in an aesthetically pleasing manner. Exterior pool and landscape lighting must not infringe upon adjacent neighbors; therefore, glare shields are required to eliminate bright spots and glare sources. Exterior lighting should utilize low-voltage or similar non- glare direct task type fixtures and they should be as close to grade as possible. Exterior lighting must meet National and local codes and must be approved by the Committee prior to installation. Light fixtures shall be equivalent to "Good Light Fixtures" as defined by the International Dark Sky Association. Side shielding should restrict sideways light to at least 20 degrees below the horizontal plane at the light fixture. The Tierra Robles Architectural Review Committee (TRARC) would be responsible for reviewing architectural, site and landscaping plans, including exterior lighting, to ensure that the new sources of exterior lighting would result in minimal lighting impacts on the adjacent lands. In addition, new exterior lighting would, in part, be shielded by landscaping in the common areas in road rights-of-way and individual residential lots and existing, intervening vegetation, within the residential RMAs, or in the designated open space. No public street lighting would be constructed and no nighttime lighting shall be allowed in open space areas unless safety standards require otherwise.

As discussed in Section 5.1, AESTHETICS, all residential exterior lighting would be required to comply with the *Design Guidelines,* and §17.84.050 (Lighting), of the *Shasta County Code*. The *Design Guidelines* and *Shasta County Code* §17.84.050 require new exterior lighting to be oriented or shielded to minimize glare, and avoid light spillage onto adjacent neighbors. Shielding of light would reduce impacts on nocturnal wildlife species. Refer to Section 5.1, AESTHETICS, for further details regarding potential operation-related light and glare impacts. A *less than significant* impact would occur.

*Human Activity.* The proposed project site is mostly fenced with no trespassing signage which limits onsite human activity. With implementation of the proposed project, the level of human activity would increase and could potentially contribute to the degradation of adjoining undeveloped lands within the site (i.e., hiking and walking domesticated pets). However, as described in Section 3.0, PROJECT DESCRIPTION, Class 1 public bikeways, and pedestrian pathways would be located along project roadways, would encourage people to stay within the developed areas of the site. Although an increase in human activity would occur with long-term operation of the proposed project (residential occupancy), this level of human activity is not anticipated to degrade the designated open space preserves and RMAs to a significant extent, as activities in these areas would be regulated by the TRCSD. A *less than significant* impact would occur.

*Domesticated Pets.* Implementation of the proposed project would include residential development which could result in an increased number of domesticated animals being present on the site. Domestic animals can harass or kill wildlife, and deter use of otherwise suitable habitats by wildlife. However, it is unknown at this time the actual number of pets that any one household would have and if those pets would be ultimately allowed to roam freely outside. Therefore, the County cannot reasonably forecast the intensity of domesticated animals that could be onsite and any effort to quantify the potential degradation of onsite habitat and/or species would be speculative. However, **MM 5.4-1b** and **MM 5.4-1c** require open space and RMAs to be protected through establishment of conservation easements and

deed restrictions. The deed restrictions would prohibit dogs in these areas. Impacts would be *less than significant*.

*Offsite Improvements.* Several offsite intersection improvements have been identified for the proposed project (refer to **MM 5.16-1** through **MM 5.16-4** in Section 5.16, TRAFFIC AND CIRCULATION). These improvements would generally occur at-grade, within previously disturbed right-of-way and would to be constructed in accordance with County and/or City design criteria. Implementation of **MM 5.4-1k**, in addition to the proposed mitigation measures identified throughout this Draft EIR (refer to Section 5.2, AIR QUALITY, and Section 5.11, NOISE)**,** would be required during construction activities associated with **MM 5.16-1** through **MM 5.16-4**. Impacts would be *less than significant*.

**Mitigation Measures:**

MM 5.4-1a: Subject to review and approval by the Shasta County Resource Management Department Director, the applicant shall establish an offsite conservation easement covering a minimum of 137.8 acres of blue oak woodland in Shasta County. A detailed management plan guiding long-term preservation of the oak woodland, which may include a regulated intensity of grazing on the site, shall be provided for Shasta County review and acceptance prior to establishment of the easement. The management plan shall identify monitoring and maintenance activities, conservation easement and deed restriction terms, the easement holder, and remedial actions to be taken if the management plan objectives are not met.

A conservation-oriented third-party entity acceptable to Shasta County shall hold the conservation easement and shall be responsible for ongoing monitoring and management of the site in accordance with the management plan.

Monitoring reports shall be submitted to Shasta County at least once every three years; if management problems are identified or other concerns arise, the County may require submittal of more frequent reports (up to two per year) until the concerns are adequately addressed. Management activities shall be funded through an endowment account established by the project applicant or through fees collected by the Tierra Robles Community Services District.

MM 5.4-1b: Oak woodlands within designated open spaces on the development site shall be maintained in perpetuity. The open spaces shall be protected through establishment of conservation easements and deed restrictions. The five small open spaces shall be managed for their oak woodland values. The large eastern open space shall be managed for both oak woodland and seasonal grazing values. A management plan shall be provided for Shasta County review and acceptance prior to establishment of the easements and deed restrictions. The plan shall be consistent with the Oak Management Plan and shall identify monitoring and maintenance activities, conservation easement and deed restriction terms, the easement holder, and remedial actions to be taken if the management plan objectives are not met. The deed restrictions shall include a provision prohibiting dogs in the designated open space areas.

Should the Tierra Robles Community Services District ultimately own and maintain the onsite conservation easements, monitoring reports shall be submitted to Shasta County at least once every three years. If management problems are identified or other concerns arise, the County may require submittal of more frequent reports (up to two per year) until the concerns are adequately addressed.

Should the onsite conservation easements be held by a conservation-oriented third-party entity (acceptable to Shasta County), the third-party entity shall be responsible for ongoing monitoring and management of the onsite conservation easements in accordance with the Oak Management Plan. Monitoring and maintenance of the open spaces, in perpetuity, shall be funded through an endowment account established by the project applicant or through fees collected by the Tierra Robles Community Services District.

MM 5.4-1c: Resource Management Areas (RMAs) shall be maintained in perpetuity for their wildlife habitat values and for fire hazard reduction. The RMAs shall be protected through establishment of conservation easements and deed restrictions. Each RMA shall be managed by the Tierra Robles Community Services District as specified in the Final Tierra Robles Wildland Fuel/Vegetation Management Plan, which shall be provided for Shasta County review and acceptance prior to establishment of the easements and deed restrictions. The plan shall identify monitoring and maintenance activities, conservation easement and deed restriction terms, the easement holder, and remedial actions to be taken if the management plan objectives are not met. The deed restrictions shall include a provision prohibiting dogs within the RMAs. As required by the Tierra Robles *Design Guidelines*, a licensed land surveyor shall identify limits of the building envelope on each lot for easier identification of RMA boundaries.

MM 5.4-1d: Grading plans prepared by the project applicant shall note the following construction specifications designed to avoid the introduction and spread of weeds:

- Using only certified weed-free erosion control materials, mulch, and seed.
- Precluding the use of rice straw in riparian areas.
- Limiting any import or export of fill material to material known to be weed free.
- Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the County. If the equipment has most recently been used within the County, cleaning is not required.
- Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility immediately upon termination of its use at the project site.
- The project contractor shall continuously comply with the above stated measures throughout the duration of onsite and offsite construction activities.

MM 5.4-1e: Potential impacts to Red Bluff dwarf rush shall be avoided and minimized with implementation of the following:

- The areal extent and density of the Red Bluff dwarf rush population shall be documented by a qualified botanist through at least two years of baseline

monitoring in non-drought years. Monitoring shall be completed prior to final design of Lots 60-69 and 77-79, as well as the roads bordering these lots.

- Upon establishment of the baseline Red Bluff dwarf rush population boundary, the adjoining building envelopes, RMAs, and roads shall be redesigned to provide a minimum 100-foot buffer between the plant population and all roads and building envelopes.
- Low (±24-inch tall) post-and-cable fencing shall be constructed around the Red Bluff dwarf rush population prior to construction on any of Lots 60-69 or 77-79. The fencing shall be a minimum of 100 feet from the outer edge of the plant population. A conservation-oriented third-party entity acceptable to Shasta County shall be responsible for annual monitoring of the fence in perpetuity, and for ensuring that the fence is maintained in good condition at all times.
- Treated effluent from the onsite wastewater treatment plant shall not be disposed within 200 feet of the Red Bluff dwarf rush population.
- The project applicant shall preserve an offsite population of Red Bluff dwarf rush in perpetuity. The offsite preserve shall support an areal extent and density of Red Bluff dwarf rush equal to or greater than that of the onsite population. The mitigation site and a surrounding upland buffer shall be protected through implementation of deed restrictions or a conservation easement, and implementation of a management plan approved by Shasta County and CDFW. A third-party conservation-oriented entity acceptable to Shasta County shall hold the conservation easement and be responsible for monitoring and maintenance of the mitigation site in perpetuity, with the Tierra Robles Community Services District funding implementation of the management plan in perpetuity.

MM 5.4-1f: As part of the on-going vegetation management activities conducted by the Tierra Robles Community Services District, individual trees in the RMAs and open spaces that provide suitable bat roosting habitat (trees ≥12” dbh; trees with cavities, crevices, or exfoliating bark; and standing snags) shall be identified and retained. Removal of trees providing bat roosting habitat may be authorized by the Shasta County Resource Management Department Director if the Director determines that the tree(s) pose a significant hazard to the public due to their location and condition.

MM 5.4-1g: For all activities requiring a grading permit, conduct tree removal outside of the bat maternity season (i.e., remove trees between September 1 and February 28) if possible. If trees must be removed during the maternity season (March 1 through August 31), the following measures shall be implemented:

- Within two weeks prior to tree removal, daytime habitat assessments and/or nighttime emergence surveys shall be conducted to identify potential roost trees.
- Potential roost trees shall be removed using a two-step process to provide humane eviction of the bats. On Day 1, the non-habitat features on the trees shall be removed using chain saws for cutting and, as feasible, using chippers for disposal, with the objective being to create sufficient noise and vibration to

cause the bats to choose not to return to the tree after they emerge to forage. On Day 2, the remainder of the tree shall be removed, with no restrictions on removal methods.

MM 5.4-1h: Install three four-chamber bat houses within the Clough Creek open space and three four-chamber bat houses within the eastern open space parcel. The bat houses shall be located a minimum of 10 feet above ground in open areas oriented south-southeast, where they receive at least seven hours of direct sun daily. The bat houses shall be located in areas with high habitat diversity (e.g., near riparian, woodland, and grassland/open woodland habitats). The bat houses shall be annually inspected and maintained between November 1-February 1 (when bats are unlikely to be present), and shall be replaced as needed, by the Tierra Robles Community Services District.

MM 5.4-1i: Prior to conducting any vegetation removal in the eastern open space or on lots that are adjacent to the eastern open space, a qualified biologist shall conduct a thorough survey of the brush-removal area to identify all elderberry shrubs within the proposed work area. The survey should occur during the elderberry flowering period (generally late April to late June, depending on weather conditions) to ensure that the elderberries are visible. The location of all elderberries shall be accurately recorded and the elderberries shall be permanently marked in the field (e.g., through placement of T-posts at a distance of 20 feet outside of the elderberry dripline). No elderberries shall be pruned or removed, and no brush removal shall occur within 20 feet of the dripline of any elderberry with a basal diameter of one inch or greater.

MM 5.4-1j: Prior to each brush-removal operation in the general vicinity of the elderberries, the following actions shall be undertaken:

- High-visibility protective fencing or flagging shall be installed at a distance of 20 feet outside the driplines of elderberry shrubs; the fencing/flagging shall be maintained for the duration of each brush-removal operation.
- Environmental awareness training for all vegetation management personnel shall be provided by a qualified biologist. The objective of the training shall be to ensure that the vegetation management personnel can recognize habitats capable of supporting elderberries, identify elderberry plants of all sizes and conditions, understand the need for protection of the plants, and can properly implement protective measures. Confirmation of such training shall be maintained by the Tierra Robles Community Services District.

MM 5.4-1k: The following measure applies to any vegetation removal activities undertaken by the project developer or the Tierra Robles Community Services District for the purposes of fire-hazard reduction or oak woodland management, as well as to any onsite action by any entity that triggers the need for a grading permit (e.g., road construction, multi-lot developments, wastewater collection and treatment system construction, etc.). The measure does not apply to individual lot owners proposing activities that do not require a grading permit; it is the responsibility of individual lot owners to ensure that their actions comply with the Migratory Bird Treaty Act.

- If feasible, vegetation removal and construction shall be conducted between September 1 and January 31. If vegetation removal or construction must occur between February 1 and August 31, a nesting bird survey shall be conducted by a qualified biologist within one week prior to initiation of work; if active nests are present, work within 500 feet of the nest(s) shall be postponed until the young have fledged, unless a smaller nest buffer zone is authorized by the CDFW and USFWS. If a lapse in construction lasting two weeks or more occurs during the nesting season, an additional nesting bird survey shall be undertaken to ensure that no new nests have been constructed during the lapse. All nesting bird survey reports shall be kept on file with the Tierra Robles Community Services District and shall be provided to the California Department of Fish and Wildlife within one week following completion of each survey.

**Level of Significance After Mitigation:** Impacts would be *less than significant* with mitigation incorporated.

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| **IMPACT 5.4-2** | ***The proposed project could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*** |

**Significance: Less than Significant Impact.**

**Impact Analysis:** As previously described under Impact 5.4-1, above, the proposed roadway network would result in the crossing of Clough Creek at two bridge locations. The two crossings are designed as 40-foot span bridges to ensure the placement of the bridge piers would be outside the limits of the riparian zone along the stream channel. Other smaller crossings of natural onsite drainages will require shorter precast concrete structures. The proposed project would not result in the permanent fill of wetlands. Potential indirect impacts to jurisdictional waters would be reduced through compliance with conditions of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

**Mitigation Measures:** No mitigation measures are required.

**Level of Significance After Mitigation:** No mitigation measures are required. Impacts would be *less than significant*.

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| **IMPACT 5.4-3** | ***The proposed project potentially could substantially interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*** |

**Significance: Less than Significant Impact.**

**Impact Analysis:** The proposed project has the potential to affect local movements of fish and wildlife. As described above, work adjacent to streambeds could result in potential indirect effects on salmonids downstream in Cow Creek and Stillwater Creek. Potential indirect effects would be avoided with compliance with conditions of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (refer to Section 5.9, HYDROLOGY AND WATER QUALITY).

Terrestrial wildlife would not be significantly affected by the proposed project impeding or displacing seasonal movements. The proposed project site is currently bounded by Old Alturas Road to the north, and Boyle Road to the south, with residential properties and roads, and some agricultural operations, surrounding the project site in all directions. However, the site itself is a relatively large section of land for the area that wildlife can readily access, regardless of these existing roadways and developments.

Streams corridors are considered primary locations for wildlife migration corridors. However, implementation of the proposed project, would not incur development along streams. The RMA within each residential lot has been created to establish setbacks from property lines, stream channels and/or critical natural resources. These areas would remain undisturbed and would be managed by the private land owner under direction of the TRCSD. These areas would allow for travel corridors for wildlife. Additionally, the open space preserves, which accounts for more than a quarter of the total acres of the site, would also remain undeveloped under management of the TRCSD and would allow for wildlife movement. Regardless, wildlife movement would be impeded to some degree, but would not be considered a significant impact.

Deer and other large mammals likely utilize the proposed project site in its current state to some degree. In most areas, the site provides sufficient cover for deer and other large mammals and the interior of the site is subject to minimal to no noise and lights from adjacent roadways and other human activity. The onsite streams and ponds also provide a mostly seasonal water source for deer and other large mammals. Following development, the proposed project site has a higher potential to be used by smaller mammals such as raccoons and striped skunks, particularly if denning habitat is available nearby. Both of these species are highly adapted to human activity. Although an occasional roadkill can be expected, these species generally thrive in developed areas. Impacts are considered *less than significant*. No mitigation measures are warranted.

**Mitigation Measures:** No mitigation measures are required.

**Level of Significance After Mitigation:** No mitigation measures are required. Impacts would be *less than significant*.

| IMPACT 5.4-4 | ***The proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*** |
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**Significance: Potentially Significant Impact.**

**Impact Analysis:** As discussed in Section 5.4.3, REGULATORY SETTING (LOCAL), the Shasta County *General Plan* identifies objectives and policies aimed to protect significant fish, wildlife and vegetation resources. In addition, *Policy FW-c* requires that projects that contain or may impact federal or State

special-status plant or animal species shall be designed or conditioned to avoid any net adverse project impacts on those species.

As discussed above, the proposed project has been designed to avoid streams, wetlands, and riparian areas. Temporary impacts to the streams and wetlands will be avoided/minimized through implementation of standard erosion control and spill prevention measures. With implementation of specific mitigation measures outlined herein, the proposed project is consistent with the objectives and policies included in the *General Plan*.

Specifically, **MM 5.4-1a** and **MM5.4-1b** provide for the conservation and ongoing maintenance of oak woodlands; **MM 5.4-1c** requires maintenance of RMAs in perpetuity for their wildlife habitat values; **MM 5.4-1d** reduces the potential for the spread of noxious weeds that could impact wildlife habitat; **MM 5.4-1e** provides protection for Red Bluff dwarf rush; **MM 5.4-1f**, **MM 5.4-1g**, and **MM 5.4-1h** ensure protection of existing bat roosting habitat and create new bat roosting habitat; **MM 5.4-1i** and **MM 5.4-1j** provide protection of elderberry shrubs, the host plant of the larval stage of the valley elderberry longhorn beetle; and **MM 5.4-1k** ensures protection of migratory birds.

**Mitigation Measures:** Implement **MM 5.4-1a**, **MM 5.4-1b**, **MM 5.4-1c**, **MM 5.4-1d**, **MM 5.4-1e**, **MM 5.4-1f**, **MM 5.4-1g**, **MM 5.4-1h**, **MM 5.4-1i**, **MM 5.4-1j**, and **MM 5.4-1k**.

**Level of Significance After Mitigation:** Impacts would be *less than significant* with mitigation incorporated.

## 5.4.5 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

| IMPACT 5.4-5 | ***Cumulative development within the project area may affect sensitive biological resources, including special-status species, wetland habitat, and oak woodlands.*** |
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**Significance: Potentially Significant Impact.**

**Cumulative Setting:** Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The geographic scope for cumulative impacts to biological resources includes past, present, and reasonably foreseeable projects within the surrounding area, as identified in Table 4-1 in Section 4.0, BASIS OF CUMULATIVE ANALYSIS. This geographic scope of analysis is appropriate because it is likely that the projects identified in Table 4-1 would exhibit biological conditions typical of the region, and therefore, would have the potential to contribute to cumulative impacts on similar habitat and plant/wildlife species within the geographic area.

**Impact Analysis:** The cumulative projects would result in the construction of new buildings and structures in the general project vicinity. Although similar mitigation would be required for other reasonably foreseeable projects, these projects would result in the loss and fragmentation of wildlife habitats, loss of wildlife migration corridors, loss of oak woodlands, loss of streams and wetlands, and possible impacts on nesting migratory birds and special-status species.

***Riparian Habitat, Wetlands, Special-Status Species and Critical Habitat***

The proposed project has been designed to avoid direct impacts to riparian areas, wetlands, special-status species, and critical habitat. Preparation and implementation of a SWPPP that identifies BMPs to minimize pollutants from discharging from the construction site, combined with implementation of **MM 5.4-1d, MM 5.4-1e, MM 5.4-1f, MM 5.4-1g, MM 5.4-1h, MM 5.4-1i,** and **MM 5.4-1j,** would reduce potential indirect impacts on riparian habitat, wetlands, special-status species, and critical habitats to a *less than cumulatively considerable* level.

***Annual Grassland and Oak Woodlands***

Development of the proposed project would result in the conversion of approximately 46.2 acres of annual grassland to urban uses; fragmentation of approximately 42 acres of annual grassland; conversion of approximately 146.24 acre of oak woodland to urban uses; and fragmentation of approximately 300.4 acres of oak woodland, thereby contributing to the cumulative regional loss of grasslands and oak woodlands that may support special-status plant and animal species, nesting bird habitat, migration corridors, and general wildlife habitat.

Whereas **MM 5.4-1a** requires a permanent conservation easement to be established to partially offset the loss of oak woodlands, and **MM 5.4-1b** and **MM 5.4-1c** require permanent conservation easements and deed restrictions for the open space areas and RMAs for the protection of oak woodlands and habitat values, the conversion and fragmentation of annual grasslands and oak woodlands are irreversible losses of wildlife habitat and remain cumulatively considerable, and therefore, *significant and unavoidable* impacts.

**Mitigation Measures:** Implement **MM 5.4-1a**, **MM 5.4-1b**, **MM 5.4-1c**, **MM 5.4-1d**, **MM 5.4-1e**, **MM 5.4-1f**, **MM 5.4-1g**, **MM 5.4-1h**, **MM 5.4-1i**, **MM 5.4-1j**, and **MM 5.4-1k**.

**Level of Significance:** Cumulative impacts to annual grasslands and oak woodlands would be *significant and unavoidable*.