# APPENDIX C-1

# Biological Resources Assessment

**From:** Jane Valerius <jane@jvenvironmental.com>
**Date:** Monday, July 4, 2022 at 4:36 PM
**To:** Karen Massey <KMassey@burbankhousing.org>
**Subject:** RE: 155 DCR Wetlands Confirmation

[CAUTION----FROM EXTERNAL EMAIL]
Yes, the statement below is correct. Just as a clarification, the 0.73 acres includes 0.41 acres of wetland creation and 0.32 acres of existing wetland to be avoided/preserved, which is a total of 0.73 acres.
Thank you,
Jane

**From:** Karen Massey <KMassey@burbankhousing.org>
**Sent:** Monday, July 4, 2022 4:27 PM
**To:** Jane Valerius <jane@jvenvironmental.com>
**Subject:** 155 DCR Wetlands Confirmation

HI Jane,
Based on our most recent conversation with the ACOE, please confirm the following statement is correct so we can include in in the CEQA document:

"Site development would include removal of 0.25 acre of existing wetlands, construction of 0.41 acre of new functional wetlands on the western and northern portions of the project site outside of the 35-foot-wide Foss Creek riparian setback, and maintenance of the project site's existing drainage patterns. Wetlands would be replaced at a level slightly greater than a 1.64:1 ratio for a total of 0.73 acre of wetlands."

Thank you,
Karen

Karen Massey
***Senior Project Manager***
*Burbank Housing*
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**Opening Doors. Changing Lives**

**From:** Trish Tatarian <trish@wildliferesearchassoc.com>
**Date:** Monday, May 23, 2022 at 10:29 AM
**To:** Karen Massey <KMassey@burbankhousing.org>
**Cc:** 'Nuno, Elena' <Elena.Nuno@stantec.com>, Becky Duckles <bduckles@comcast.net>, Jane Valerius <jane@jvenvironmental.com>, Eileen <eileen@origer.com>, Eric Chase <echase@rghgeo.com>, Walter Beach <walt@hlenv.com>, Dalene Whitlock <dwhitlock@w-trans.com>, Jade Kim <jkim@w-trans.com>
**Subject:** Re: 155 Dry Creek Road Project Area Update - Request for Response

[CAUTION----FROM EXTERNAL EMAIL]

Hi Karen,

I agree that the increase of 0.17 acres to the project area acreage for a total of 3.70 acres does not affect the wildlife portion of the Biological Resource Assessment.

Trish

**From:** Jane Valerius <jane@jvenvironmental.com>
**Date:** Monday, May 23, 2022 at 1:01 PM
**To:** Karen Massey <KMassey@burbankhousing.org>
**Cc:** 'Nuno, Elena' <Elena.Nuno@stantec.com>, 'Becky Duckles' <bduckles@comcast.net>, 'Trish Tatarian' <trish@wildliferesearchassoc.com>, 'Eileen' <eileen@origer.com>, 'Eric Chase' <echase@rghgeo.com>, 'Walter Beach' <walt@hlenv.com>, 'Dalene Whitlock' <dwhitlock@w-trans.com>, 'Jade Kim' <jkim@w-trans.com>
**Subject:** RE: 155 Dry Creek Road Project Area Update - Request for Response

[CAUTION----FROM EXTERNAL EMAIL]
Hi Karen,

As you already know we need to revise the wetland delineation map to include the off-site areas as those need to be included even though no new wetlands were added. The delineation report will need to be resubmitted to the USACE and RWQCB for their verification. The addition of the off-site areas does not change the amount of impacts to wetlands as described in the BRA.

Ideally we should also update the BRA so that the project description matches what we have in the Wetland Mitigation Plan. The Wetland Mitigation Plan now shows an increase in wetland mitigation area from 0.53 to 0.55 acres so we should also change that. That does not, however, change the impacts.

I hope that is helpful. Thank you,
Jane

**From:** Karen Massey <KMassey@burbankhousing.org>
**Sent:** Monday, May 23, 2022 10:10 AM
**To:** Karen Massey <KMassey@burbankhousing.org>
**Cc:** 'Nuno, Elena' <Elena.Nuno@stantec.com>; Becky Duckles <bduckles@comcast.net>; Jane Valerius <jane@jvenvironmental.com>; 'Trish Tatarian' <trish@wildliferesearchassoc.com>; Eileen <eileen@origer.com>; Eric Chase <echase@rghgeo.com>; Walter Beach <walt@hlenv.com>; Dalene Whitlock <dwhitlock@w-trans.com>; Jade Kim <jkim@w-trans.com>
**Subject:** 155 Dry Creek Road Project Area Update - Request for Response

Good Morning,
It has come to our attention the site acreage previously provided to you (3.53 acres) does not include the area along Dry Creek Road that will accommodate the Project's frontage improvements (0.17 acres).

To correct the technical studies and City's record, please reply to this email acknowledging the total project area of 3.70 acres and indicating no changes to your technical studies as a result.
Thank you,
Karen


Karen Massey
***Senior Project Manager***
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**Opening Doors. Changing Lives**

# Biological Resource Assessment

155 DRY CREEK ROAD
HEALDSBURG, SONOMA COUNTY

January 31, 2022

*Prepared for*
Burbank Housing
Attn: Karen Massey
1425 Corporate Center Parkway
Santa Rosa, CA 95407

*Prepared by*
Wildlife Research Associates
1119 Burbank Avenue
Santa Rosa, CA 95407

*And*

Jane Valerius Environmental Consulting
6467 Eagle Ridge Road
Penngrove, CA 94951

# 155 Dry Creek Road, Healdsburg

## Biological Resource Assessment

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## SUMMARY

The 155 Dry Creek Road property (APN 089-071-002) is an approximately 3.53-acre parcel, located east of Highway 101 and north of Dry Creek Road, in the City of Healdsburg, Sonoma County, California. The proposed project consists of the construction of approximately 58 units of affordable housing with in two buildings with associated parking spaces, play areas and common open space areas (proposed project). The proposed project includes a 35-foot riparian setback that will be established along Norton Slough/Foss Creek which forms the western boundary of the property; however, no work will occur in the creek or in the setback area. For the purposes of this report, the Study Area encompasses 3.53 acres and consists of the entire parcel. The Project Impact Area encompasses 1.66 acres and relates to those areas proposed for permanent development. The total proposed work area and associated grading areas, which includes temporary areas, is 2.60 acres.

This Biological Resource Assessment presents the findings of our literature review (including scientific literature and previous reports detailing studies conducted in the area), the California Department of Fish and Wildlife's (CDFW) Natural Diversity Data Base (CNDDB), and the California Native Plant Society's (CNPS) on-line electronic inventory of rare and endangered plants of California for reported occurrences of special status vegetation communities, plants and animals as well as our site visits conducted in the spring/summer of 2021. The Biological Resource Assessment is part of the preliminary analysis of both the existing environment and potential impacts from the proposed project as required under the state California Environmental Quality Act (CEQA) and under the federal National Environmental Policy Act (NEPA) for new projects

Based on our site visit, three vegetation communities, comprising four wildlife habitat types, occur within the entire study area. The vegetation communities are non-native grasslands, mixed willow riparian woodland and seasonal wetlands. As part of this Biological Resource Assessment, we evaluated the potential for occurrence of 46 special status plant species and conducted floristic surveys for plants in the spring of 2021 to cover the flowering period for all special status plants with the potential to occur based on the presence of potential habitat. Of the 46 special status plant species identified, only 4 had the potential to occur on the parcel and none were identified during any of the protocol surveys conducted on the parcel; therefore, no further plant surveys are required.

A wetland delineation was also conducted in the spring of 2021. Two seasonal wetlands comprising a total of 0.57 acres of seasonal wetlands occur on the property. There will be approximately 0.25 acres of seasonal wetlands that will be impacted by the proposed project. A Section 404 nationwide permit will be obtained from the USACE along with a Section 401 water quality certification from the RWQCB for any impacts to the seasonal wetlands. Norton Slough/Foss Creek, which forms the western boundary of the site, is a waters of the U.S. and State and total approximately 0.14 acres of waters, but there will be no direct impacts to Norton Slough/Foss Creek or its riparian setback.

As part of this Biological Resource Assessment, we evaluated the potential for occurrence of 38 special status wildlife species, including bats, birds and western pond turtle to occur on the parcel. There is the potential for 11 species to occur within the entire study area and 9 species to occur within the proposed project impact area; however, no focused surveys for any special status wildlife species were conducted as part of this assessment.

To reduce impacts to the 9 special status wildlife species with the potential to occur within the proposed project impact area, we recommend the following:

- Focused surveys should be completed, as set forth in Table 2, for western pond turtle, nesting passerines, nesting raptors, and roosting bats to determine if special status species or their suitable habitat is present.

## INTRODUCTION

Burbank Housing contracted with Jane Valerius Environmental Consulting and Wildlife Research Associates to prepare this Biological Resource Assessment of the 155 Dry Creek Road property (APN 089-071-002), located east of Highway 101 and on the north side of Dry Creek Road, in the City of Healdsburg, Sonoma County, California (Figure 1). The approximately 3.53-acre parcel is proposed for an affordable housing project with approximately 58 units in two buildings and associated parking spaces, play areas and common open space areas.

This Biological Resource Assessment is part of the preliminary analysis of both the existing environment and potential impacts from the proposed project as required under the state California Environmental Quality Act (CEQA) and under the federal National Environmental Policy Act (NEPA) for new projects. Federal and state agencies that have purview over biological resources include the following:

- U.S. Army Corps of Engineers (USACE) - regulates the discharge of dredged or fill material into waters of the United States,
- U.S. Fish and Wildlife Service (USFWS) - authority over federally listed plant and animal species,
- National Marine Fisheries Service (NMFS) - authority over essential fish habitat, which is habitat necessary to maintain sustainable fisheries,
- California Regional Water Quality Control Board (RWQCB) - protects all waters with special responsibility for wetlands, riparian areas, and headwaters, and the
- California Department of Fish and Wildlife (CDFW) - authority over state listed plants and animals as well as streams and lakes within the State.

Please refer to Appendix A for details on regulations protecting special status species and sensitive vegetation communities.

For the purposes of this report, the Study Area encompasses 3.53-acres and consists of the entire parcel area. The Project Impact Area encompasses 1.66 acres and relates to those areas of the proposed permanent development. The total proposed work area, including associated grading areas and temporarily disturbed areas, is 2.60 acres.

### Site Location

The roughly rectangular-shaped parcel, located on the north side of Dry Creek Road and on the east side of Norton Slough, is bounded by commercial retail lands on the north, east, south, and west. The study area is located in an unsectioned portion of the Jimtown Rancheria in the southwest corner of the Jimtown 7.5-minute topographic quadrangle, within Township 9N and Range 10W (Figure 1). As shown on the Jimtown quadrangle, the drainage on the western side of the parcel is identified as Norton Slough; however, in this document the drainage is referred to as Norton Slough/Foss Creek.

### Project Description

The property was purchased in 2003 with 80% tax-increment monies (i.e., non-Low- and Moderate-Income Housing Funds) for the development of low to moderate income housing and the City of Healdsburg has slated the property for development of affordable housing. The primary goal of this project is to provide for the development of affordable housing that meets the needs of the community and enhances the Dry Creek Corridor. Burbank Housing is proposing an affordable housing project with approximately 58 units in two buildings with associated parking spaces, play areas and common open space areas.

The project will permanently develop 1.66 acres. The total permanent and temporary disturbance will be 2.60 acres. The new impervious surface area will be approximately 57,927 square feet (sf) and new pervious surfaces will be 14,383 sf. There will be approximately 2,473 sf of bioswales for water quality management. The project also includes approximately 1,000 linear feet of piping for sewer, water and electricity and approximately 14,383 sf of landscaping.

As part of the project, a 35-foot riparian setback will be established along Norton Slough/Foss Creek which forms the western boundary of the site (Figure 2), and no work will occur in the creek or the setback.

**Reasonable and Prudent Measures for Avoidance and Minimization of Effects**
In addition to the riparian setback and wetland avoidance measures, Burbank Housing will incorporate general avoidance and minimization measures and *Best Management Practices* (BMPs) in the construction of the project that will avoid and minimize potential effects of the project to special status species. These measures include, but are not limited to, the following:

1. *Work Windows*. Ground disturbance will be conducted during the dry season, generally between April 15 and October 15, of any given year, depending on the level of rainfall and/or site conditions.
2. *Proper Use of Erosion Control Materials*. Plastic or synthetic monofilament netting will not be used in order to prevent wildlife from becoming entangled, trapped, or injured. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include natural fibers such as jute, coconut, twine or other similar fibers. Following site restoration, any materials left behind as part of the restoration, such as straw wattles, should not impede movement of this species.
3. *Avoidance of Entrainment*. If a water body (e.g., pond or ditch) is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh smaller than 5 millimeters and intake placed within a perforated bucket or other method to attenuate suction to prevent amphibian larvae from entering the pump system. Pumped water shall be stored in a manner that does not degrade water quality and then upon completion released back into the water body, or at an appropriate location in a manner that does not cause erosion. No rewatering of the water body is necessary if sufficient surface or subsurface flow exists to fill it within a few days, or if work is completed during the time of year the water body would have dried naturally, or for predator control purposes.
4. *Trash*. All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day and removed from the site every three days.

## METHODS

Information on special status plant species was compiled through a review of the California Natural Diversity Data Base (CNDDB 2021) for the Jimtown, Healdsburg, Guerneville and Geyserville 7.5-minute topographic quadrangles, the California Department of Fish and Wildlife's (CDFW) Special Animals List (CDFW 2021), State and Federally Listed Endangered and Threatened Animals of California (CDFW 2021), the California Native Plant Society (CNPS) Electronic Inventory records (CNPS 2021), and the USFWS Information on Planning and Conservation (IPaC) list (USFWS 2021).

Botanical nomenclature used in this assessment conforms to Baldwin, et al. (2012) for plants and to *The Manual of California Vegetation*, 2nd Edition (Sawyer, et al. 2008) for vegetation communities. Appendix B presents a list of special status plant species reviewed for the proposed project. Appendix C provides a map of reported occurrences of special status plants.

Nomenclature for special status animal species conforms to CDFW (2021). Appendix D presents a list of special status animal species reviewed for the proposed project and Appendix C presents a map of recorded occurrences of special status wildlife species.

*Site Survey*: Trish Tatarian, Wildlife Research Associates, and Jane Valerius, Jane Valerius Environmental Consulting, conducted a survey of the parcel on May 13, 2021. The weather was warm (~72 Fahrenheit) and clear.

A formal delineation of waters of the U.S. and State, including wetlands, was also conducted on May 13, 2021. This delineation was conducted according to the 1987 Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers (2008), and U.S. Army Corps of

Engineers, San Francisco District (2007) guidelines. A delineation report was submitted to the U.S. Army Corps of Engineers (USACE) for their verification (Jane Valerius Environmental Consulting 2021). The delineation map was verified by the USACE on September 30, 2021 (Figure 3).

Surveys for special status plants were conducted on April 27, May 13 and June 9, 2021, to cover the flowering period for all special status plants with the potential to occur based on the presence of potential habitat. As required by CDFW protocols, the entire site was walked and all plant species identifiable at the time of the site visit were recorded by Jane Valerius. Appendix E provides a list of plants species observed.

Trish Tatarian evaluated the parcel for small mammal burrows, surveyed for suitable potential habitat for nesting birds and conducted a bat habitat assessment of the trees on the site. The habitats were surveyed for using 8 x 42 roof-prism binoculars, noting presence of cavities, crevices and exfoliating bark, as well as old bird nests and squirrel nests in trees. The reconnaissance-level site visit was intended only as an evaluation of on-site and adjacent habitat types, and no special status animal species surveys were conducted as part of this effort. Appendix F provides a list of wildlife species observed.

## EXISTING CONDITIONS

The study area is located within the North Coast Province (CDFW 2015). This province is located along the Pacific coast from the California-Oregon border to the San Francisco Bay watershed in the south (CDFW 2015). The eastern boundary includes the Cascade Range along the northern portion of the province and the transition to the Sacramento Valley along the southern portion. The coastal mountain ranges within the province are aligned somewhat parallel and rise from low to moderate elevation (i.e., up to about 7,500 feet) (CDFW 2015). The climate varies considerably across the province, with high precipitation levels and moderate temperatures in many coastal areas, and dry conditions with rain shadow effects and more extreme temperatures in some inland valleys. Overall, the province has a fairly wet climate and receives more rainfall than any other part of the state, feeding more than ten river systems (CDFW 2015).

The North Coast Province vegetation consists predominantly of conifer and mixed-conifer forests bisected by chaparral stands, riparian forests, and wetlands (CDFW 2015). Valley and foothill grassland and woodland communities emerge along the central and southeastern border of the province, while coastal wetlands and marshes appear along the coastline (CDFW 2015). Specifically, Douglas-fir, mixed-evergreen, western hardwoods, and chaparral-mountain shrub dominate the province (CDFW 2015).

The roughly rectangular-shaped approximately 3.53-acre parcel ranges in elevation between 135 feet in the northeast and 125 feet in the southwest and is situated west of the Russian River and east of Dry Creek. All creeks in this area flow generally from north to south. Norton Slough/Foss Creek originates approximately one mile north of Healdsburg and is fed by several drainages in the east. Foss Creek is located approximately 950 feet to the southeast and originates in the City of Healdsburg. Norton Slough/Foss Creek and Foss Creek merge approximately 4,820 feet to the south of the project area. Along the western boundary of the parcel, Norton Slough/Foss Creek supports a robust riparian vegetation community including within the 35' riparian setback; however, no work will occur in the creek or setback.

Norton Slough/Foss Creek, which is a perennial blue-line creek, forms the western boundary of the parcel. Two seasonal wetland areas were also mapped for the parcel (Figure 3). Surrounding land uses consist of commercial development within the City of Healdsburg.

### Vegetation Communities

A total of three vegetation communities occur on the parcel. A description of each community is presented below.

*Non-native grassland*: Upland vegetation on the site consists of non-native grassland dominated by non-native grasses including wild oats (*Avena barbata*), bromes (*Bromus hordaeceus, B. diandrus*), Harding grass (*Phalaris aquatica*), Mediterranean canary grass (*Phalaris minor*), hare barley (*Hordeum murinum* ssp.

*leporinum*), dogtail grass (*Cynosurus echinatus*) and large quaking grass (*Briza maxima*) (Fig. 4). Non-native forb species include mustard (*Brassica nigra*), wild radish (*Raphanus sativus*), fennel (*Foeniculum vulgare*), yellow star thistle (*Centaurea solstitialis*), bindweed (*Convolvulus arvensis*), English plantain (*Plantago lanceolata*), and vetch (*Vicia villosa, V. sativa*). There are some scattered trees within the grassland areas including coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*).

*Willow (Salix laevigata/Salix lasiolepis) riparian woodland*: Norton Slough/Foss Creek supports a dense stand of riparian vegetation that includes willows (*Salix laevigata, S. lasiolepis*.), oaks (*Quercus agrifolia, Q. lobata*), big-leaf maple (*Acer macrophyllum*), white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), Northern California black walnut (*Juglans hindsii*), elderberry (*Sambuccus nigra* ssp. *caerula*), and Himalayan blackberry (*Rubus armeniacus)* (Fig. 5). The understory herbaceous vegetation consists mainly of non-native grasses and forbs described above and along with invasive species such as French broom (*Genista monspessulana*) and giant reed (*Arundo donax*).

*Seasonal wetlands*. Two seasonal wetlands were mapped for the parcel. Dallis grass (*Paspalum dilitatum*) is dominant in the southern wetland area (Fig. 6). More typical wetland plants including tall flat sedge (*Cyperus eragrostis*), Santa Barbara sedge (*Carex barbarae*), rushes (*Juncus effusus, J. patens, J. xiphioides*), curly dock (*Rumex crispus*), scouring rush (*Equisetum arvense)* become more dominant closer to Norton Slough/Foss Creek where water ponds for a longer period of time. Other wetland plants noted include bird's-foot trefoil (*Lotus corniculatus*), ryegrass (*Festuca perennis*), and velvet grass (*Holcus lanatus*).

**Waters of the U.S. and State**

A formal delineation was conducted for the parcel and was verified by the USACE (Jane Valerius Environmental Consulting 2021). A total of 0.57 acres of wetlands and 0.14 acres of waters of the U.S. and state were mapped for the parcel (Figure 3). The seasonal wetlands occur as two features: W-1 and W-2. Wetland W-1 is 0.53 acres and occurs in the south-central portion of the site within the mapped AE flood zone. This wetland occurs as a broad swale feature that drains from the northeast to southwest towards Norton Slough/Foss Creek. Wetland W-2 is 0.04 acres and is fed by a storm drain culvert under the railroad tracks that flows onto the property and towards Norton Slough/Foss Creek in an east-west direction. Norton Slough/Foss Creek forms the western boundary of the site and is a perennial stream. The width at the ordinary high water mark for Norton Slough/Foss Creek averages approximately 20-feet. The property boundary includes a portion of Norton Slough/Foss Creek so that only 0.14 acres of waters of the U.S. and state occur within the study area boundary, although no work will occur in the creek or setback. Norton Slough/Foss Creek has a willow riparian canopy cover that includes oaks, walnut, elderberry, and Himalayan blackberry.

**Wildlife Habitats**

The value of a site to wildlife is influenced by a combination of the physical and biological features of the immediate environment. Species diversity is a function of diversity of abiotic and biotic conditions and is greatly affected by human use of the land. The wildlife habitat quality of an area, therefore, is ultimately determined by the type, size, and diversity of vegetation communities present and their degree of disturbance. Wildlife habitats are typically distinguished by vegetation type, with varying combinations of plant species providing different resources for use by wildlife. The following is a discussion of the wildlife species supported by the on-site habitats, as described by *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). The California Wildlife Habitat Relationship (CWHR) habitat classification scheme was developed by the CDFW to support the CWHR System, a wildlife information system and predictive model for California's regularly occurring birds, mammals, reptiles and amphibians. A description of the species supported in each habitat is presented below. Please refer to Appendix F for a list of species observed in the study area.

*Annual grasslands*: Non-native grasslands typically provide foraging, hunting and nesting habitat for a wide variety of wildlife species. California grasslands, once comprised of a wide variety of perennial grasses, riparian forests, vernal pools, wetlands, chaparral shrub, and open oak woodlands, are now at less than one

percent of pre-settlement following cropland conversion and urbanization, which has seen an increase since the 2000's (Audubon 2019). Small species using this habitat as primary habitat include reptiles and amphibians, such as southern alligator lizard (*Gerrhonotus multicarinatus*), western fence lizard and Pacific slender salamander (*Batrachoseps attenuatus*), which feed on invertebrates found within and beneath vegetation and rocks within the vegetation community. The grasslands on the site are typical of non-native grasslands and provide habitat for small mammals, such as meadow vole (*Microtis californicus*), and Botta's pocket gopher (*Thomomys bottae*), the evidence of which was observed primarily on the west side of the parcel. Other species potentially occurring on the site include opportunistic small mammals, such as western harvest mice (*Reithrodontomys megalotis*) and house mice (*Mus musculus*), which are attracted to nearby anthropogenic structures. Ground nesting passerines (perching birds), such as California quail (*Lophortyx californicus*), mourning dove (*Zenaidura macroura*), and meadowlark (*Sturnella neglecta*) are a few seed-eaters that nest and forage in grasslands, if feral cats are not in high numbers. Avian species inured to human habitation, such as California towhee (*Pipilo crissalis*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), American kestrel (*Falco sparverius*), and western scrub-jay (*Aphelocoma californica*), which forage and hunt in the grasslands but may nest in the trees, were observed on the property and likely nest on the parcel.

*Valley Foothill Riparian*: This habitat type contains food for species such as chestnut-backed chickadee (*Poecile rufescens*), Steller's jay (*Cyanocitta stelleri*), white-breasted nuthatch (*Sitta carolinensis*) and warbling vireo (*Vireo gilvus*). These species are bark gleaners, eating insects that are in the bark of trees, as well as catching insects in flight. The spotted towhee (*Pipilo maculatus*) and brown towhee (*Pipilo fuscus*) glean insects from the foliage on the ground, such as under leaf litter and plants and likely occur along the riparian corridor of Norton Slough/Foss Creek. Anna's hummingbirds (*Calypte anna*) use vines growing around trees for nectar and for insects that are attracted to the nectar. Other species, such as the great horned owl (*Bubo virginianus*) and Cooper's hawk (*Accipiter cooperii*), use the tall trees as roosting and foraging sights during the day. The western gray squirrel (*Sciurus griseus*) and gray fox (*Urocyon cinereoargenteus*) both feed on mushrooms, fruits and berries within the forest. Several of the trees were of a diameter large enough to support roosting bat species, such as long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*) and pallid bat (*Antrozous pallidus*).

*Fresh Emergent Wetland*: None of the wetlands supported ponding water. Rather they provided an above-ground moisture that is important to amphibians as they move across a landscape. Amphibian species potentially using the fresh emergent wetland include the Sierran chorus frog (*Pseudacris sierra*) and western toad (*Bufo boreas*) when they move away from water bodies to forage on terrestrial invertebrates. Vertebrate species that may opportunistically forage within the fresh emergent wetland within the study area include great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and raccoon (*Procyon lotor*), among others, feeding on amphibians. Aerial foraging species that hunt over marshy areas that supported winged insects include various swallow species, such as tree swallow (*Tachycineta bicolor*), and bat species, such as myotis (*Myotis* sp.).

*Individual Trees*. Individual trees are foraging and nesting habitat for passerines and raptors, and roosting habitat for bats. Smaller passerines, such as chestnut-backed chickadee (*Poecile rufescens*), bushtit (*Psaltriparus minimus*), oak titmouse (*Baeolophus inornatus*) and brown creeper (*Certhis americana*), all observed on the site, may nest and forage in the larger trees, feeding on insects on the bark. Cavities in the oak trees may provide potential nesting habitat for tree swallows (*Tachycineta bicolor*) and white-breasted nuthatch (*Sitta carolinensis*). No large cavities that may support the larger raptors, such as great horned owl (*Bubo virginianus*), were observed in any of the trees. Several stick nests were observed in the trees, some large enough to support nesting raptors, such as Cooper's hawks or red-shouldered hawks (*Buteo lineatus*). A single white-tailed kite (*Elanus luecurus*) was observed foraging in the grasslands. No nesting was detected in the 5.25 hours on the site.

Bats that use trees fall into three categories: 1) solitary, obligate tree-roosting bats that roost in the foliage or bark such as Western red-bat (*Lasiurus blossevillii*), or hoary bat (*Lasiurus cinereus*); 2) colonial tree-roosting bats that form groups of varying size in tree cavities or beneath exfoliating bark, such as silver-haired bats (*Lasionycteris noctivagans*), and 3) more versatile bat species that will use a wide variety of roosts from buildings to bridges to trees, such as various *Myotis* species, pallid bat (*Antrozous pallidus*), and others.

Solitary-roosting bats consist either of females alone or with young, or solitary males. Colonial-roosting bats may form maternity colonies in tree cavities or crevices, caves, mines, bridges, or other man-made structures. During the day, these roosts provide shelter and protection for adult females and their young, which remain in the roost while females forage at night, returning to nurse and care for their young. Greater impacts to bats can occur as a result of removal of trees that support cavity-roosting bat species than those that provide habitat for solitary foliage-roosting species.

A total of 59 trees were identified on the parcel. Of those 59 trees none of them contained cavities, crevices, or exfoliating bark sufficient to provide habitat for colonial tree-roosting bats. However, several of them provided suitable foliage roosting habitat and are identified in the table below (Table 1) (Fig. 7). Trees within the riparian setback area were not included in this Biological Resource Assessment because no work will occur in the creek or setback. The trees listed in Table 1 identify the tree species, the diameter and the type of bat habitat provided by the tree. See below, under Special Status Animal Species, for more details.

**Table 1: List of Trees with Suitable Potential Bat Roosting Habitat**

| Tree Number | Tree Species | Diameter (in.) | Bat Habitat Type |
|---|---|---|---|
| 4 | Coast live oak | 16, 18, 19 | Foliage roosting |
| 6 | Valley oak | 11 | |
| 7 | Coast live oak | 11 | |
| 8 | Coast live oak | 11 | |
| 13 | Valley oak | 8 | |
| 14 | Coast live oak | 8, 11 | |
| 15 | Coast live oak | 11, 11, 12 | |
| 17 | Valley oak | 13 | |
| 20 | Valley oak | 10 | |
| 21 | Coast live oak | 8 | |
| 22 | Valley oak | 8 | |
| 23 | Coast live oak | 8, 9, 10 | |
| 24 | Valley oak | 8 | |
| 25 | Valley oak | 5, 8 | |
| 26 | Valley oak | 11, 15 | |
| 28 | Valley oak | 10 | |
| 29 | Coast live oak | 5, 7, 7, 8, 7 | |
| 31 | Coast live oak | 10 | |
| 32 | Coast live oak | 10, 14 | |
| 40 | Coast live oak | 9, | |
| 41 | Coast live oak | 8, 6 | |
| 42 | Valley oak | 3, 4, 8 | |
| 43 | Coast live oak | 11 | |
| 57 | Willow | Multi-trunk | |

**Movement Corridors**
Wildlife movement includes migration (i.e., usually one way per season), inter-population movement (i.e., long-term genetic flow) and small travel pathways (i.e., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement among populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations comprising a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Potentially low frequency genetic flow may lead to complete isolation, and if pressures are strong, potential extinction (McCullough 1996; Whittaker 1998).

As described in the *California Essential Connectivity Project* (Spencer, et al. 2010), the approximately 3.53-acre study area is located in the North Coast Ecoregion (Spencer et al. 2010). The natural drainages in the area (e.g., Norton Slough and Foss Creek) flow south into the Russian River and west into the Pacific Ocean. The Study Area is not within a Natural Landscape Block (defined as relatively natural habitat blocks that support native biodiversity). The study area is not located in an Essential Connectivity Area (defined as areas that are essential for ecological connectivity between blocks) (Spencer et al. 2010).

Movement corridors for large and small mammals occur along Norton Slough/Foss Creek. The undeveloped nature of the parcel surrounded by commercial development on the east and west allows for this parcel to be used as a stepping-stone to areas further north. Norton Slough/Foss Creek allows for movement north and south despite the development in the area.

## SPECIAL STATUS BIOLOGICAL RESOURCES

Certain vegetation communities, and plant and animal species are designated as having special status based on their overall rarity, endangerment, restricted distribution, and/or unique habitat requirements. In general, special status is a combination of these factors that leads to the designation of a species as sensitive. The Federal Endangered Species Act (FESA) of 1973 outlines the procedures whereby species are listed as endangered or threatened. Additionally, FESA provides a means to conserve the ecosystems upon which listed species depend, to develop a program for the conservation of listed species, and to achieve the purposes of certain treaties and conventions. Moreover, the Act states that it is the policy of Congress that the Federal Government will seek to conserve threatened and endangered species and use its authorities in furtherance of the purposes of the Act (https://www.federalregister.gov/d/2019-15812/p-10). The California Endangered Species Act (CESA) amends the California Fish and Wildlife Code to protect species deemed to be locally endangered and essentially expands the number of species protected under the FESA.

**Special Status Vegetation Communities**
Sensitive natural communities are those that are considered rare in the region, may support special status plant or wildlife species, or may receive regulatory protection (i.e., through Section 404 of the CWA and/or Sections 1600 et seq. of the California Fish and Wildlife Code). In addition, sensitive natural communities include plant communities that have been identified as having highest inventory priority in the California Natural Diversity Database (CNDDB). *A Manual of California Vegetation* (Sawyer, et al. 2008) also provides the rarity ranking status of these communities.

One special status vegetation community has been reported in the CNDDB for the four topographic quadrangles, Jimtown, Healdsburg, Guerneville and Geyserville (CNDDB 2021): northern hardpan vernal pool. The wetlands on site are not vernal pool wetlands so this vegetation community is not present in the project study area. The *Salix laevigata/Salix lasiolepis* willow riparian community is listed by CDFW as a sensitive natural community. The riparian woodland community on site will be avoided, a 35-foot setback will be maintained, and no work is proposed to occur within the creek or setback.

**Special Status Plant Species**

Special status plant species are those species that are legally protected under the FESA and/or the CESA as listed or proposed for listing as threatened or endangered, as well as species that are considered rare by the scientific community. For example, the California Native Plant Society (CNPS) has identified some species as List 1 or 2 species and may be considered rare or endangered pursuant to Section 15380(b) of the State California Environmental Quality Act (CEQA) Guidelines. The CDFW has compiled a list of "Special Plants" (CDFW 2021), which include California Special Concern species. These designations are given to those plant species whose vegetation communities are seriously threatened. Although these species may be abundant elsewhere, they are considered to be at some risk of extinction in California. Although Special Concern species are afforded no official legal status under FESA or CESA, they may receive special consideration during the planning stages of certain development projects and adverse impacts may be deemed significant under the California Environmental Quality Act (CEQA).

A total of 46 special status plant species have been reported as occurring on the four topographic quadrangles (CNDDB 2021). See Appendix B for a list of the species evaluated.

The following set of criteria has been used to determine each species' potential for occurrence on the site in Appendix A:

- **Present**: Species is known to occur on the site, based on CNDDB records, and/or was observed onsite during the field survey(s).
- **High**: Species is known to occur on or near the site (based on CNDDB records within 5 miles, and/or based on professional experience) and there is suitable habitat onsite.
- **Moderate/Low**: Species is known to occur in the vicinity of the site, but there is only marginal habitat onsite -OR- species is not known to occur in the vicinity of the site, however, the site is within the species' range and there is suitable habitat onsite.
- **None**: There is no suitable habitat for the species onsite -OR- species was surveyed for during the appropriate season with negative results.

The majority of these species are not expected to occur within the project study area due to lack of habitat. The site does not have any serpentine, rhyolitic, sandy or alkaline soils and there is no coastal scrub, coastal prairie, closed-cone coniferous forest, North Coast coniferous forest, lower montane coniferous forest, chaparral, meadows and seeps or marshes and swamps within the study area.

Surveys for special status plants were conducted on April 27, May 13, and June 9, 2021. These surveys covered the flowering period for special status plants that had the potential to occur within the study area based on the presence of potential habitat. No special status plants were observed during the appropriately timed surveys and none are expected to occur. The surveys were conducted in a drought year. However, there was sufficient rainfall in the fall to winter months to allow for spring plants to flower based on surveys conducted in other areas of Sonoma County. The site is dominated by non-native grasses and forbs, many of them invasive species, and the cover is very dense which would assist in precluding any special status plants to establish in the area. Many native species were observed but they were all common species with no special status. None of the 46 special status plant species identified in the CNDDB are expected to occur due to lack of habitat and none were identified during any of the surveys for special status plants. Therefore, no further surveys are required.

**Special Status Animal Species**
Special status animal species include those listed by the USFWS (2021) and the CDFW (2021). The USFWS officially lists species as either Threatened or Endangered, and as candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act *(e.g*., bald eagle, golden eagle), the Migratory Bird Treaty Act (MBTA), the Birds of Conservation Concern in which the project area is within the Bird Conservation Region 32 (USFWS 2008) and state protection under CEQA Section 15380(d). Under FESA, the term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct and includes significant habitat modification or degradation that results in significantly impairing essential behavioral patterns including breeding, feeding, or sheltering.

In addition, many other species are considered by the CDFW to be Species of Special Concern; these are listed in Shuford and Gardali (2008), Williams (1986), and Thomson et al. (2016). Although such species are afforded no official legal status under the California Endangered Species Act, they are on a watch for conservation planning and management as it pertains to the California Environmental Quality Act and as such, they may receive special consideration during the planning and CEQA review stages of certain development projects. The CDFW further classifies some species under the following categories: "fully protected", "protected fur-bearer", "protected amphibian", and "protected reptile". The designation "protected" indicates that a species may not be taken or possessed except under special permit from the CDFW; "fully protected" indicates that a species can be taken for scientific purposes by permit only. Take under CESA is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

A total of 38 special status animal species have the potential to occur within a 3 mile radius of the study area (CNDDB 2021). Of these 38 special status animal species, 27 of these species are not expected to occur within the study area due to lack of habitat, no further analysis was conducted, and they are not discussed in this Biological Resource Assessment. Of the eleven species that have potential for occurrence in the Study Area, only nine species have potential to occur within the project impact area and are discussed below. For the two species with no suitable potential habitat within the project impact area (i.e., fish), no further analysis was conducted.

Three additional species were evaluated for their potential to occur within the study area, based on: 1) review of the Information for Planning and Conservation (IPaC) for the study area (USFWS 2021), 2) the "Special Animals" list (CDFW 2021) that includes those wildlife species whose breeding populations are in serious decline, and 3) the habitat present on site (CNDDB 2021). Species that have no likelihood for occurrence on the project site but are prominent in today's regulatory environment (monarch butterfly) are also discussed below.

Monarch butterfly (*Danaus plexippus*)
*Status*: USFWS – Candidate for listing

General Ecology and Distribution: Fall aggregations of monarch butterflies are formed beginning in October and by November they are in stable aggregations that persist through January (Pelton et al. 2016). Activity is limited to occasional sunning, rehydrating and nectaring. Aggregations are typically situated within 1.5 miles of the Pacific Ocean or San Francisco Bay, at low elevations and on slope aspects that are south, southwest, or west facing which provide the best solar radiation (Pelton et al. 2016). Monarchs typically cluster in the central portion of a grove protected by a windrow of trees. Favored roosting trees are blue gum eucalyptus (*Eucalyptus globulus*) and the native Monterey pine (*Pinus radiata*) and Monterey cypress (*Cupressus macrocarpa*) (Pelton et al. 2016).

Two types of clustering occur during the fall: a) temporary aggregations that are transient clusters of short duration and b), permanent roosts that are long term hibernal clusters. The latter provide environmental conditions that allow the butterflies to mate in January and February before their spring dispersal. In the fall

months, typically in September and October, numerous, generally small temporary aggregations are formed, especially in areas where nectar plants are plentiful near the coast.

During breeding and migration, adult monarch butterflies require a diversity of blooming nectar resources, which they feed on throughout their migration routes and breeding grounds (spring through fall) (USFWS 2020). Monarchs also need milkweed (for both oviposition and larval feeding) embedded within this diverse nectaring habitat (USFWS 2020). Eggs are laid on milkweed plants (*Asclepias* sp.) and larvae use plant chemicals to defend against predators. Monarch metamorphosis from egg to adult occurs in as little as 25 days during warm summer temperatures, to as many as 7 weeks during cool spring conditions.

*Project Area Occurrence*: Of the 50 overwintering populations prioritized for conservation along the California Coast (Pelton et al. 2016), which comprise of over 400 groves of blue gum eucalyptus, Monterey pine, and Monterey cypress, none are located further inland than 10 miles (USFWS 2020). The proposed project site is more than 30 miles from the coast and does not provide overwintering habitat. Although monarchs move from west to east after their winter migration, the project site does not provide the nectar plants required by monarchs. No further action is required.

Western Pond Turtle (*Emys marmorata*) (WPT)
*Status*: CDFW Species of Special Concern

*General Ecology and Distribution*: This medium sized turtle ranges in size to just over 8 inches (21cm) with a low carapace that is generally olive, brownish or blackish (Stebbins 2003, Thomson et al. 2016). Primary habitats include permanent water sources such as ponds, streams and rivers. It is often seen basking on logs, mud banks or mats of vegetation, although wild populations are wary and individuals will often plunge for cover after detecting movement from a considerable distance. Although it is an aquatic species with webbed feet, it can move across land in response to fluctuating water level, an apparent adaptation to the variable rainfall and unpredictable flows that occur in many coastal California drainage basins (Rathbun, *et al.* 1993). In addition, it can over-winter on land or in water or remain active in the winter, depending on environmental conditions (Rathbun, *et al.* 1993; Thomson et al. 2016). Females travel from aquatic sites into open, grassy areas to lay eggs in a shallow nest (Holland 1992; Rathbun, *et al.* 1993). Nests have been reported from 2-400 meters or more away from water bodies (Thomson et al. 2016).

*Project Area Occurrence*: No surveys were conducted for this species as part of this Biological Resource Assessment. This species has been reported in Foss Creek 3,915 feet downstream (CNDDB 2021). There is potential for this species to occur in Norton Slough/Foss Creek and to use the non-native grasslands. See below for further details.

Nesting Passerines – including western scrub jay, California towhee, oak titmouse and song sparrow, among others
*Status*: USFWS Migratory Bird Treaty Act and CDFW Code 3503.

*General Ecology and Distribution*: Birds play important roles in the ecosystem, including as pollinators, dispersers, scavengers, and predators. As early as February, passerines begin courtship and once paired, they begin nest building, often around the beginning of March. Nest structures vary in shapes, sizes and composition and can include stick nests, mud nests, matted reeds and cavity nests. For example, black phoebes may build a stick nest under the eaves of a building or a mud nest attached to culverts. Depending on environmental conditions, young birds may fledge from the nest as early as May and, if the prey base is large, the adults may lay a second clutch of eggs.

*Project Area Occurrence*: No surveys were conducted for these species as part of this Biological Resource Assessment. Several passerine (perching birds) species may nest on the site in the various habitats, including, but not limited to, grasshopper sparrow in the grasslands, California towhee is shrubs and oak titmouse in the trees. A nesting bird survey shall be conducted within the study area before removal of any of these habitats,

and seasonal restrictions put into place for occupied habitats, to ensure no take of individuals will occur. See below for further details.

Nesting Raptors – white-tailed kite (*Elanus leucurus*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperi*)
*Status*: USFWS Migratory Bird Treaty Act and CDFW 3503.5

*General Ecology and Distribution*: As top predators, raptors especially reflect the health of ecosystems (McClure and Rolek 2020). Raptors nest in a variety of substrates including cavities, ledges and stick nests. For example, Cooper's hawks are small bird hunters, hunting on the edges of broken forest and grassland habitats where passerines forage for seeds and insects. Nests occur in heavily forested areas near a water source. Research sites on nesting Cooper's hawks rarely show the nests more than a quarter of a mile away from water, whether it is a cattle tank, stream or seep (Snyder and Snyder 1975). Trees typically used by Cooper's hawks include coast live oaks, cottonwoods, and black oaks (Call 1978), as well as second growth conifer stands or deciduous riparian areas. Most raptors build stick nests, except for American kestrels that nest in cavities. In general, the breeding season for raptors occurs in late March through June, depending on the climate, with young fledging by early August

*Project Area Occurrence*: No surveys were conducted for these species as part of this Biological Resource Assessment. Foraging habitat for raptors, such as white-tailed kite and red-shouldered hawk, among others, occurs throughout the study area. The oak trees provide suitable nesting habitat for Cooper's hawks, red-shouldered hawks and white-tailed kites. See below for further details.

Roosting bats – including western red bat (*Lasiurus blossevillii*) and hoary bat (*Lasiurus cinereus*).
*Status*: CDFW Species of Special Concern (SSC), as well as Fish and Wildlife Code Sections 86, 2000, 2014, 3007, Title 14, Sections 15380, 15382

Within California, 25 bats species occur, of which 11 are classified as SSC (CDFW 2021). One SSC bat species that often roosts in structures or suitable trees in those areas where they occur is the pallid bat (*Antrozous pallidus*). Removal of occupied roosts without prior humane eviction or other actions approved by the CDFW would result in "take", defined under the CESA as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill".

In addition to the SSC bat species above, non-SSC species are also afforded consideration under the California Environmental Quality Act (CEQA), primarily when significant local breeding populations may be impacted. This includes two more common and widely distributed bat species, Yuma myotis (*Myotis yumanensis*) and Brazilian free-tailed bat (*Tadarida brasiliensis*), which can form very large colonies, often in features such as those found in buildings.

*General Ecology and Distribution:* Bats in this region of California are not active year-round and their activity periods can be split into two distinct seasons, the maternity season and the winter season. During the maternity season, non-volant young (those not capable of flight) of colonial bats remain in the roost until late summer (end of August), after which they may disperse from the natal roost or remain into or throughout the winter. During the winter season, bats typically enter torpor, rousing only occasionally to drink water or opportunistically feed on insects. The onset of torpor is dependent upon environmental conditions, primarily temperature and rainfall.

Cavity roosting colonial bats also have some specific roosting parameters. In general, relative to other trees in a coniferous forest, the roost trees of bats were tall with large DBH in stands with open canopy and high snag density (Kalcounis-Rüppell et al 2005). In contrast, roost trees of bats did not differ from random trees with respect to live-tree density. The main differences detected between foliage-and cavity-roosting bats were in percent canopy cover and distance to water (Kalcounis-Rüppell et al 2005). The roost trees of cavity-roosting species had more open canopies and were closer to water than random trees (Kalcounis-Rüppell et

al 2005). Species that are coniferous forest cavity roosting species, such as fringed bat (*Myotis thysanodes*), are likely to lose up to 44% of their range resulting a population decrease of more than 90%, based on climate change effects on forests and water resources (Capelli et al 2021).

Obligate tree-roosting bats include another SSC species that could occur in the project area; western red bat (*Lasiurus blossevillii)*. An obligate tree-roosting species, *L. blossevillii* uses tree foliage, typically of large-leafed trees such as cottonwood (*Populus fremontii*) and others but is also associated with orchards where suitable canopy density occurs. *L. blossevillii* females roost singly and with 2-6 pups during maternity season, and there is evidence that *L. blossevillii* is often faithful to selected trees. Suitable potential tree canopy habitat is present within the alignment for this species, as well as for a non-SSC tree-roosting species, hoary bat (*Lasiurus cinereus*). Obligate tree-roosting bat species, and to some extent, colonial bats, may switch tree roosts frequently, particularly after young are volant, but are sometimes faithful for longer periods (weeks).

Please refer to the Impacts and Mitigation Measures for details on avoidance measures of roosting bats in trees on this site.

**Recovery Units**
The project site is located outside all areas identified as Recovery Plan Areas for the California red-legged frog (USFWS 2002) and northern spotted owl (USFWS 2011).

**Critical Habitat**
The project site is located outside all areas identified as Critical Habitat for the California tiger salamander (USFWS 2011), California red-legged frog (USFWS 2010) and northern spotted owl (USFWS 2012).

The major creeks in the area are identified as Critical Habitat for the Steelhead coastal DPS. However, Norton Slough/Foss Creek and the project area is not identified as supporting Critical habitat for this species (CNDDB 2021). No work will occur within Norton Slough/Foss Creek and there will be no direct impacts to the creek from the project. Post-construction storm water management includes bioswales to ensure that water from the development is clean before leaving the developed areas. Stormwater for the development will be connected to an existing stormwater drainage system so there will be no indirect impacts.

## IMPACTS AND MITIGATION MEASURES

This section summarizes the potential biological impacts within the study area. The analysis of these impacts is based on a single reconnaissance-level survey of the study area, spring plant surveys, a review of existing databases and literature, and personal professional experience with biological resources of the region. Potential impacts to special status biotic resources are identified as resulting from construction of the proposed project. Mitigations for these biological impacts are provided below.

CEQA Guidelines Sections 15206 and 15380 were used to determine impact significance. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state.

A species may be treated as rare or endangered even if it has not been listed under CESA or FESA. Species are designated endangered when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, disease or other factors.

For the purposes of this report, three principal components in the evaluation were considered:
- Magnitude of the impact (e.g., substantial/not substantial);
- Uniqueness of the affected resource (rarity), and
- Susceptibility of the affected resource to disturbance (sensitivity).

The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small-magnitude impact (e.g., disturbing a nest) to a state or federally listed species would be considered significant because the species is at low population levels and is presumed to be susceptible to disturbance. Conversely, a common habitat such as non-native grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact (e.g., removal of extensive vegetation) would be required for it to be considered a significant impact.

**Waters of the U.S. and State, Including Wetlands**

*Project Direct Impact*: Two seasonal wetlands comprising a total of 0.57 acres of seasonal wetlands occur on the property. Approximately 0.25 acres of the seasonal wetlands will be impacted by the proposed project. Norton Slough/Foss Creek qualifies as a waters of the U.S. and State and is approximately 0.14 acres, but will not be impacted by the proposed project.

*Mitigation Measures*: Please refer to Figure 2 for impacts and mitigation areas for seasonal wetlands. A total of 0.25 acres of existing seasonal wetlands will be removed and 0.32 acres will be avoided. The project will compensate for the loss of 0.25 acres of wetlands by creating 0.53 outside the riparian setback. This provides a slightly greater than 2:1 mitigation to loss ratio.

Wetland creation will occur on-site and will be in-kind with the same or similar wetland functions and values established for the site including increasing the flood holding capacity of the site. The upland areas between the riparian setback and the proposed project will be graded to meet the grade of the existing wetland. Hydrology will be through direct precipitation and additional flow from the bioswales adjacent to the development site. A hydrologic study was conducted for the site which showed that there is sufficient hydrology to support the created wetlands.

A Section 404 nationwide permit will be obtained from the USACE along with a Section 401 water quality certification from the RWQCB. A detailed wetland mitigation plan will be developed as part of the permit process. The wetland mitigation plan is anticipated to include:

1. *Objectives*. A description of the resource type(s) and amount(s) that will be provided, the method of compensation (restoration, establishment, preservation etc.), and how the anticipated functions of the mitigation project will address watershed needs.
2. *Site selection*. A description of the factors considered during the site selection process. This shall include consideration of watershed needs, onsite alternatives where applicable, and practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the mitigation project site.
3. *Site protection instrument*. A description of the legal arrangements and instrument including site ownership, which will be used to ensure the long-term protection of the mitigation project site.
4. *Baseline information*. A description of the ecological characteristics of the proposed mitigation project site and the impact site.
5. *Determination of mitigation ratio*. For permittee-responsible mitigation, this shall include an explanation of how the mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.
6. *Mitigation work plan*. Detailed written specifications and work descriptions for the mitigation project, including: the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water; methods for establishing the desired plant community; plans to control invasive plant species; proposed grading plan; soil management; and erosion control measures.
7. *Maintenance plan*. A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.
8. *Performance standards*. Ecologically-based standards that will be used to determine whether the mitigation project is achieving its objectives.

9. *Monitoring requirements*. A description of parameters monitored to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting monitoring results to the agencies must be included.
10. *Long-term management plan*. A description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.
11. *Adaptive management plan*. A management strategy to address unforeseen changes in site conditions or other components of the mitigation project, including the party or parties responsible for implementing adaptive management measures.
12. *Financial assurances*. A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed, in accordance with its performance standards.

**Special Status Vegetation Community**

The mixed willow riparian community along Norton Slough/Foss Creek is designated as a sensitive natural community by CDFW. A 35-foot setback will be maintained and no work will occur within the creek or setback. There will be no direct or indirect impacts to Norton Slough/Foss Creek from the proposed development.

**Special Status Plants**

Seasonal protocol level and floristic surveys for special status plants were conducted for the site in April, May and June 2021. No special status plants were observed during the surveys, and none are likely to occur.

**Special Status Wildlife**

There is potential for impacts to western pond turtle, nesting passerines, nesting raptors, and roosting bats. Table 2, below, presents a synopsis of the habitat assessments and focused surveys recommended to determine if special status species or their suitable habitat is present. The information provided in Table 2 is to prevent take of individuals.

**Table 2: Special Status Wildlife Species and Recommended Dates for Site Assessments, Focused Survey Dates and Pre-construction Surveys.**

| | Pond Turtle | Passerines | Raptors | Bats |
|---|---|---|---|---|
| **Site Assessment** | All year | All year – evaluate habitats on site both natural and anthropogenic | All year – evaluate habitats on site both natural and anthropogenic | All year – evaluate habitats on site |
| **Spring Survey** | January 1 – June 30 | February 1 – August 30 | February 1 – August 30 | Habitat Removal (based on Habitat Assess) Between March 1 and April 15 (or after evening temperatures rise above 45F and/or no more than 1/2" of rainfall within 24 hours occurs) |
| **Fall Survey** | None | None | None | Habitat Removal (based on Habitat Assess) Between Sept 1 and Oct 15 (or before evening temperatures fall below 45F and/or more than 1/2" of rainfall within 24 hours occurs) |

| | Pond Turtle | Passerines | Raptors | Bats |
|---|---|---|---|---|
| **Preconstruction Survey** | Within 7 days of ground breaking between January 1 - June 30 | Within 3 days of groundbreaking between February 1 and August 30 **Buffers:** 75 – 100 feet | Within 3 days of groundbreaking between February 1 and August 30 **Buffers:** 200 feet or more | Based on Habitat Assessment **Buffers:** 100 feet or more |
| **Survey Area** | Grasslands within project impact area | Grasslands & trees within project impact area | Grasslands & trees within project impact area | Trees to be removed within the project impact area |

**Wildlife Movement Corridors**
The open grasslands on the parcel allow for unimpeded movement. The 1.66-acre proposed permanent project impact area will remove a portion of this movement corridor. However, 1.87 acres will remain that will be unimpeded for wildlife movement. Full build out of this site is not expected and a 35-foot buffer zone along Norton Slough/Foss Creek will be established. As a result, no impacts to movement corridors for wildlife will occur.

**Invertebrates**
Although native bees have a moderate potential to occur on the site, based on the habitats present, a sufficient amount of habitat will remain after the proposed development that will not cause a decrease in the number of individuals in this portion of Sonoma County.

*Recommendation*
Consider planting of native hedgerows to benefit native bees. Species to be used include blue elderberry (*Sambucus nigra*) and Western redbud (*Cercis occidentalis*) along riparian corridors, and California fuchsia (*Epilobium canum*) and coyote bush (*Baccharis pilularis*), among others, in the upland habitats (Vaughan, et al. 2015). The native manzanitas (*Arctostaphylos* sp.), madrones (*Arbutus* sp.) and toyons (*Heteromeles arbutifolia*) are also bee food.

**Vertebrates**
*Project Direct Impact*: Western pond turtle may occur within the vicinity of the study area and may use Norton Slough/Foss Creek and move through the upland habitat as a movement corridor. Development of grasslands within the project impact area may impact individual western pond turtle.

*Project Mitigation:* To prevent take of individuals, a pre-construction survey shall be conducted within 7 days prior to ground breaking between January 1 and June 30 in the grasslands within the project impact area on the site. If no western pond turtles are observed, no further action is required.

If pond turtles are observed in the grasslands, CDFW shall be contacted and all construction activities will be delayed until an appropriate course of action is established and approved by the CDFW. This may be as simple as establishing a drift fence around the project impact area to prevent turtles from moving into the project impact area.

If construction is delayed for more than 30 days from the survey, another pre-construction survey for western pond turtle shall be conducted.

*Project Direct Impacts*: Passerines and raptors nesting in the individual and riparian trees and the lowlands within the project impact area could be impacted if construction occurs during the nesting season between February 1 and August 30.

*Project Mitigation*: The following mitigation measures should be followed in order to avoid or minimize impacts to passerines and raptors that may potentially nest in the trees:

1) Grading or removal of nesting trees should be conducted outside the nesting season, which occurs between February 1 and August 30.
2) If grading between August 31 and January 31 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grasslands and trees within the project impact area shall be performed by a qualified biologist within 3 days of groundbreaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey.
3) If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged, as determined by a qualified biologist.
4) The radius of the required buffer zone can vary depending on the species, (i.e., 250 feet for passerines and 300-500 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.
5) To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.

After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones.

*Project Direct Impacts*: Removal of trees may cause direct mortality of roosting bats if the trees provide suitable roosting habitat and are removed during seasonal periods of inactivity (maternity season or winter).

*Preventing Take of Tree-roosting Bats – General Discussion*

As with those bats that roost in buildings, colonial bats that roost in trees are seasonally inactive (e.g., non-volant young during maternity season or torpid bats during winter months). Unlike with buildings however, bats cannot readily be humanely evicted from trees. This is because many trees have numerous cavities, crevices, or large areas of exfoliating bark that cannot be fitted with one-way exits or cannot even be safely worked on due to poor condition or lack of accessibility. This is particularly true of snags due to their extremely poor condition; however, snags provide some of the most preferred and substantial bat tree roost habitat.

Conducting visual cavity surveys is only rarely possible due to difficulty with access and number of trees and night emergence surveys of potential roost trees is generally only feasible logistically and economically, where a few habitat trees occur, because only 1-2 trees can be surveyed each night per observer. Also, because bats tend to switch tree roosts more frequently than more stable roosts such as caves, mines, rock outcrops, buildings, bridges, or culverts, negative results have extremely limited temporal validity (24-48 hours), which would result in multiple mobilizations by tree cutters in order to remove trees immediately after a negative survey. In the event a tree is found to be occupied, a method for safely getting the bats out of the tree will still be needed.

A method has been developed that provides the most reasonable and cost-effective opportunity for bats to abandon the roost tree prior to cutting, which has been in use for over ten years. This is a two-step method, *conducted over two consecutive days*, and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed the following day - Day 2.

*Project Mitigation:* Due to the urbanized nature of the area, compensatory roosting habitat is infeasible. Mitigation for this site will be to prevent take of individuals. Two-step tree removal must only occur during seasonal periods of bat activity, which are the following:

***Seasonal periods of bat activity, which in this region, occur between March 1 (or after evening temperatures rise above 45°F and/or no more than 1/2" of rainfall within 24 hours occurs), and April 15, or between September 1 and October 15 (or before evening temperatures fall below 45°F and/or more than 1/2" of rainfall within 24 hours occurs).***

A qualified bat biologist must supervise the tree removal. The biologist will direct the tree removal company on which limbs to remove on Day 1.

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## QUALIFICATIONS OF BIOLOGISTS

**Jane Valerius** is a plant ecologist and wetlands specialist with more than 40 years of highly professional experience both in conducting field studies and in managing projects. Ms. Valerius is proficient in conducting vegetation and biotic surveys, rare plant surveys, and wetland delineations. Ms. Valerius has designed mitigation monitoring plans for wetlands, habitat restoration plans for endangered species and prepared environmental impact assessments to support development of public works projects, residential communities, landfill and mining expansion, and energy and water resource facilities.

⇒ Master of Science, Range Ecology, Colorado State University, Fort Collins, CO, May 1982 with emphasis in plant taxonomy, plant ecology and mined land reclamation
⇒ Bachelor of Arts, Environmental Biology, University of Colorado, Boulder, CO, December 1977 with classes in plant taxonomy and plant ecology.

- Conducted ecological, botanical and wetland studies in California, Oregon, Nevada, Idaho, Colorado, Wyoming, Utah, Arizona, and North Dakota.
- Specialize in flora of the western United States; conducted special status plant surveys according to California Department of Fish and Game protocol for Marin, Sonoma, Mendocino, Napa, Solano, Contra Costa, Alameda, San Joaquin, Merced, Fresno, Butte, Eldorado, Sacramento, Yolo, and other counties.
- Extensive experience with wetland delineations, permitting, mitigation plans, creation and construction of wetlands, including vernal pools.
- Work with the San Francisco, Sacramento and Los Angeles U. S. Army Corps of Engineers districts. Experience with NEPA/CEQA.
- Prepare restoration, revegetation, and reclamation plans. Prepare exotic pest plant control plans.
- Monitor environmental compliance of mining operations, transmission line, and residential development projects.
- Active in professional organizations including past Director-at-Large for the Society for Ecological Restoration (1994-1997), member of the California Native Plant Society.

**Trish Tatarian** is a seasoned biologist, with 30 years of experience working as project manager and technical biologist for consulting firms in the environmental consulting field. Co-founder of Wildlife Research Associates, Trish has been an independent wildlife consultant since 2001. She has built consensus with agency personnel and a variety of clients ranging from federal agencies to independent developers. Trish is a widely-experienced general ecologist, who focuses on conducting surveys for special status amphibians, birds, and mammals, conducting vegetation community and wildlife habitat characterization, and aerial photograph interpretation.

◊ M.Sc., Biology, Sonoma State University 2005
◊ B.S., Ecology, San Francisco State University 1992

- Holder of a 10(A)1(a) USFWS permit, since 1998, and a CDFW Scientific Collecting permit, since 1992, holds a permit for foothill yellow-legged frog (*Rana boylii*)
- Conducts research on the federally-listed Threatened California red-legged frog (*Rana draytonii*) and the Endangered Sonoma County population of the California tiger salamander (*Ambystoma californiense*).
- Between 2013 and 2018 taught 16 Workshops on California Red-legged Frog Biology in Santa Cruz, Livermore, Elkhorn Slough and Auburn
- Conducts presence absence surveys for California red-legged frog, California tiger salamander, foothill yellow-legged frog, western pond turtle, as well as construction monitoring. Has prepared numerous site Assessments, Biological Assessment, Mitigation and Monitoring plans and Habitat Conservation Plans
- Conducts nesting passerine and raptor surveys, bat habitat assessments and emergence surveys
- Experienced with CEQA/NEPA and has strong working relationship with various divisions of the USFS, USFWS and CDFW.

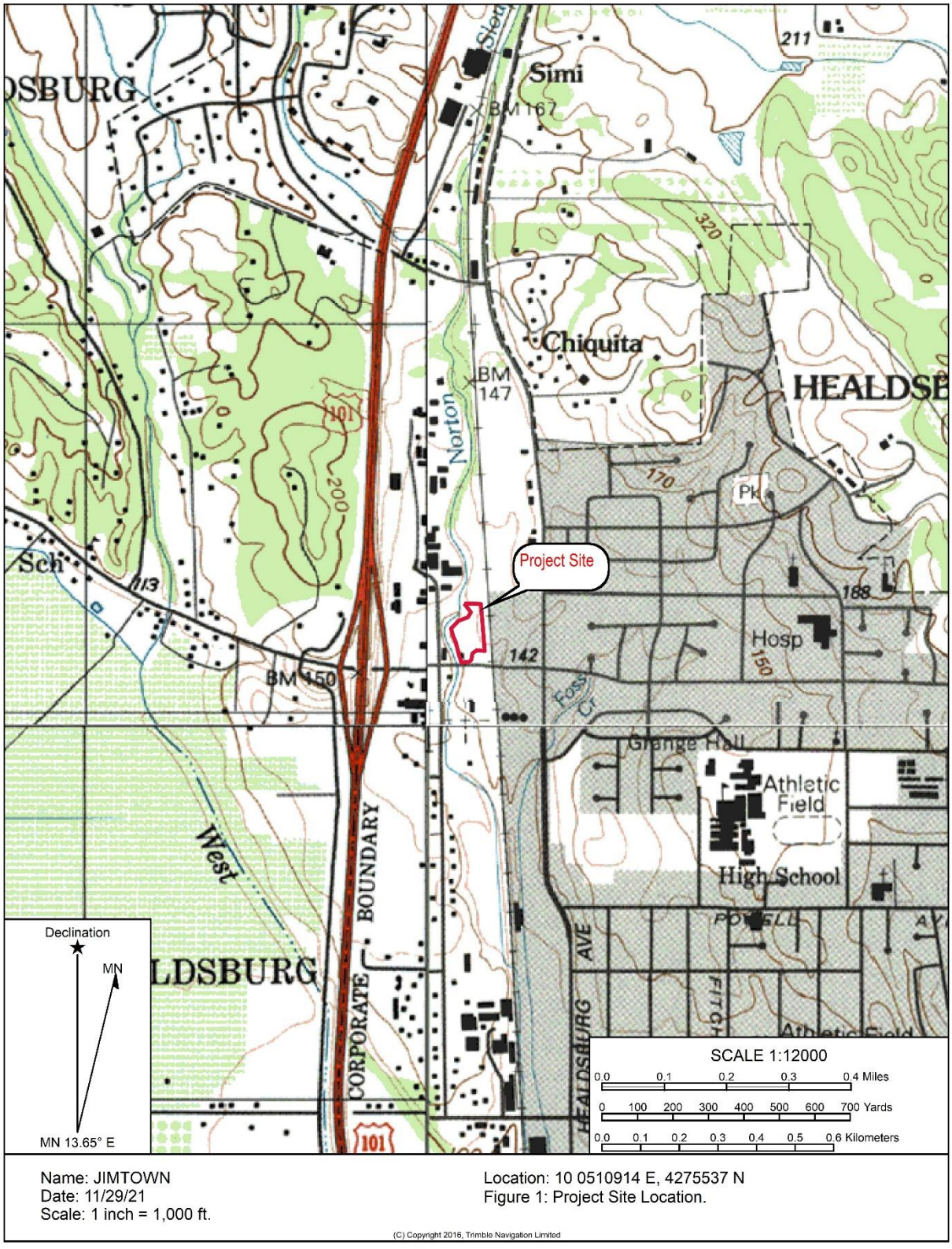



**FIGURE 1: REGIONAL PROJECT VICINITY MAP**

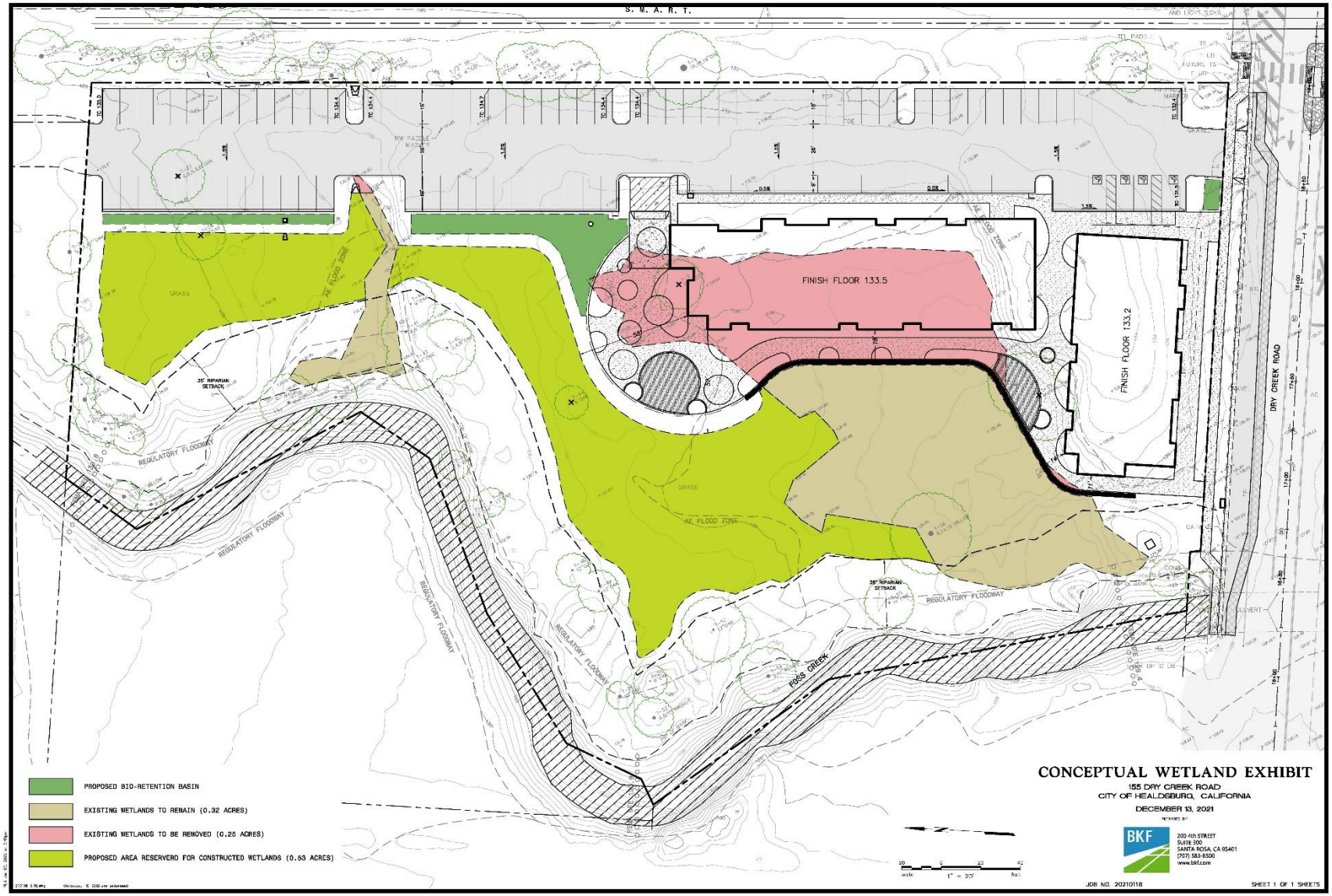



**Figure 2: Conceptual Wetland Exhibit.**

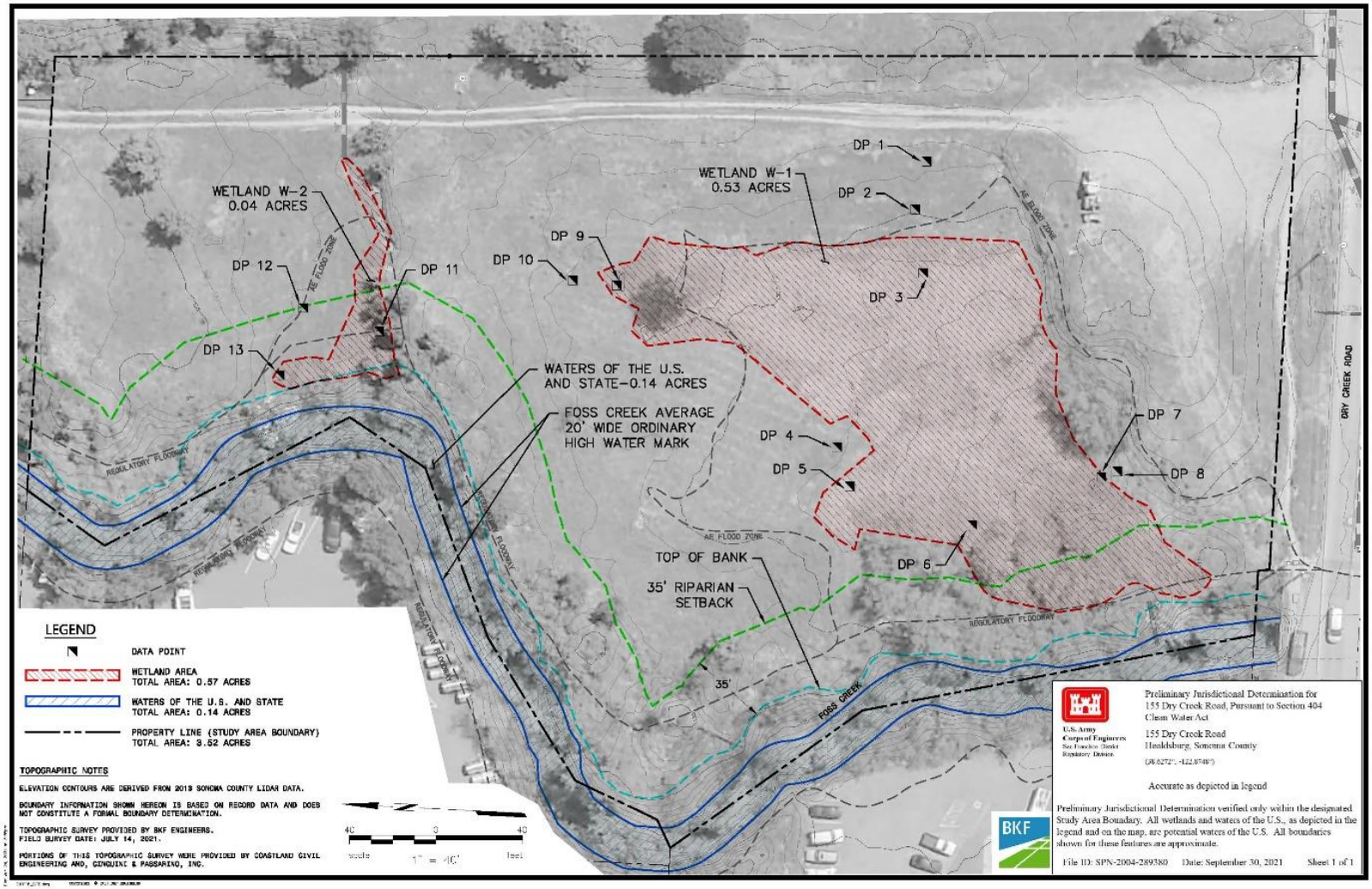



**Figure 3: Wetland Delineation Map.**


Figure 4. Non-native grassland with wetland in background.


Figure 5. Willow riparian along Norton Slough/Foss Creek adjacent to wetland and non-native grassland in the foreground.


Figure 6. Looking west towards Norton Slough/Foss Creek overlooking seasonal wetland.


Figure 7: Trees with suitable potential roosting habitat for foliage roosting bats.

## APPENDIX A: FEDERAL, STATE AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES

**Federal Endangered Species Act (FESA) - U.S. Fish and Wildlife Service**

Pursuant to ESA, the U.S. Fish and Wildlife Service (USFWS) has regulatory authority over federally listed species. Under ESA, a permit to "take" a listed species is required for any federal action that may harm an individual of that species. Take is defined under Section 9 of ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Under federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Section 7 of ESA requires all federal agencies to consult with USFWS to ensure that their actions are not likely to "jeopardize the continued existence" of any listed species or "result in the destruction or adverse modification" of designated critical habitat. No federal approvals or other actions are anticipated as being required to implement the project at this time. Therefore, consultation under Section 7 of ESA is not expected. However, if USACE determines that wetlands and/or other waters of the United States on the project site are subject to protection under Section 404 of the CWA, or any other federal action becomes necessary, consultation under Section 7 of ESA would be required.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain a permit for incidental take under Section 10(a) of ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan (HCP) that includes components to minimize and mitigate impacts associated with the take. The permit is known as an incidental take permit. The project proponent must obtain a permit before conducting any otherwise-lawful activities that would result in the incidental take of a federally listed species.

**Clean Water Act Sections 404 and 401 - U.S. Army Corps of Engineers**

USACE regulates the discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. Waters of the United States are defined as waters where use, degradation, or destruction could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are somehow connected to any of these waters or their tributaries. Wetlands are defined as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands falling under USACE jurisdiction must demonstrate the presence of three specific wetland parameters: hydric soils, hydrophytic vegetation, and sufficient wetland hydrology. Generally, wetlands include swamps, marshes, bogs, and similar areas. Lakes, rivers, and streams are defined as "other waters." Jurisdictional limits of these features are typically noted by the ordinary high-water mark (OHWM). The OHWM is the line on the shore or bank that is established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in soils, lack of woody or terrestrial vegetation, the presence of litter or debris, or other characteristics of the surrounding areas.

Isolated ponds or seasonal depressions had been previously regulated as waters of the United States. However, in Solid Waste Agency of Northwestern Cook County (SWANCC) v. United States Army Corps of Engineers et al. (January 8, 2001), the U.S. Supreme Court ruled that certain "isolated" wetlands (e.g., non-navigable, isolated, and intrastate) do not fall under the jurisdiction of the CWA and are no longer under USACE jurisdiction (although isolated wetlands are regulated by the State of California under the Porter-Cologne Water Quality Control Act—see discussion below). Some circuit courts (e.g., U.S. v. Deaton, 2003; U.S. v. Rapanos, 2003; Northern California River Watch v. City of Healdsburg, 2006), however, have ruled that the SWANCC opinion does not prevent CWA jurisdiction if a "significant nexus" such as a hydrologic connection exists, whether it be human-made (e.g., roadside ditch) or natural tributary to navigable waters, or direct seepage from the wetland to the navigable water, a surface or underground hydraulic connection, an ecological connection (e.g., the same bird, mammal, and fish populations are supported by both the wetland

and the navigable water), and changes to chemical concentrations in the navigable water due to water from the wetland.

Section 404 prohibits the discharge of dredged or fill material into waters of the United States (including wetlands) without a permit from USACE. With respect to the proposed project, the discharge of dredged or fill material includes the following activities:

- placement of fill that is necessary for the construction of any structure or infrastructure in a water of the United States;
- the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction;
- site-development fills for recreational, industrial, commercial, residential, or other uses; and
- construction of causeways or road fills.

The regulations and policies of USACE, the U.S. Environmental Protection Agency (EPA), and USFWS mandate that the filling of wetlands be avoided unless it can be demonstrated that no practicable alternatives (to filling wetlands) exist. If the placement of fill into waters of the U.S., including wetlands, meets certain criteria the project be permitted under one of the Nation Wide Permits (NWP), which is an expedited permit process.

Section 401 of the CWA requires an applicant for any federal permit that may result in a discharge into waters of the United States to obtain a certification from the state that the discharge will comply with provisions of the CWA. The regional water quality control boards (RWQCBs) administer this program. Any condition of water quality certification would be incorporated into the USACE permit. The state has a policy of no net loss of wetlands and typically requires mitigation for impacts on wetlands before it will issue a water quality certification.

**Essential Fish Habitat - National Marine Fisheries Service**

Essential Fish Habitat (EFH) is regulated through the National Marine Fisheries Service (NMFS), a division of the National Oceanic and Atmospheric Administration (NOAA). Protection of EFH is mandated through changes implemented in 1996 to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to protect the loss of habitat necessary to maintain sustainable fisheries in the United States. The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). NMFS further defines essential fish habitat as areas that "contain habitat essential to the long-term survival and health of our nation's fisheries" (NMFS 2007). EFH can include the water column, bottom substrate types such as gravels suitable in size for salmonid spawning, and vegetation and woody structures that provided habitat for rearing. Under regulatory guidelines issued by NMFS, any federal agency that authorizes, funds, or undertakes action that may affect EFH is required to consult with NMFS (50 CFR 600.920).

**California Environmental Quality Act (CEQA)**

CEQA is a California statute passed in 1970, shortly after the United States federal government passed NEPA, to institute a statewide policy of environmental protection. CEQA does not directly regulate land uses, but instead requires state and local agencies within California to follow a protocol of analysis and public disclosure of environmental impacts of proposed projects and adopt all feasible measures to mitigate those impacts.

The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. According to CEQA, all state and local agencies must give major consideration to environmental protection in regulating public and private activities, and should not approve projects for which there exist feasible and environmentally superior mitigation measures or alternatives.

**California Endangered Species Act (CESA) – California Department of Fish and Wildlife**

The California Endangered Species Act (CESA) (FGC §§ 2050–2116) is administered by the California Department of Fish and Wildlife. The CESA prohibits the "taking" of listed species except as otherwise provided in state law. The CESA includes FGC Sections 2050–2116, and policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat. The CESA requires mitigation measures or alternatives to a proposed project to address impacts to any State listed endangered, threatened or candidate species, or if a project would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy. Section 86 of the FGC defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Unlike the ESA, CESA applies the take prohibitions to species under petition for listing (state candidates) in addition to listed species. Section 2081 of the FGC expressly allows DFW to authorize the incidental take of endangered, threatened, and candidate species if all of the following conditions are met:

- The take is incidental to an otherwise lawful activity.
- The impacts of the authorized take are minimized and fully mitigated.
- Issuance of the permit will not jeopardize the continued existence of the species.
- The permit is consistent with any regulations adopted in accordance with §§ 2112 and 2114 (legislature-funded recovery strategy pilot programs in the affected area).
- The applicant ensures that adequate funding is provided for implementing mitigation measures and monitoring compliance with these measures and their effectiveness.

The CESA provides that if a person obtains an incidental take permit under specified provisions of the ESA for species also listed under the CESA, no further authorization is necessary under CESA if the federal permit satisfies all the requirements of CESA and the person follows specified steps (FGC § 2080.1).

**Species Protection under California Department of Fish and Wildlife**

The CDFW is established under the Fish and Game Code (FGC) (FGC § 700) and states that the fish and wildlife resources of the state are held in trust for the people of the state by and through CDFW (FGC § 711.7(a)). All licenses, permits, tag reservations and other entitlements for the take of fish and game authorized by FGC are prepared and issued by CDFW (FGC § 1050 (a)).

Provisions of the FGC provide special protection to certain enumerated species such as:

§ 3503 protects eggs and nests of all birds.
§ 3503.5 protects birds of prey and their nests.
§ 3511 lists fully protected birds.
§ 3513 protects all birds covered under the federal Migratory Bird Treaty Act.
§ 3800 defines nongame birds.
§ 4150 defines nongame mammals.
§ 4700 lists fully protected mammals.
§ 5050 lists fully protected amphibians and reptiles.
§ 5515 lists fully protected fish species.

In addition, the Native Plant Protection Act (NPPA), directs the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." As a result, the NPPA allows the California Fish and Game Commission to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants.

**Waters of the State - California Regional Water Quality Control Board**

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the USACE under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged

material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the Water Quality Certification determination.

If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

**Streams, Lakes, and Riparian Habitat - California Department of Fish and Wildlife**
Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of the State Fish and Wildlife Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

**California Native Plant Society (CNPS)**
The California Native Plant Society (CNPS) is a statewide non-profit organization dedicated to the monitoring and protection of sensitive species in California. The CNPS publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California, focusing on geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California. The list serves as the candidate list for listing as threatened and endangered by the CDFG. The Inventory assigns plants to the following categories:

A. Presumed Extinct in California
B. Rare or endangered in California and elsewhere
Rare or endangered in California, more common elsewhere
Plants for which more information is needed
Plants of limited distribution.

Additional rarity, endangerment, and distribution codes are assigned to each taxa.

Plants on Ranks 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and the Department recommends they be addressed in CEQA projects (CEQA Guidelines Section 15380). However, a plant need not be in the Inventory to be considered a rare, threatened, or endangered species under CEQA. In addition, the DFG recommends, and local governments may require, protection of plants which are regionally significant, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Ranks 3 and 4.

**Sonoma County Tree Protections Regulations**
Tree removal or timber conversions will require a use permit. All structures shall be located outside the Riparian Corridor Stream Conservation Areas (RC combining zone) and outside any designated Biotic Habitat area (BH combining zone, as depicted on Figure OSRC-2, Biotic Resource Areas of the Sonoma County General Plan 2020 Open Space & Resource Conservation Element (Sonoma County PRMD 2021).

The following Goals and Objectives from the General Plan (Sonoma County PRMD 2021) also provide tree protections:

- **Goal OSRC-7:** Protect and enhance the County's natural habitats and diverse plant and animal communities.
- **Objective OSRC-7.5:** Maintain connectivity between natural habitat areas.
- **Objective OSRC-7.6:** Establish standards and programs to protect native trees and plant communities.
- **Objective OSRC-7.8:** Encourage voluntary efforts to restore and enhance biotic habitat.
- **Policy OSRC-7a:** Designate as Biotic Habitat Areas in the Open Space and Resource Conservation Element the known locations shown on Figures OSRC-5a through OSRC-5i and identified as Special Status Species Habitat, Marshes and Wetlands, Sensitive Natural Communities, and Habitat Connectivity Corridors.
- **Policy OSRC-7k:** Require the identification, preservation and protection of native trees and woodlands in the design of discretionary projects, and, to the maximum extent practicable minimize the removal of native trees and fragmentation of woodlands, require any trees removed to be replaced, preferably on the site, and provide permanent protection of other existing woodlands where replacement planting does not provide adequate mitigation.
- **Policy OSRC-7l:** Identify important oak woodlands, assess current protection, identify options to provide greater protection of oak woodlands and their role in connectivity, water quality and scenic resources, and develop recommendations for regulatory protection and voluntary programs to protect and enhance oak woodlands through education, technical assistance, easements and incentives.
- **Policy OSRC-7m:** Designate important valley oak habitat areas, reevaluate current designations, and apply a Valley Oak Habitat combining district zoning that requires adequate mitigation for trees removed and monitoring of replacement tree survival.
- **Policy OSRC-7n:** Encourage landowners to voluntarily participate in a program that protects officially designated individual trees or groves that either have historical interest or significant or have outstanding size, age, rarity, shape or location.
- **Policy OSRC-7u:** Identify and consider designation of old growth Redwood and Douglas Fir as sensitive natural communities. Encourage preservation and public acquisition of remaining old growth Redwood and Douglas Fir forests in private ownership with the County. Because of their rarity and biological importance, these sensitive natural community types should be made priorities for protection through conservation easements, fee title purchase, or other mechanisms.
- **Goal OSRC-12:** Preserve, sustain and restore forestry resources for their economic, conservation, recreation and open space values.

## Appendix B: Special Status Plant Species Potentially Occurring in the Study Area

| ***Scientific Name*** **Common Name** | **Status USFWS/ CDFW/ CNPS rank** | **Habitat Affinities and Blooming Period/Life Form** | **Habitat Present/Absent** | **Potential for Occurrence** |
|---|---|---|---|---|
| *Amorpha californica* var. *napensis* Napa false indigo | -/-/1B | Broadleafed upland forest (openings), chaparral, cismontane woodland. Blooms April-July. Elevation: 120-2000m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Arctostaphylos bakeri* ssp. *sublaevis* Cedars manzantia | -/CR/1B | Closed-cone coniferous forest, chaparral on serpentinite. Blooms February to May. Elevation: 185-760m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Arctostaphylos hispidula* Howell's manzanita | -/-/4 | Chaparral on serpentinite or sandstone. Blooms March to April. Elevation: 120-1250m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Arctostaphylos stanfordiana* ssp. *decumbens* Rincon Ridge manzanita | -/-/1B | Chaparral on rhyolitic soils and cismontane woodland. Blooms February to April (sometimes May). Elevation: 75-370m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Asclepias solanoana* Serpentine milkweed | -/-/4 | Chaparral, cismontane woodland, lower montane coniferous forest. Blooms May to August. Elevation: 230-1860m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Astragalus breweri* Brewer's milk-vetch | -/-/4 | Meadows and seeps, valley and foothill grassland in open and often gravelly areas and often on serpentinite or volcanic soils. Blooms April-June. Elevation: 90-730m. | A | None. No habitat present. No serpentine or volcanic soils. Study area is not within the elevational range of species. |
| *Blennosperma bakeri* Sonoma sunshine | FE/CE/1B | Valley and foothill grassland (mesic), vernal pools. Blooms March to May. Elevation: 10-110m. | A | None. No habitat present. No vernal pools. Not observed during surveys. |
| *Brodiaea leptandra* Narrow-anthered brodiaea | -/-/1B | Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland on volcanic soils. Blooms May to July. Elevation: 110-915m. | A | None. No habitat present. Study area is not within the elevational range of species. |

| ***Scientific Name*** **Common Name** | **Status USFWS/ CDFW/ CNPS rank** | **Habitat Affinities and Blooming Period/Life Form** | **Habitat Present/Absent** | **Potential for Occurrence** |
|---|---|---|---|---|
| *Calamagrostis ophitidis* Serpentine reed grass | -/-/4 | Chaparral (open, north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland on serpentinite and rocky soils. Blooms April to July. Elevation: 90-1065m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Calochortus raichei* Cedars fairy-lantern | -/-/1B | Closed-cone coniferous forest, chaparral on serpentinite. Blooms May to August. Elevation: 200-490m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Calystegia collina* ssp. *oxyphylla* Mt. Saint Helena morning-glory | -/-/4 | Chaparral, lower montane coniferous forest, valley and foothill grassland on serpentinite. Blooms April to June. Elevation: 279-1010m. | A | None. No habitat present. Study area is not within the elevational range of species. |
| *Carex comosa* Bristly sedge | -/-/2B | Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. Blooms May to September. Elevation: 0-625m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Castilleja ambigua* var. *ambigua* Johnny-nip | -/-/4 | Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Blooms March to August. Elevation: 0-435m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Ceanothus confusus* Rincon Ridge ceanothus | -/-/1B | Closed-cone coniferous forest, chaparral, cismontane woodland on volcanic or serpentinite. Blooms February to June. Elevation: 75-1065m. | A | None. No habitat present. |
| *Ceanothus purpureus* Holly-leaved ceanothus | -/-/1B | Chaparral, cismontane woodland on volcanic, rocky soils. Blooms February to June. Elevation: 120-640m. | A | None. No habitat present. |
| *Centromadia parryi* ssp. *parryi* Pappose tarplant | -/-/1B | Chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, valley and foothill grassland on vernally mesic, often alkaline sites. May-November. Elevation: 2-420m. | A | None. No habitat present. No alkaline soils or coastal salt marsh. |

| ***Scientific Name*** **Common Name** | **Status USFWS/ CDFW/ CNPS rank** | **Habitat Affinities and Blooming Period/Life Form** | **Habitat Present/Absent** | **Potential for Occurrence** |
|---|---|---|---|---|
| *Cordylanthus tenuis* ssp. *brunneus* Serpentine bird's-beak | -/-/4 | Closed-cone coniferous forest, chaparral, cismontane woodland usually on serpentinite. Blooms July to August. Elevation: 475-915m. | A | None. No habitat present. |
| *Cordylanthus tenuis* ssp. *capillaris* Pennell's bird's-beak | FE/CR/1B | Closed-cone coniferous forest, chaparral on serpentinite. Blooms June to September. Elevation: 45-305m. | A | None. No habitat present. |
| *Cryptantha dissita* Serpentine cryptantha | -/-/3 | Chaparral on serpentinite. Blooms April to June. | A | None. No habitat present. |
| *Cypripedium montanum* Mountain lady's-sliper | -/-/4 | Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest. Blooms March to August. Elevation: 185-225m. | A | None. No habitat present. |
| *Dowingia pusilla* Dwarf downingia | -/-/2B | Valley and foothill grassland (mesic), vernal pools. Blooms March to May. Elevation: 1-445m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Erigeron bioletti* Streamside daisy | -/-/3 | Broadleafed upland forest, cismontane woodland, North Coast coniferous forest on rocky and mesic sites. Blooms June-October. Elevation 30-1100m. | A | None. No habitat present. |
| *Erigeron serpentinus* Serpentine daisy | -/-/1B | Chaparral on serpentine seeps. Blooms May to August. Elevation: 60-670m. | A | None. No habitat present. Study area not within elevational range of species. |
| *Erythronium helenae* St. Helena fawn lily | -/-/4 | Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Blooms March to May. Elevation: 350-1220m. | A | None. No habitat present. Study area not within elevational range of species. |
| *Fritillaria liliacea* Fragrant fritillary | -/-/1B | Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland often on serpentinite. Blooms February to April. Elevation: 3-410m. | A | None. Typical habitat not present. Not observed during surveys. |

| *Scientific Name* Common Name | Status USFWS/ CDFW/ CNPS rank | Habitat Affinities and Blooming Period/Life Form | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| *Helianthus exilis* Serpentine sunflower | -/-/4 | Serpentine seeps in chaparral, cismontane woodland. Blooms June to November. Elevation: 150-1525m. | A | None. No habitat present. |
| *Hemizonia congesta* ssp. *congesta* Congested-headed hayfield tarplant | -/-/1B | Valley and foothill grassland, sometimes roadsides. Blooms April to November. Elevation: 20-560m. | P | Low. Potential grassland habitat is present on site. Not observed during surveys. |
| *Hesperevax caulescens* Hogwallow starfish | -/-/4 | Valley and foothill grassland (mesic, clay), vernal pools (shallow), sometimes alkaline. Blooms March to June. Elevation: 0-505m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Horkelia tenuiloba* Thin-lobed horkelia | -/-/1B | Broadleafed upland forest, chaparral, valley and foothill grassland/mesic openings, sandy. Blooms May to July (August). Elevation: 50-500m. | A | None. Typical habitat not present. No sandy soils. |
| *Hosackia gracilis* Harlequin lotus | -/-/4 | Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland/wetlands, roadside. Blooms March to July. Elevation: 0-700m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Kopsiopsis hookeri* Small groundcone | -/-/2B | North Coast coniferous forest. Blooms April to August. Elevation: 90-885m. | A | None. No habitat present. |
| *Lasthenia burkei* Burke's goldfields | FE/CE/1B | Meadows and seeps (mesic), vernal pools. Blooms April to June. Elevation: 15-600m. | A | None. No habitat present. Not observed during surveys. |
| *Leptosiphon acicularis* Bristly leptosiphon | -//4 | Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Blooms April to July. Elevation: 55-1500m. | A | None. No habitat present. Study area is outside the elevational range of species. |

| *Scientific Name* Common Name | Status USFWS/ CDFW/ CNPS rank | Habitat Affinities and Blooming Period/Life Form | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| *Leptosiphon jepsonii* Jepson's leptosiphon | -/-/1B | Chaparral, cismontane woodland, valley and foothill grassland, usually volcanic. Blooms March to May. Elevation: 100-500m. | A | None. Typical habitat not present. Study area is outside the elevation range of species. |
| *Lessingia hololeuca* Woolly-headed lessingia | -/-/3 | Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentinite. Blooms June-October. Elevation: 15-305m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Limnanthes vinculans* Sebastopol meadowfoam | FE/CE/1B | Meadows and seeps, valley and foothill grassland, vernal pools/vernally mesic. April-May. Elevation: 15-305m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Lomatium repostum* Napa lomatium | -/-/1B | Chaparral, cismontane woodland on serpentinite. Blooms March-June. Elevation: 90-830m. | A | None. No habitat present. |
| *Microseris paludosa* Marsh microseris | -/-/1B | Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Blooms April-June (July). Elevation: 5-300m. | P | Low. Potential grassland habitat present on site. Not observed during surveys. |
| *Monardella viridis* Green monardella | -/-/4 | Broadleafed upland forest, chaparral, cismontane woodland. June-September. Elevation: 100-1010m. | A | None. No habitat present. |
| *Navarretia leucocephala* ssp. *bakeri* Baker's navarretia | -/-/1B | Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic. Blooms April to July. Elevation: 5-1740m. | A | None. Typical habitat not present. Not observed during surveys. |
| *Perideridia gairdneri* ssp. *gairdneri* Gairdner's yampah | -/-/4 | Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools/vernally mesic. Blooms June to October. Elevation: 0-610m. | P | Low. Potential grassland habitat present on site. Not observed during surveys. |
| *Piperia candida* White-flowered rein orchid | -/-/1B | Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest, sometimes on serpentinite. Blooms (March) May to September. Elevation: 30-1310. | A | None. No habitat present. |

| ***Scientific Name*** **Common Name** | **Status USFWS/ CDFW/ CNPS rank** | **Habitat Affinities and Blooming Period/Life Form** | **Habitat Present/Absent** | **Potential for Occurrence** |
|---|---|---|---|---|
| *Ranunculus lobbii* Lobb's aquatic buttercup | -/-/4 | Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools/mesic. Blooms February to May. Elevation: 15-470m. | **P** | **Low**. Potential grassland habitat present on site. Not observed during surveys. |
| *Streptanthus brachiatus* ssp. *hoffmanii* Freed's jewelflower | -/-/1B | Chaparral, cismontane woodland on serpentinite. Blooms May to July. | A | None. No habitat present. |
| *Streptanthus glandulosus* ssp. *hoffmanii* Hoffman's bristly jewelflower | -/-/1B | Chaparral, cismontane woodland, valley and foothill grassland (often serpentinite). Prefers rocky soils. Blooms March to July. Elevation: 120-476m. | A | None. No habitat present. |
| *Usnea longissima* Methuselah's beard lichen | -/-/1B | Broadleafed upland forest, North Coast coniferous forest on tree branches, usually on old growth hardwoods and conifers. Elevation: 50-1460m. | A | None. No habitat present. |
| **Special Status Vegetation Communities** | | | | |
| *Northern Hardpan Vernal Pool* | | | **No** | **None** |

NOTES:

**U.S. FISH AND WILDLIFE SERVICE**

FE = federally listed Endangered

FT = federally listed Threatened

**CALIFORNIA DEPT. OF FISH AND WILDLIFE**

CE = California listed Endangered

CR = California listed as Rare

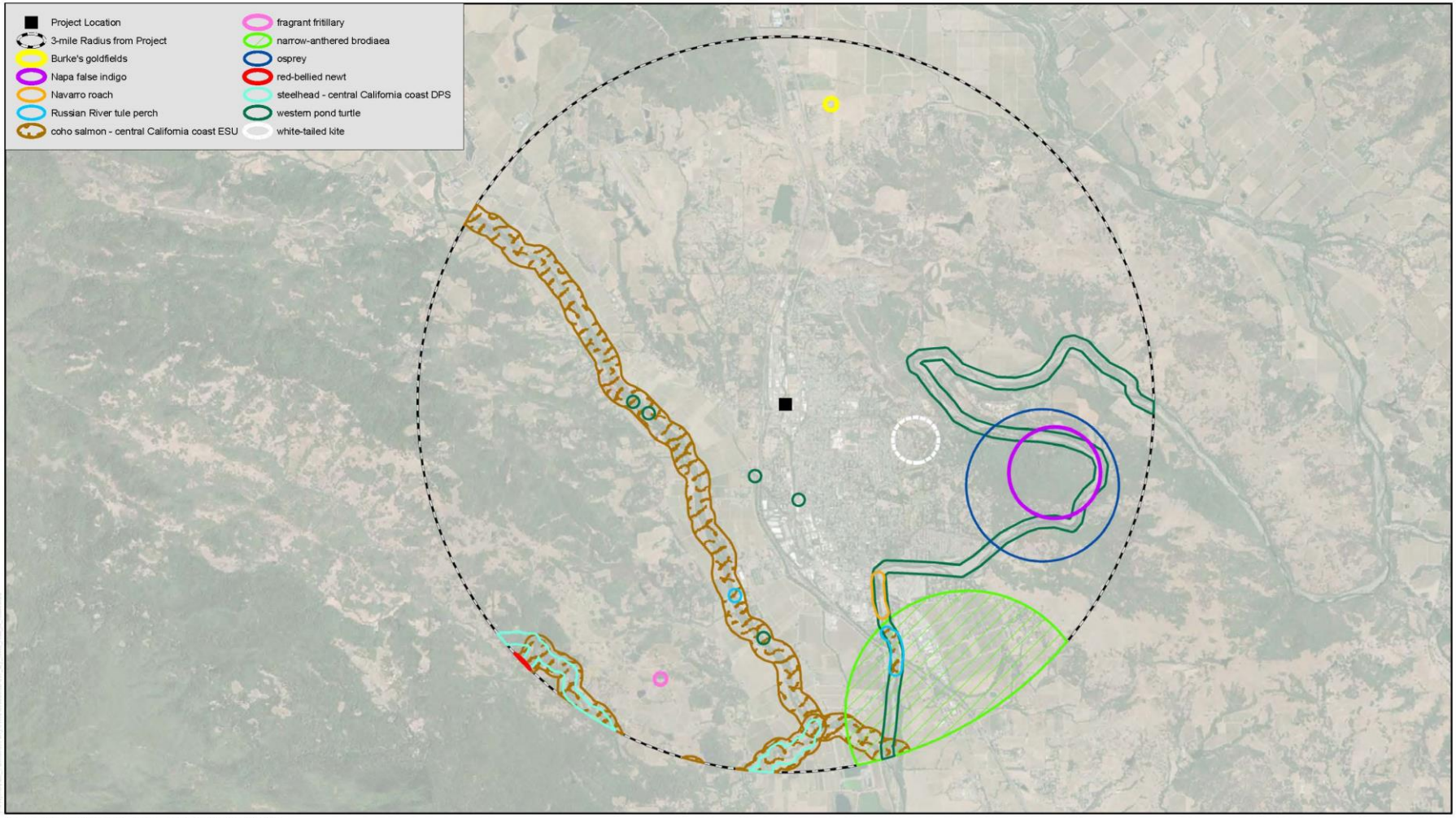
CT = California listed as Threatened

**CALIFORNIA NATIVE PLANT SOCIETY** -

Rank 1B: Plants rare and endangered in California and elsewhere

Rank 2B: Plants rare and endangered in California but more common elsewhere

Rank 4: Plant of limited distribution – a watch list.




**Appendix C: Mapped Occurrences of Special Status Plant and Wildlife Species.**

## Appendix D: Special Status Animal Species Potentially Occurring in the Study Area

| Common Name<br>*Scientific Name* | Status<br>USFWS<br>CDFW | Habitat Affinities and Reported Localities in the Project Area | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| **Invertebrates** | | | | |
| **Obscure Bumble bee**<br>*Bombus caliginosus* | -/- | Food plants include Baccharis, Circium, Lupinus, Lotus, Grindelia and Phacelia | **P** | **Study Area: Moderate**- a diversity of flowering plants occur in the grasslands.<br>**Project Impact Area**: **Moderate**- a diversity of flowering plants occur in the grasslands. |
| **monarch butterfly**<br>*Danaus plexippus* | FCT/* | Roosts during winter migration in dense stands of large trees such as eucalyptus and Monterey pines that provide shelter from the wind. Roosts in groves close to nectar and water sources. | A | Study Area: None- no suitable habitat present and site more than 30 miles from coast.<br>Project Impact Area: None |
| **Giuliani's dubiraphian riffle beetle**<br>*Dubiraphia giulianii* | -/- | Inhabits exposed, wave-washed willow roots in the slow flows of the Russian River. | **P** | **Study Area: Low**- Norton Slough supports willows although the slough is not wave washed.<br>Project Impact Area: None |
| **Western ridged mussel**<br>*Gonidea angulata* | -/- | Reported from Napa River or Napa Creek. | A | None: outside species range. |
| **California linderiella**<br>*Linderiella occidentalis* | -/- | Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. | A | Study Area: None - no ponding of water occurs in the wetlands on site.<br>Project Impact Area: None |
| **California freshwater shrimp**<br>*Syncaris pacifica* | FE/CE | Endemic to Marin, Napa and Sonoma counties in low elevation and low gradient streams with moderate to heavy riparian cover. | A | Study Area: None - no suitable habitat present. Slough is moderate gradient.<br>Project Impact Area: None |
| **Fish** | | | | |
| **Northern coastal roach**<br>*Hesperoleucus venustus navarroensis* | -/SSC | Occurs only in the Navarro River and Russian River basins. Generally found in small, warm, sometimes intermittent streams. Habitat generalists, found in warm intermittent streams as well as cold, well-aerated streams. No reported occurrences in Norton Slough (CNDDB 2021). | **P** | **Study Area: Moderate** - suitable habitat present.<br>Project Impact Area: None |

| Common Name<br>*Scientific Name* | Status<br>USFWS<br>CDFW | Habitat Affinities and Reported Localities in the Project Area | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| **Russian River tule perch**<br>*Hysterocarpus traskii pomo* | -/SSC | Occurs in low elevation streams of the Russian River. Requires clear, flowing water with abundant cover and deep (>1M) pool habitat. | A | Study Area: None - no suitable habitat present. Slough is moderate gradient.<br>Project Impact Area: None |
| **Hardhead**<br>*Mylopharodon conocephalus* | -/SSC | Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Present in the Russian River. Requires clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not present where exotic centrarchids predominate. | A | Study Area: None- no suitable habitat present. Slough is moderate gradient with no deep pools.<br>Project Impact Area: None |
| **steelhead - Central California Coast DPS**<br>*Onchorhynchus mykiss* | FT/SSC | Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen. | A | Study Area: None - no suitable habitat present.<br>Project Impact Area: None |
| **Coho salmon - Central California Coast DPS**<br>*Onchorhynchus kisutch* | FE/SE | Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen. | A | Study Area: None - no suitable habitat present.<br>Project Impact Area: None |
| **Amphibians** | | | | |
| **California giant salamander**<br>*Dicamptodon ensatus* | -/SSC | Known from wet coastal forests near streams and seeps. Larvae found in cold, clear streams and adults known from wet forests under rocks and logs near streams and lakes. | A | Study Area: None- no suitable habitat present.<br>Project Impact Area: None |
| **foothill yellow-legged frog**<br>*Rana boylii* | -/SSC | Prefers permanent stream pools, and creeks with emergent and/or riparian vegetation. Reported in Russian River E of Fitch Mtn (CNDDB 2021). | A | Project Impact Area: None - no suitable cobble-stone habitat present.<br>Project Impact Area: None |
| **California red-legged frog**<br>*Rana draytonii* | FT/SSC | Prefers semi-permanent and permanent stream pools, ponds and creeks with emergent and/or riparian vegetation. Occupies upland habitat especially during the wet winter months. Species occurs more than 3 miles to the west of the site (CNDDB 2021). | A | Project Impact Area: None - no suitable pooled habitat present.<br>Project Impact Area: None. |
| **Red-bellied newt**<br>*Taricha rivularis* | -/SSC | Spends dry season underground within root channels. Requires rapid streams with temps between 15°C and 26° C and rocky substrate for breeding and egg-laying. | A | Project Impact Area: None - no suitable rocky substrate habitat present.<br>Project Impact Area: None. |
| **Reptiles** | | | | |

| Common Name<br>*Scientific Name* | Status<br>USFWS<br>CDFW | Habitat Affinities and Reported Localities in the Project Area | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| **Western pond turtle**<br>*Emys marmorata* | -/SSC | Prefers permanent, slow-moving creeks, streams, ponds, rivers, marshes and irrigation ditches with basking sites and a vegetated shoreline. Requires upland sites for egg-laying. Species occurs to the south of the site in Foss Creek (CNDDB 2021). | **P** | **Study Area: High-** suitable habitat present in Norton Slough.<br>**Project Impact Area: Low** -suitable habitat present in grassland. |
| **Birds** | | | | |
| **Cooper's hawk**<br>*Accipiter cooperi* | MB/ SSC | Nests primarily in deciduous riparian forests. May also occupy dense canopied forests from gray pine-oak woodland to ponderosa pine. Forages in open woodlands. | **P** | **Study Area: Moderate**- Suitable nesting habitat present.<br>**Project Impact Area: Moderate** - Suitable nesting habitat present |
| **golden eagle**<br>*Aquila chrysaetos* | BCC/ CFP | Forages in a variety of habitats including grasslands, chaparral and oak woodland supporting abundant mammals. Nests on cliffs and escarpments and tall trees. | A | Study Area: None - trees not big enough.<br>Project Impact Area: trees not big enough. Would have been detected. |
| **Great blue heron**<br>*Ardea herodias* | -/- | Nests colonially in large trees near water | A | Study Area: None - trees not big enough.<br>Project Impact Area: trees not big enough. Would have been detected. |
| **long-eared owl**<br>*Asio otus* | / SSC | Breeds mainly in dense coniferous or mixed woodland, including riverine woodland belt. Nests in large previously used nest of another bird species or squirrel. Nests up to 10-29 ft in height, more rarely on ground or among shrubby growth. | A | Study Area: None - trees not big enough.<br>Project Impact Area: trees not big enough<br>Would have been detected. |
| **burrowing owl**<br>*Athene cunicularia hypugea* | BCC/ SSC | Nests in open, dry grasslands, deserts, prairies, farmland and scrublands with abundant active and abandoned small mammal burrows. Prefers short grasses and moderate inclined hills. | A | Study Area: None - no suitable habitat present; lack of suitable burrows.<br>Project Impact Area: None. |
| **Oak titmouse**<br>*Baeolophus inornatus* | BCC/ SSC | Breeds in cavities in oak woodlands, gleaning insects from the bark. Occurs from southern Oregon to northern Mexico along the Central Valley and xeric coastal foothills. | **P** | **Study Area: High**- suitable nesting habitat present.<br>**Project Impact Area: High**- suitable nesting habitat present |
| **Wrentit**<br>*Chamaea fasciata* | BCC | Nests in coastal scrub and chaparral. | A | Study Area: None: no coastal scrub or chaparral on the site.<br>Project Impact Area: None. |

| Common Name<br>*Scientific Name* | Status<br>USFWS<br>CDFW | Habitat Affinities and Reported Localities in the Project Area | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| **olive-sided flycatcher**<br>*Contopus borealis* | BCC/ SSC | Nests in open conifer or mixed oak woodland. Nests on horizontal branches, among a cluster of twigs and needles. | A | Study Area: None- no suitable habitat present.<br>Project Impact Area: None. |
| black swift<br>*Cypseloides niger* | BCC/SSC | Nests made of moss bound with mud or simply a cushion of grass or bare mud, are often built on small ledges with overhanging moss or grass near seashore and waterfalls. | A | Study Area: None- no suitable habitat present.<br>Project Impact Area: None. |
| **White-tailed kite**<br>*Elanus leucurus* | MB/CFP | Inhabits low rolling foothills and valley margins with scattered oaks and river bottom- lands or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows and marshes for foraging close to isolated, dense-topped trees for nesting and perching | **P** | **Study Area: High** - suitable nesting habitat present.<br>**Project Impact Area: High**- suitable nesting habitat present. |
| common yellowthroat<br>*Geothylpis trichas sinuosa* | BCC/SSC | Nests in fresh and salt marshes in tall grasses, tule patches and willows and forages in thick, continuous cover down to the water surface. | A | Study Area: None: no suitable habitat present.<br>Project Impact Area: None. |
| **bald eagle**<br>*Haliaeetus leucocephalus* | BCC/CE | Nests in tall snags near water and forages on fish. This species winters near large bodies of waters with fish. | A | Study Area: None: no suitable habitat present.<br>Project Impact Area: None. |
| **Osprey**<br>*Pandion haliaetus* | -/WL | Nests in large trees within 15 miles of good fish-producing water body. | A | Study Area: None: no suitable habitat present.<br>Project Impact Area: None. |
| **Nuttall's woodpecker**<br>*Picoides nuttallii* | BCC/- | Found primarily in oak woodlands and riparian woods. Cavity nester. | **P** | **Study Area: High**- suitable nesting habitat present in riparian corridor.<br>**Project Impact Area: High** -suitable nesting habitat in individual trees. |
| **Allen's hummingbird**<br>*Selasphorus sasin* | BCC/- | Nests in wooded areas, meadows, or thickets along shaded streams, on a branch low down on stem, although placement height varies between 10 inches and 90 feet. | **P** | **Study Area: High**- suitable nesting habitat present.<br>**Project Impact Area: High** -suitable nesting habitat in individual trees. |
| **northern spotted owl**<br>*Strix occidentalis caurina* | FT, BCC/CT | Dense coniferous and hardwood forest, shaded, steep sided canyons. | A | Study Area: None- no suitable habitat present.<br>Project Impact Area: None. |

| Common Name<br>*Scientific Name* | Status<br>USFWS<br>CDFW | Habitat Affinities and Reported Localities in the Project Area | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| **California thrasher**<br>*Toxostoma redivivum* | BCC | Nests in lowland and coastal chaparral. Key plants include chaparral whitethorn, buckbrush, ceanothus, chamise, toyon, coffeeberry, sugarbush, laurel sumac, holly-leaved cherry, lemonade berry, manzanita, and mountain mahogany. | A | Study Area: None- no suitable habitat present.<br>Project Impact Area: None. |
| **Mammals** | | | | |
| **Pallid bat**<br>*Antrozous pallidus* | -/SSC | Day roosts in crevices and cavities in rock outcrops, mines, caves, buildings, bridges, properly-designed bat houses, as well as hollows and cavities in a wide variety of tree species. May roost alone, in small groups (2 to 20 bats), or in 100s in maternity roosts. | A | Study Area: None - no suitable roosting habitat present.<br>Project Impact Area: None. |
| **Sonoma tree vole**<br>*Arborimus pomo* | -/SSC | Inhabits old growth, North Coast coniferous forests, redwood forests, and montane hardwood coniferous forests. Is found in the North Coast fog belt from Oregon to Sonoma County. Feeds almost exclusively on Douglas fir needles. | A | Study Area: None - no suitable habitat present.<br>Project Impact Area: None. |
| **Townsend's big-eared bat**<br>*Corynorhinus townsendii townsendii* | -/SSC,<br>WBWG:H | Day roosts in cave analogs; mines, buildings, bridges, sometimes large tree hollows. Females form maternity colonies, males roost singly, and all disperse widely after maternity season. During winter, roosts in cold, but non-freezing roosts, which may include man-made structures. | A | Study Area: None - no suitable roosting habitat present.<br>Project Impact Area: None. |
| **North American porcupine**<br>*Erethizon dorsatum* | -/- | Occurs in forests, mountains, chaparral, and sagebrush. During the winter porcupines eat evergreen needles and the inner bark of trees. During the spring and summer they eat flowers, berries, tender twigs, and leaves from deciduous plants. | A | Study Area: None - no suitable habitat present.<br>Project Impact Area: None |
| **Western red bat**<br>*Lasiurus blossevillii* | -/SSC,<br>WBWG:H | Solitary roosting, except when females are with young (from 2 to 6 are born). Roosts almost exclusively in foliage, under overhanging leaves, in woodland borders, rivers, agricultural areas including orchards, and urban areas with mature trees. Typically found in large cottonwoods, sycamores, walnuts and willows associated with riparian habitats. | **P** | **Study Area: High** - suitable potential roosting habitat occurs in the oak woodlands on site.<br>**Project Impact Area: High** – suitable habitat in individual trees. |

| Common Name<br>*Scientific Name* | Status<br>USFWS<br>CDFW | Habitat Affinities and Reported Localities in the Project Area | Habitat Present/Absent | Potential for Occurrence |
|---|---|---|---|---|
| **Hoary bat**<br>*Lasiurus cinereus* | -/-, WBWG:M | Roosts singly except when females are with young (from 2 to 4 are born) in dense foliage of medium to large coniferous and deciduous trees. Summer records predominantly male. | **P** | **Study Area: High** - suitable potential roosting habitat occurs in the oak woodlands on site.<br>**Project Impact Area: High** – suitable habitat in individual trees. |
| **California myotis**<br>*Myotis californicus* | -/- | Females give birth to one young. Typically roosts alone or in small groups in almost every habitat from desert to mountains, but most abundant at lower to mid-elevations. Roosts in crevices in rocks, slabs, hollow trees, exfoliating bark, buildings, mines. In trees may exhibit low roost fidelity, switching frequently | A | Study Area: None -no suitable roosting habitat present.<br>Project Impact Area: High – suitable habitat in individual trees. |
| **Yuma myotis**<br>*Myotis yumanensis* | -/-, WBWG:M | Forms often large maternity colonies, females giving birth to one young. Primarily a crevice roosting species in natural habitat, forms large maternity colonies in large spaces in man-made roosts, e.g. buildings. Also uses bridges, caves, mines, tree cavities, bat houses, abandoned swallow nests, exfoliating bark. | A | Study Area: None- no suitable roosting habitat present.<br>Project Impact Area: None |

**U.S. FISH AND WILDLIFE SERVICE (USFWS)**

FE = federally listed Endangered
FT = federally listed Threatened
FC = federal candidate for listing
BCC = Bird of Conservation Concern
MBTA = Migratory Bird Treaty Act.

**CALIFORNIA DEPT. OF FISH AND WILDLIFE (CDFW)**

CE = California listed Endangered
CT = California listed as Threatened
CFP = California Fully Protected
SSC = California Special Concern species

**WESTERN BAT WORK GROUP (WBWG)- PRIORITY**

California includes multiple regions where a species may have different WBWG Priority ranks, therefore the CNNDB includes categories for Medium-High, and Low-Medium Priority
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## Appendix E: Plant species observed on April 27, May 13, and June 9, 2021.

| Scientific Name | Common Name |
|---|---|
| *Acer macrophyllum* | Big-leaf maple |
| *Acer negundo* | Box elder |
| *Acmispon americanus* | American bird's-foot trefoil |
| *Acmispon brachycarpus* | Short podded lotus |
| *Agrostis capillaris* | Colonia bentgrass* |
| *Alisma lanceolatum* | Water plantain* |
| *Allium neapolitanum* | White garlic* |
| *Alnus rhombifolia* | White alder |
| *Arundo donax* | Giant reed* |
| *Avena barbata* | Wild oats* |
| *Baccharis pilularis* | Coyote brush |
| *Briza major* | Large quaking grass* |
| *Briza minor* | Small quaking grass* |
| *Bromus catharticus* | Rescue grass |
| *Bromus commutatus* | Hairy chess* |
| *Bromus diandrus* | Ripgut brome* |
| *Bromus hordaeceus* | Soft chess* |
| *Bromus* sp. | Brome* |
| *Carduus pycnocephalus* | Italian thistle* |
| *Carex barbarae* | Santa Barbara sedge |
| *Carex densa* | Dense sedge |
| *Centaurea solstitialis* | Yellow star thistle* |
| *Cichorium intybus* | Chicory* |
| *Cirsium vulgare* | Bull thistle* |
| *Convolvulus arvensis* | Bindweed* |
| *Cynodon dactylon* | Bermuda grass* |
| *Cynosurus echinatus* | Dogtail grass* |
| *Cyperus eragrostis* | Tall flat sedge |
| *Dactylis glomerata* | Orchard grass* |
| *Daucus carota* | Queen Anne's lace* |
| *Dipsacus fullonum* | Teasel* |
| *Eleocharis macrostachya* | Spike rush |
| *Elymus triticoides* | Creeping wildrye |
| *Epilobium brachycarpum* | Willow herb |
| *Epilobium* sp. | Willow herb |
| *Equisetum arvense* | Scouring rush |
| *Eschscholzia californica* | California poppy |
| *Festuca arundinacea* | Tall fescue* |
| *Festuca bromoides* | Six weeds fescue* |
| *Festuca myuros* | Rattail fescue* |
| *Festuca perennis* | Ryegrass* |
| *Foeniculum vulgare* | Fennel* |
| *Fraxinus latifolia* | Oregon ash |
| *Galium aparine* | Cleavers |
| *Genista monspessulana* | French broom* |
| *Geranium dissectum* | Cut-leaf geranium* |
| *Helminthotheca echioides* | Bristly ox-tongue* |
| *Holcus lanatus* | Velvet grass* |

| Scientific Name | Common Name |
|---|---|
| *Hordeum brachyantherum* | Meadow barley |
| *Hordeum marinum ssp. gussoneanum* | Mediterranean barley* |
| *Hordeum murinum ssp. leporinum* | Hare barley* |
| *Hypochaeris radicata* | Rough cat's-ear* |
| *Juglans hindsii* | Northern California black walnut |
| *Juncus effusus* | Pacific rush |
| *Juncus patens* | Spreading rush |
| *Juncus xiphioides* | Iris leaved rush |
| *Lactuca serriola* | Prickly lettuce* |
| *Lotus corniculatus* | Bird's-foot trefoil* |
| *Lupinus bicolor* | Dwarf lupine |
| *Lupinus nanus* | Sky lupine |
| *Lysimachia arvensis* | Scarlet pimpernel* |
| *Medicago polymorpha* | Bur clover* |
| *Mentha pulegium* | Pennyroyal* |
| *Nasturtium officinale* | Watercress |
| *Parentucellia viscosa* | Yellow parentucellia* |
| *Paspalum dilitatum* | Dallis grass* |
| *Phalaris aquatica* | Harding grass* |
| *Phalaris minor* | Mediterranean canarygrass* |
| *Plantago lanceolata* | English plantain* |
| *Polypogon monspeliensis* | Rabbits foot grass* |
| *Prunus* sp. | Fruit tree* |
| *Quercus agrifolia* | Coast live oak |
| *Quercus lobata* | Valley oak |
| *Raphanus sativus* | Wild radish* |
| *Rubus armeniacus* | Himalayan blackberry* |
| *Rumex crispus* | Curly dock* |
| *Salix laevigata* | Red willow |
| *Salix lasiolepis* | Arroyo willow |
| *Sambucus nigra* ssp. *caerulea* | Blue elderberry |
| *Sisrynchium bellum* | Blue-eyed grass |
| *Sonchus asper* | Sowthistle* |
| *Toxicodendron diversilobum* | Poison oak |
| *Tragopogon porrifolius* | Salsify* |
| *Trifolium hirtum* | Rose clover* |
| *Vicia lathyroides* | Pea vetch* |
| *Vicia sativa* | Spring vetch* |
| *Vicia villosa* | Hairy vetch* |
| *Vinca major* | Periwinkle* |
| *Xanthium strumarium* | Cocklebur |

Species with an * are non-native.

## Appendix F: Wildlife species observed on May 13, 2021.

| ***Species Detected*** | | **Habitats in which Detected** | | | |
|---|---|---|---|---|---|
| ***Scientific Name*** | **Common Name** | NNG | Riparian | Emergent Wetland | Individual trees |
| ***Birds*** | | | | | |
| *Aphelocoma californica* | Western Scrub-Jay | X | X | | X |
| *Baeolophus inornatus* | Oak titmouse | | X | | X |
| *Buteo lineatus* | Red-shouldered hawk | | X | | X |
| *Calypte anna* | Anna's hummingbird | | X | X | X |
| *Cathartes aura* | Turkey Vulture | X | | | X |
| *Certhis americana* | Brown creeper | | X | | X |
| *Corvus brachyrhynchos* | Common crow | X | X | X | X |
| *Corvus corax* | Northern raven | X | X | X | X |
| *Elanus leucurus* | White-tailed kite | X | X | | X |
| *Melospiza melodia* | Song sparrow | X | X | X | |
| *Pipilo crissalis* | California towhee | | X | | X |
| *Pipilo maculatus* | Spotted towhee | | X | | X |
| *Psaltriparus minimus* | Bushtit | | X | | X |
| *Spinus tristis* | American goldfinch | X | | X | |
| *Streptopelia decaoto* | Eurasian collared dove | X | X | X | X |
| *Sturnus vulgaris* | European starling | X | X | X | X |
| *Tachycineta bicolor* | Tree swallow | | X | | X |
| ***Mammals*** | | | | | |
| *Felis catus* | Domestic cat | X | X | | |
| *Lepus californicus* | Black-tailed Jackrabbit | X | X | X | |
| *Odoicoileus hemionius californicus* | Black-tailed deer | X | X | X | X |
| *Thomomys bottae* | Botta's pocket gopher | X | | | |