

Biological Study Report

North State Pavilion



Prepared for:

Omni-Means, Ltd.

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Prepared by:

ENPLAN

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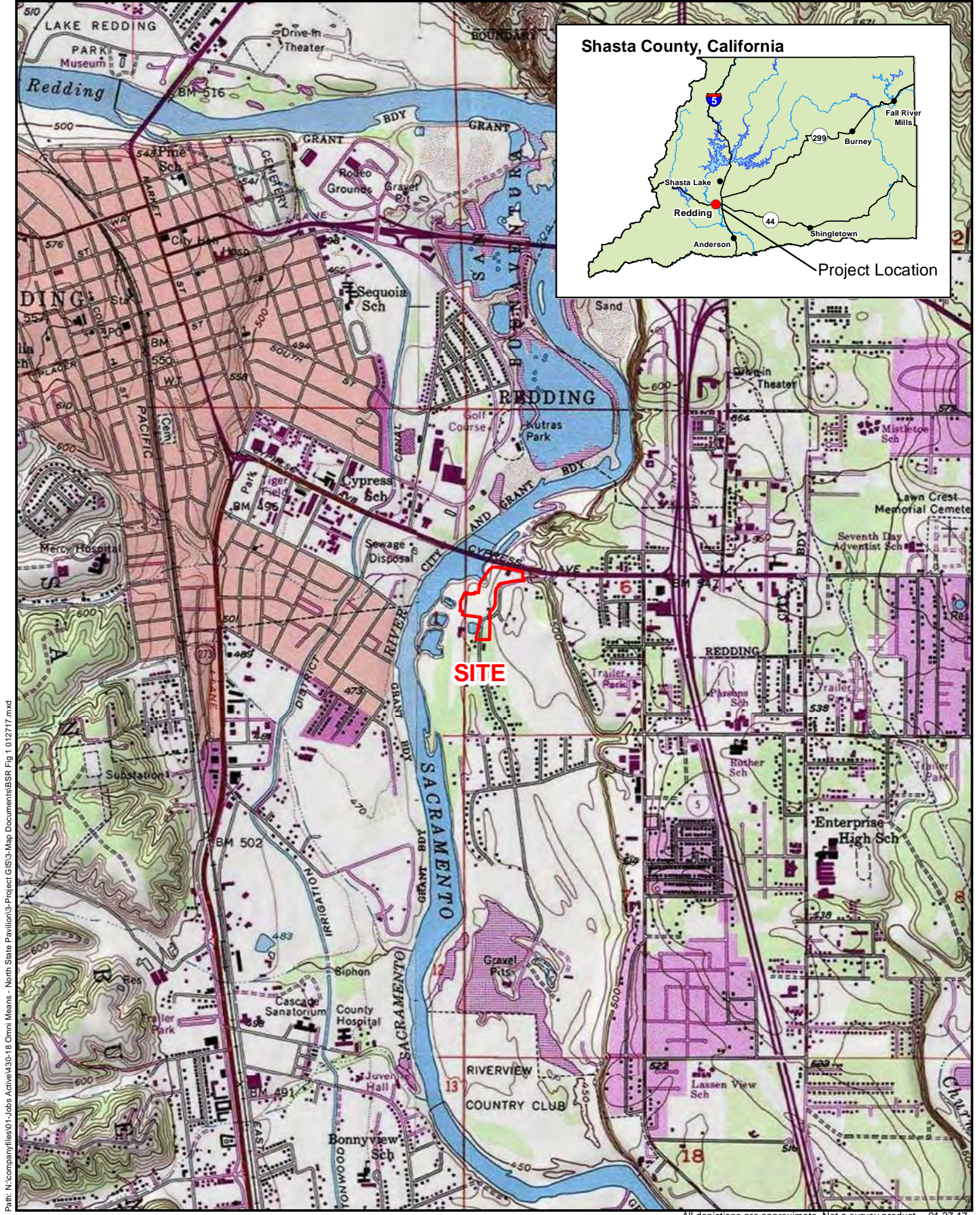
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1. INTRODUCTION

This biological study report addresses a ±10.55-acre project site in the City of Redding, located southwest of the intersection Cypress Avenue and Hartnell Avenue, at the northerly terminus of Henderson Road. The site is being considered for development of the North State Pavilion, a health care facility, by Dignity Health Mercy Medical Center Redding. As shown in Figure 1, the site is located primarily in Township 31 North, Range 4 West, Section 6, of the U.S. Geological Survey's (USGS) Enterprise, 7.5-minute quadrangle (USGS, 1957). A small portion of the site is located in Township 31 North, Range 5 West, Section 1, of the Enterprise quadrangle. An aerial photograph of the site is shown in Figure 2.

The objectives of the current study are: (1) to identify and characterize natural communities that are present on the site, (2) to evaluate the potential for special-status plant and wildlife species, as well as nesting migratory birds, to occur on the site, and (3) to determine if the site has been designated as critical habitat for any federally listed species. Recommended measures to protect special-status species, sensitive habitats, critical habitat designated for federally listed species, and nesting migratory birds are presented in the report.



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SITE

Shasta County, California

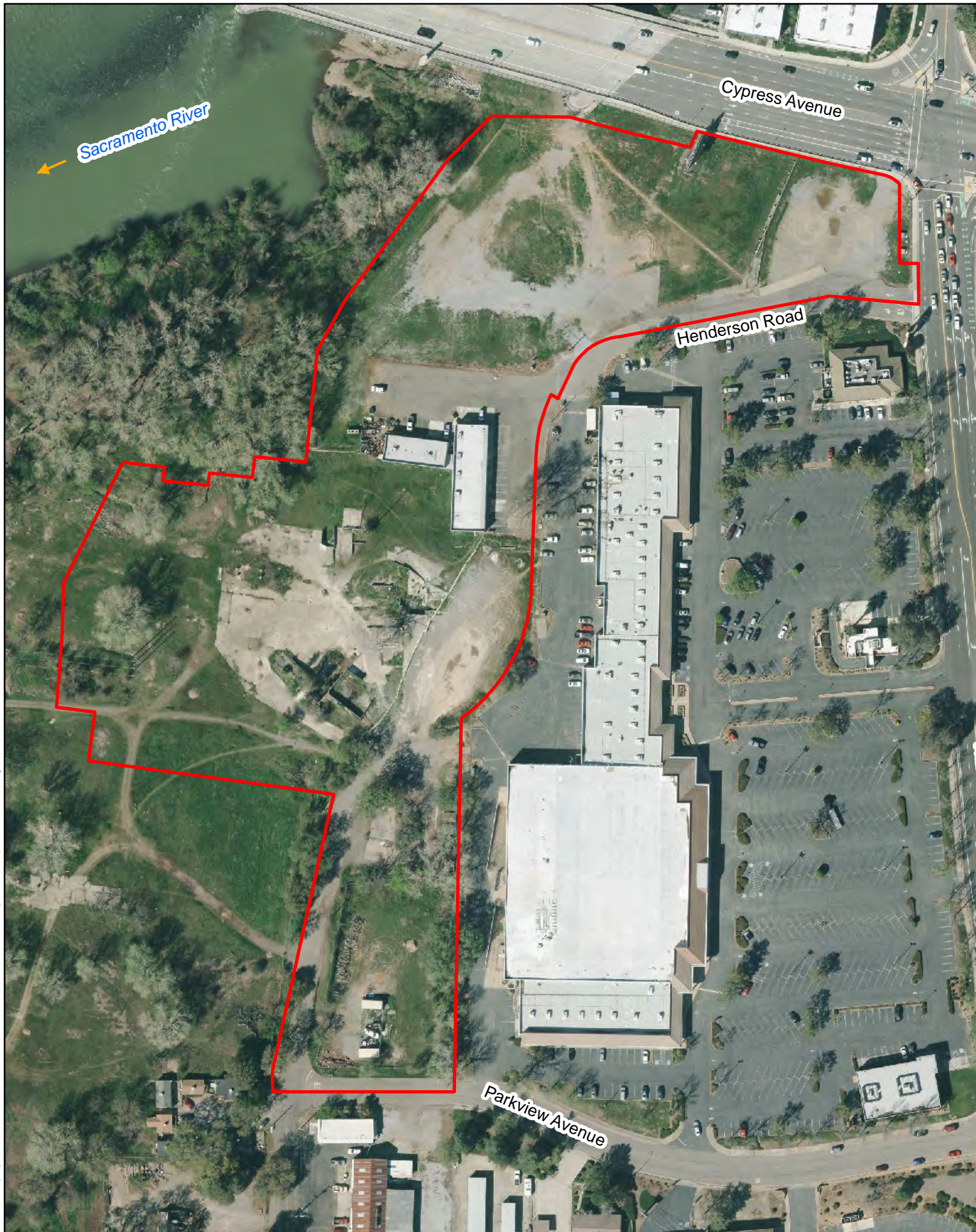
Project Location



Figure 1
Project Vicinity

All depictions are approximate. Not a survey product. 01.27.17





Feature and boundary locations depicted are approximate only.

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Figure 2
Study Area

2. METHODOLOGY AND STAFF QUALIFICATIONS

Prior to conducting fieldwork, a biological records search was completed. Records reviewed included the United States Fish and Wildlife Service's (USFWS) species list for the site (USFWS, 2016a), California Department of Fish and Wildlife's (CDFW) California Natural Diversity Data Base (CNDDDB) records (CDFW, 2016), critical habitat GIS data maintained by the National Marine Fisheries Service (NMFS, 2016) and USFWS (USFWS, 2016c), and critical habitat information in the Federal Register (NMFS, 2005). The CNDDDB records search covered a 10-mile radius around the site. This entailed review of records for portions of the following quadrangles: Redding, Olinda, Whiskeytown, Shasta Dam, Bella Vista, Igo, Enterprise, Palo Cedro, Cottonwood, Balls Ferry, Project City, and Ono.

Upon completion of the pre-field review, a botanical field survey was undertaken in general accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2009). The botanical survey was conducted on June 10, 2016. Most of the special-status plant species potentially occurring on the site would have been evident at the time the fieldwork was conducted. The potential presence of species not readily identifiable during the field survey was determined on the basis of observed habitat characteristics. The survey consisted of an intensive and systematic evaluation of the site. Additionally, Mr. Luper conducted a supplemental survey on December 8, 2017, to verify that site conditions had not changed since the 2016 biological surveys were completed.

The general wildlife evaluation was conducted in two phases. The first phase consisted of the records search described above. Under the second phase, the habitats and special habitat elements on the site were determined through field reconnaissance and their potential to support special-status species was evaluated. Wildlife surveys were conducted on June 24 and November 7, 2016. Many of the special-status animal species potentially occurring on the site would not have been evident at the time the fieldwork was conducted. The potential presence of species not readily identifiable during the field survey was determined on the basis of observed habitat characteristics. Because potentially suitable habitat for special-status bat species was observed on the

site, a daytime bat habitat assessment was conducted by a bat specialist. The assessment was conducted on December 12, 2017.

The botanical field survey was conducted by John Luper. Mr. Luper has a Bachelor of Science degree in Botany. He has over 10 years of experience in the design and implementation of botanical field studies. He is familiar with the flora of the region as well as state and federal statutes pertaining to special-status species. The general wildlife evaluation was conducted by Darrin Doyle and Sam Huscher. Mr. Doyle has a Bachelor of Science degree in Biology and has over 15 years of experience conducting biological surveys in California. He is familiar with wildlife species of the region and their habitat requirements. Mr. Huscher has a Bachelor of Science degree in Biology and less than one year experience conducting biological surveys in California. The daytime bat assessment was completed by Greg Tatarian with Wildlife Research Associates. Mr. Tatarian has over 22 years of experience with bats and holds a CDFW Memorandum of Understanding for work with bats.

In addition to the field surveys, Mr. Doyle and Mr. Luper attended a field meeting with Amy Henderson, Senior Environmental Scientist with the California Department of Fish and Wildlife, on October 21, 2016, to discuss sensitive resources that could be impacted by site development. The biological evaluation was conducted over 20 plus hours, which consisted of multiple site visits completed by various ENPLAN biologists and resource agency staff. Much of the site is highly urbanized (i.e., covered over with buildings and pavement), which significantly limits vegetated areas and the need for intensive field studies.

3. RESULTS

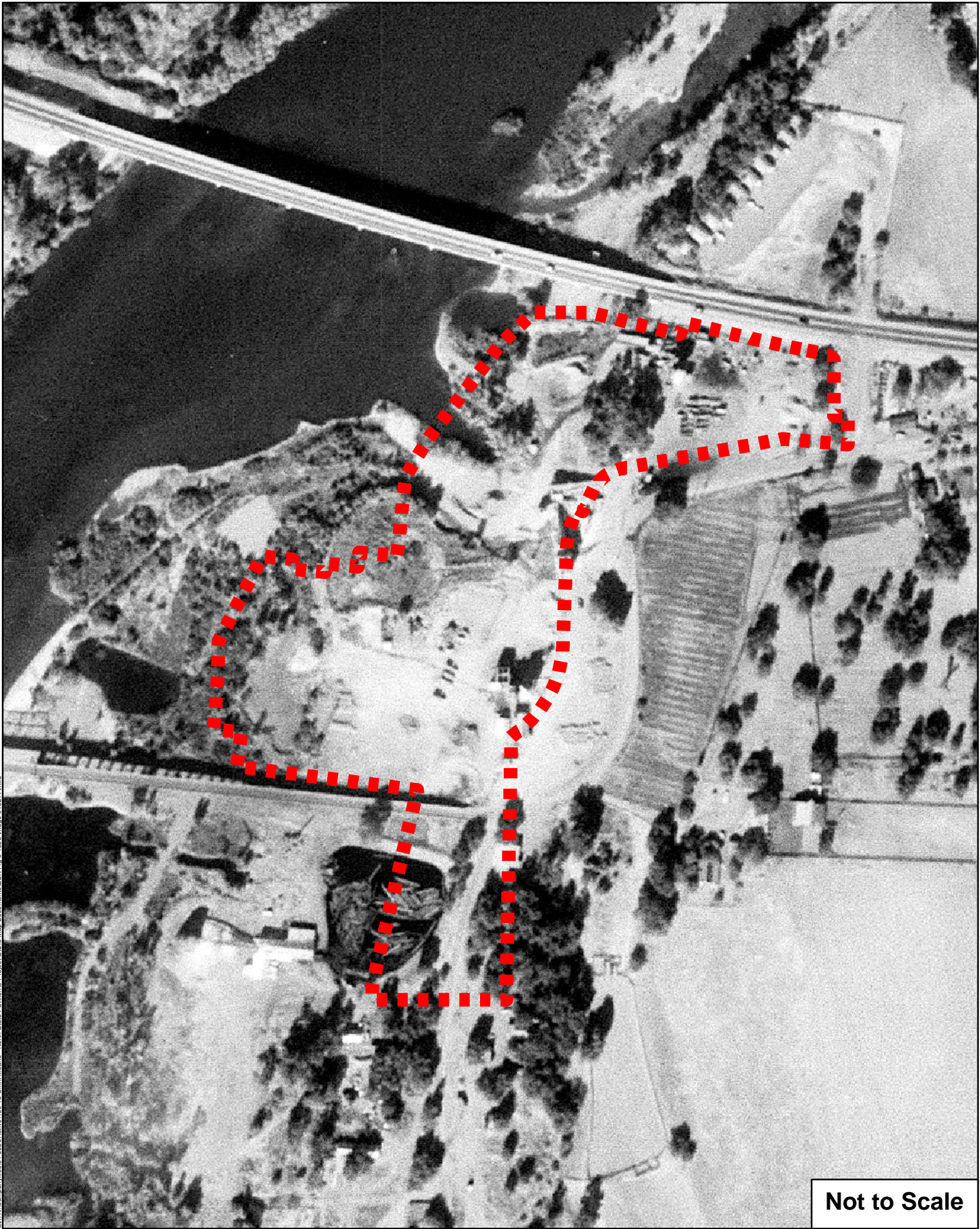
Plant Communities/Wildlife Habitats

The project site is located within an urban setting and is situated approximately 480 feet above sea level. The topography is relatively level; runoff from the site is tributary to the Sacramento River, which flows southward along the western site boundary. The site is highly disturbed and previously supported multiple uses, including, but not limited to, a concrete plant, sand and gravel operation, greenhouse growing operation, and automotive-related businesses. Remnants of the past uses are still present (e.g., partially paved areas, concrete retaining walls, etc.). One building is currently present on the site and houses several small businesses.

Review of aerial photographs showed that the site and surrounding areas were essentially devoid of vegetation in 1943, but were undeveloped. In 1955, the site supported a lumber mill and a gravel plant, with minimal vegetation present in the current project site (Figure 3). By 1983, a well-developed band of riparian vegetation was present along the Sacramento River, primarily outside the project site boundary. By 1998, several clumps of young cottonwoods are visible within the site boundary. These same cottonwoods continue to be present on the site today.

The on-site plant communities/wildlife habitats, in order of abundance, consist of urban habit, annual grassland, and a riparian woodland; small stands or individuals of valley oaks and interior live oaks are present outside the riparian habitat, but do not form a distinct oak woodland community. Field inspection confirmed that no wetlands are present. Photographs of the on-site plant communities/wildlife habitats are provided in Appendix A. Descriptions of the on-site plant communities/wildlife habitats are provided below and their locations and acreages are shown in Figure 4.

According to CDFW, since the inception of the Natural Heritage Program in 1979, natural communities have been considered for their conservation significance (CDFW, 2017). Unique natural communities were recorded in the CNDDDB. However, in the mid-1990s, funding for the natural community portion of the program was cut. Although no new occurrences of natural communities have been added to the CNDDDB since that time, many of the natural community occurrences maintained in the CNDDDB still have



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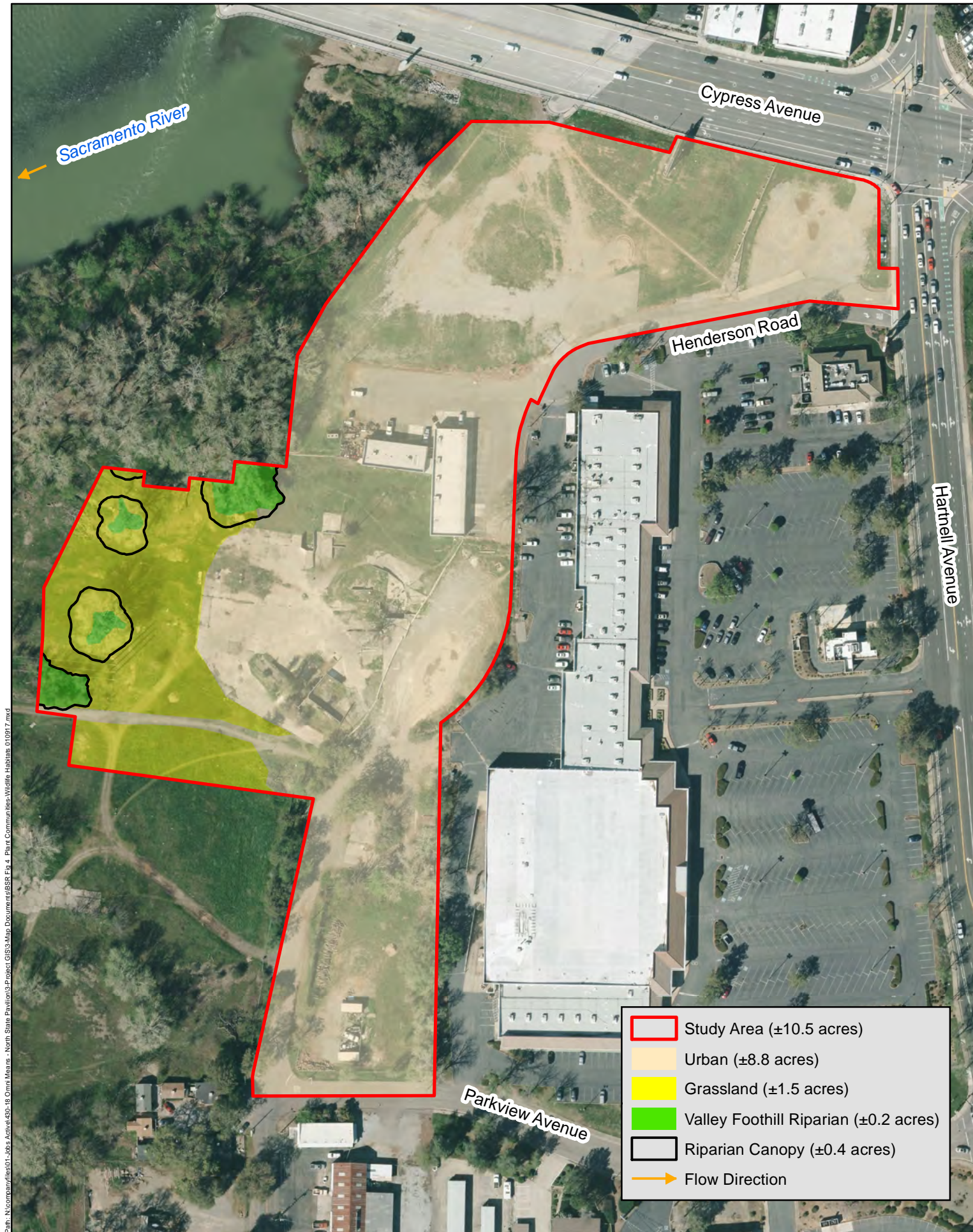
Not to Scale

Feature and boundary locations depicted are approximate only. 01.02.18

Figure 3

1955 Aerial with Approximate Location of Project Site





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Figure 4

Feature and boundary locations depicted are approximate only.

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Plant Communities/Wildlife Habitats

significance for conservation and their existence should be considered in the environmental review process. Review of CNDDDB natural community records showed that a Great Valley valley oak riparian forest has been broadly mapped immediately south of the project site.

Prior to 1999, natural communities in California were generally described using the Holland nomenclature system (California Department of Fish and Game, 1986). Since 1999, CDFW has been standardizing California's vegetation nomenclature to comply with the National Vegetation Classification System. However, there is no direct translation between the two systems, so the Holland nomenclature remains in use in the CNDDDB.

One purpose of vegetation classification is to assist in determining the level of rarity and imperilment of vegetation types. Some conservation groups (e.g., NatureServe), have evaluated natural communities and assigned global (G) and state (S) ranks according to their conservation status (ranging from 1 to 5 (i.e., critically impaired to secure)). CDFW considers ranks S1-S3 as being of special concern and warranting consideration in CEQA documents.

If a high-priority natural community is present on a site, a case-by-case determination must then be made as to whether the project-affected stands can be considered as high-quality occurrences of the given community. Criteria that may be used to determine if the community should be considered as a high-quality occurrence include factors such as lack of invasive exotic species, absence of human-caused disturbances, evidence of reproduction, and absence of insect and disease damage.

In addition to identifying the natural community types present and describing their site-specific characteristics, the wildlife values of the on-site communities are described based on data provided in CDFW's California Wildlife Habitat Relationships (WHR) classification system, which addresses 59 wildlife habitat types in California.

URBAN

Urban habitat is widespread on the project site, covering approximately 8.8 acres and including buildings, roads, and areas that have been previously cleared. This highly disturbed community type is not recognized in the CDFW natural communities

classification system or the Holland system, but is described in the WHR system. Urban habitat is not a high-priority natural community.

General Characteristics

Urban habitats are characterized as natural habitats that have been converted to facilitate development or have been substantially altered by planting non-native vegetation. Vegetative components present may include tree groves, street strips, shade trees, lawns, and/or shrub cover. The diversity of wildlife species is lowest in downtown areas and highest in suburbia. Wildlife species commonly found in urban habitats include pigeons, doves, gulls, house sparrows, mockingbirds, raccoons, opossums, and striped skunks. Overall, urban habitat has low value to wildlife species.

On-Site Characteristics

As previously discussed, the project site has a long history of urban use, dating back to at least 1955 and continuing through to the present. Only one building is currently present on the site; the building has an asphalt driveway and parking lot on its northern and eastern sides. Lands further north of the building were recently used as a construction staging area for the Cypress Avenue bridge replacement project and are currently devoid of vegetation and covered with gravel. Lands to the south of the building are primarily covered with concrete pads or gravel. The southernmost extension of the project site is enclosed in a chain-link fence and appears to be used for storage and as a plant nursery.

Native valley oaks (*Quercus lobata*) and interior live oaks (*Q. wislizeni*) are present in the urban habitat, primarily along roads, fence lines, and property boundaries, but past site development has fragmented the oak woodland to the degree that these trees do not function as an oak woodland community. Numerous non-native plant species have become established in the urban habitat, including tree-of-heaven, English ivy, yellow star-thistle, filarees, and annual grasses. Wildlife species observed in association with urban habitat included rock dove, European starling, northern mockingbird, Eurasian collared dove, and killdeer. Overall, the on-site urban habitat has low to moderate values for wildlife species.

Potential Effects on Urban Habitat

Project implementation would result in the redevelopment of approximately 8.8 acres of urban habitat. However, urban habitat is not a natural feature of the landscape, and is not a special-status natural community. The most important biological component of the on-site urban habitat is its mature trees, which may provide nesting habitat for migratory birds and roosting habitat for bats. At the field review meeting, CDFW staff recommended that removal of trees should be avoided where feasible and that mitigation should be provided to offset the unavoidable loss of trees.

Under current project plans, trees with a dbh ≥ 6 " that would be removed from the urban habitat consist of 14 valley oaks, nine Fremont cottonwoods, five interior live oaks, five trees of heaven, one Chinese pistache, one California sycamore, one mulberry, and one grey pine. Trees to be retained in the urban habitat consist of eight Fremont cottonwoods, four valley oaks, four black willows, two trees of heaven, one Japanese privet, and one sycamore. The loss of trees in the on-site urban habitats will be offset through implementation of the proposed planting plan. The plan calls for planting of 108 trees native to the local area (47 valley oaks, 14 California sycamores, 22 blue oaks, and 25 interior live oaks). In addition, 17 other California native trees are included in the plan (5 incense cedars and 12 coast redwood trees). Native shrubs and groundcovers included in the planting plan include Oregon grape, western redbud, coffeeberry, 'Emerald Carpet' manzanita, California fuschia, yarrow, and deer grass. Given the planting plans for the site and the extent of tree avoidance, no mitigation is warranted to further offset the loss of trees/shrubs in the urban habitat.

ANNUAL GRASSLAND

Annual grassland is the second-most common community on the project site, covering approximately 1.5 acres. This highly disturbed community type is somewhat similar to the non-native grassland community described by Holland and the annual grassland community described in the WHR system. None of the alliances or associations described in the CDFW natural communities classification system adequately describe the on-site community, which is not a "natural" or even "semi-

natural” community. The on-site grassland community is not a high-priority natural community.

General Characteristics

Annual grasslands occur on the floor and foothills of the Central Valley, and in the interior of the Coast Ranges. Annual grassland species also occur as an understory in oak woodlands. Annual grasslands are composed of mostly non-native annual grass species. Common annual grass species include wild oats, soft chess, ripgut brome, wild barley, and foxtail fescue. Forbs often include filarees and clovers; numerous native forbs can also be present.

Annual grassland is inhabited by a variety of wildlife species. Mammals common in this community include black-tailed jackrabbit, coyote, and several species of mice. Snakes are often abundant in annual grassland, feeding on mice and other rodents. Amphibians are relatively uncommon in this community; however, species such as the western toad and Pacific treefrog may be locally abundant near aquatic habitats. Annual grassland also provides nesting and foraging habitat for certain migratory birds.

On-Site Characteristics

The on-site annual grassland occurs in the central western arm of the project site. Based on historical aerial photographs, this area appears to have been subjected to less intensive human activity than the urban habitat. The grassland is fragmented, has compacted soils, is comprised of numerous non-native species, and is highly disturbed; current uses include a power line corridor, access roads, and footpaths. Species present include rose clover, winter vetch, yellow star-thistle, smilo grass (an introduced perennial grass), wild oats, bromes, and other non-native species. No wildlife species were observed in association with the on-site annual grassland. Overall, the annual grassland on the site has low values for wildlife species.

Potential Effects on Annual Grassland

Project implementation would result in the conversion of ±1.5 acres of annual grassland to urban use. Given that the grassland is comprised of numerous non-native

species, is highly disturbed, and is not a special-status natural community, no mitigation is warranted to offset potential impacts to the annual grassland.

RIPARIAN

Riparian habitat is the least common community on the project site, covering only about 0.4 acres (based on canopy cover). It is represented by a stand of small oaks and cottonwoods under the power lines, by two small clusters of cottonwoods, and by several cottonwoods that are an extension of a larger off-site cottonwood community. As with the rest of the site, this community has been highly disturbed by human activity. The community type is somewhat similar to the Great Valley mixed riparian forest described by Holland and the valley foothill woodland habitat described in the WHR system. None of the alliances or associations described in the CDFW natural communities classification system adequately describe the on-site community, but it is most similar to the Fremont cottonwood association. All associations within the Fremont cottonwood alliance are high-priority natural communities. Great Valley mixed riparian forest has been assigned a priority rank of S2.

General Characteristics

Valley foothill riparian habitats occur along drainages on the valley floor and foothills. Such habitats tend to occur along low-gradient streams in deep, alluvial soils that are usually moist throughout the summer and fall. The structure of the habitat generally includes a canopy layer composed primarily of winter deciduous trees (e.g., cottonwood and valley oaks), a subcanopy layer (e.g., box elder and Oregon ash), and an understory shrub layer (e.g., wild grape, poison oak, blue elderberry, willows, and California blackberry). Along larger streams and rivers, the combination of dense vegetation and fallen limbs may make the understory almost impenetrable. Herbaceous plants provide minimal vegetative cover, except in openings where tall forbs and shade-tolerant grasses occur.

Valley foothill riparian habitat is utilized by numerous wildlife species. At least 147 bird species have been recorded as nesters or winter visitors in Sacramento River riparian habitat. Based on data maintained by ebird.org (an online database

utilized/updated by bird enthusiasts), 110 bird species were observed over a 14 month period in the Henderson Open Space area located off-site to the west of the project site. Additionally, 55 species of mammals are known to use California's Central Valley riparian habitats (California Department of Fish and Game, 1988). Streamside vegetation provides important nesting and denning habitat as well as cover and food sources. Riparian habitats serve as important dispersal corridors for amphibians, turtles, and some mammals. Riparian vegetation is also important because it shades streams, thus lowering water temperatures. This benefits salmonids, which prefer streams with cool, well oxygenated water. Streamside vegetation also introduces coarse woody debris into streams, which provides shelter for fish and amphibians. Leaves and small branches are broken down by numerous species of invertebrates, which in turn, are consumed by fish or amphibians.

On-Site Characteristics

A well-developed riparian woodland occurs in the floodplain of the Sacramento River to the west of the project site. The northwestern portion of the project site abuts the riparian woodland and approximately 0.4 acres of riparian woodland (based on canopy cover) occurs within the western extension of the project site. Riparian woodland makes up less than four percent of the ±10.55-acre project site. The subject vegetation is on the fringe of the riparian corridor, and is relatively young, dating back only 30 to 50 years. Several homeless camps are present in or near the mapped riparian habitats.

Woody riparian species present include Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and valley oak (*Quercus lobata*); in addition, some Himalayan blackberry (*Rubus armeniacus*), and a few individuals of wild grape (*Vitis californica*), arroyo willow (*Salix lasiolepis*) and sandbar willow (*Salix exigua*) are associated with the trees. Nutsedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and other herbaceous species are present below the woody vegetation. Wildlife species observed in association with the on-site riparian woodland included the turkey vulture, acorn woodpecker, killdeer, northern flicker, western scrub-jay, dark-eyed junco, and red-tailed hawk. Overall, the riparian woodland on the site has very high value to wildlife

species, but this is primarily due to the presence of the well-developed off-site riparian vegetation.

Potential Effects on Riparian Habitat

A steep slope extends along the northwestern boundary of the project site, separating most of the highly disturbed project site from the off-site riparian community. It is our understanding that no project-related development will occur on or below the slope. The project proposal calls for a lot line adjustment that would transfer all of the riparian habitat on and below the slope into City of Redding ownership. However, up to approximately 0.4 acres of riparian habitat will be removed from lands in the westernmost extension of the project site.

Due to the disturbed nature of the site and the high level of human activity, the on-site riparian habitat does not represent a high-quality occurrence of the community type. Trees within the riparian habitat slated for removal consist of approximately 20 Fremont cottonwoods with a diameter at breast height (dbh) between 6 and 40 inches and one valley oak with a 12" dbh. Trees in the on-site riparian habitat to be retained consist of one 10" dbh valley oak and three 12" dbh interior live oaks.

At the field review meeting with CDFW, Senior Environmental Scientist Amy Henderson recommended that riparian vegetation be avoided where feasible and that mitigation be provided where avoidance is not feasible. For the purposes of this report, work occurring outside the canopy limit may be considered full avoidance (Figure 4). Work affecting riparian habitat and/or canopy would be subject to mitigation. Potentially significant direct and indirect impacts to riparian habitat can be minimized through implementation of Mitigation Measure 1 and offset through implementation of Mitigation Measure 2. It is anticipated that the riparian planting called for in Mitigation Measure 2 will occur on disturbed City-owned lands adjacent to the subject site.

Special-Status Plant Species

The USFWS species list for the site (Appendix B; September 2016, updated November 2017) identifies one federally listed plant species, slender Orcutt grass, as potentially being affected by work proposed in the USGS Enterprise quadrangle.

Review of CNDDDB records (September 2016 and November 2017) showed that no special-status plant species have been mapped as occurring on or near the site; the nearest recorded extant special-status plant population is nearly three miles to the east-southeast. The following special-status plant species are known to occur within a 10-mile radius: Ahart's paronychia, Boggs Lake hedge-hyssop, Canyon Creek stonecrop, dubious pea, Henderson's bent grass, legenera, Nuttall's ribbon-leaved pondweed, Red Bluff dwarf rush, Sanford's arrowhead, silky cryptantha, slender Orcutt grass, slender silver moss, Sulphur Creek brodiaea, and woolly meadowfoam (Appendix C).

No suitable habitat for special-status plant species occurs on the project site. As documented in Appendix D, no special-status plant species were observed during the botanical survey, nor are any expected to be present. Based on the results of the botanical survey, and the lack of suitable habitat for special-status plants, reference populations for plant species previously reported within the 10-mile radius were not inspected. A checklist of vascular plant species observed during the botanical field survey is provided in Appendix E.

Special-Status Animal Species

The USFWS species list for the site (Appendix B) identifies eight federally listed animal species as potentially occurring in or being affected by work in the USGS Enterprise quadrangle: California red-legged frog, Conservancy fairy shrimp, delta smelt, northern spotted owl, Central Valley steelhead, valley elderberry longhorn beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp.

Review of CNDDDB records showed that one special-status animal species, Central Valley steelhead, has been broadly mapped as occurring in the Sacramento River floodplain within the site. Sacramento River winter-run Chinook salmon are mapped as occurring in the Sacramento River adjacent to the site. In addition to these two fish species, the following special-status animals are reported by the CNDDDB to occur within a 10-mile radius of the project site: bald eagle, bank swallow, Central Valley spring-run Chinook salmon, fisher – West Coast distinct population segment (DPS), foothill yellow-legged frog, pallid bat, Shasta salamander, spotted bat, Townsend's big-eared bat, tricolored blackbird, valley elderberry longhorn beetle, vernal

pool fairy shrimp, vernal pool tadpole shrimp, western pond turtle, western red bat, and western spadefoot (Appendix C).

CNDDDB records also show that the following non-status animal species are known to occur within a 10-mile radius: Antioch Dunes anthicid beetle, California linderiella, great egret, hoary bat, kneecap lanx, long-eared myotis, North American porcupine, Oregon shoulderband, osprey, Sacramento anthicid beetle, Shasta chaparral, silver-haired bat, western pearlshell, and Yuma myotis. The non-status western pearlshell has been broadly mapped as occurring in the Sacramento River floodplain within the site.

Although not reported on the USFWS species list or in CNDDDB records, two additional special-status fish (Central Valley fall-run Chinook salmon and Central Valley late-fall-run Chinook salmon) are known to utilize the adjacent reach of the Sacramento River. Additionally, two bird species of special concern, yellow warbler and yellow-breasted chat, have been reported in close proximity to the site; and one fully protected mammal, ringtail, is known to occur within the 10-mile search radius. The potential for special-status species to occur on the project site is addressed in Appendix D.

A checklist of wildlife species observed on the project site during the wildlife evaluation is presented in Appendix F; no special-status animal species were observed. However, as documented in Appendix D, 14 special-status wildlife taxa may occur on or adjacent to the project site and could potentially be affected by project implementation. The following discussion addresses special-status animal species potentially affected by project implementation.

BATS

Pallid Bat

The pallid bat, a state Species of Special Concern, is a wide-ranging bat found throughout western North America. This bat inhabits low-elevation rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and upper montane coniferous forests. Pallid bats roost alone, in small groups, or in large colonies. Day and night roosts include rocky outcrops, cliffs, caves, mines, trees, and a variety of man-made structures. Pallid bats mate between October and February, and young are

born between April and July. Females generally produce up to two offspring per year. Maternity colonies disperse between August and October.

Trees and structures on the site provide potentially suitable roosting habitat for the pallid bat; the species has a moderate potential to be present.

Spotted Bat

The spotted bat, a state Species of Special Concern, inhabits grasslands, mixed-conifer forests, and deserts. Most often, this bat is found in arid desert and in open pine forests in rough, rocky terrain. Spotted bats roost mainly in rock crevices, but are also known to roost in caves and buildings. Spotted bats are not known to roost on bridges. Spotted bats feed over water and along washes (moths are the principal food). The spotted bat is presumed uncommon in California and has a low potential to utilize the project site as roosting habitat. The spotted bat has been recorded in Shasta County on only two occasions, with the nearest observation being in the Palo Cedro vicinity, roughly seven miles to the east of the project site.

Townsend's Big-Eared Bat

Townsend's big-eared bat, a state Species of Special Concern, occurs in a variety of habitats from sea level to upper montane coniferous forest, and may be found in any season. Townsend's big-eared bat is most abundant in mesic habitats. Townsend's big-eared bats roosts in caves, buildings, mines, tunnels, and other man-made structures. They do not tuck themselves into cracks or crevices for roosting as many bat species do, but instead prefer open roosting areas such as caves. Townsend's big-eared bats occasionally roost on bridges (Erickson et al., 2002). This bat is especially sensitive to disturbance of roosting sites, and a single disturbance event may result in abandonment of the roost site. Mating occurs between November and February, and offspring are born in May or June. Young bats generally are capable of flight around three weeks after birth.

The project site provides foraging habitat for Townsend's big-eared bats, but is unlikely to provide suitable roosting habitat because the on-site buildings do not include

attics or other cave-like spaces suitable for roosting and the project site is subject to a high level of human disturbance.

Western Red Bat

The western red bat is a state Species of Special Concern. In California, western red bats, particularly breeding females, occur primarily below 200 meters in elevation. Individuals have been detected up to nearly 2,500 meters, but these have been males or non-reproductive females. The bats both forage and roost in riparian habitats and are strongly associated with mature gallery riparian habitats that are over 50 meters wide. Substantially less activity was detected in riparian stands two to three mature trees in width, and even less activity was observed in young riparian stands only one tree in width (Pierson et al., 1998).

During the summer months, breeding females are concentrated in the Central Valley, particularly along the Sacramento and San Joaquin rivers and the lower reaches of large rivers that drain the Sierra Nevada. Over 80 percent of the records of breeding females are from these areas. Breeding occurs in August and September and young are born from May through July. The summer distribution of males is less concentrated, with roughly 50 percent being found in the Central Valley and surrounding foothills, over 25 percent in southern California, and about 20 percent along the coast. During the winter months, nearly 55 percent of the records are from the coast, nearly 25 percent are from the Central Valley, and about 20 percent are in southern California; there is no obvious difference in distribution between males and females during the winter months (Pierson et al., 1998).

Roosting is expected to occur primarily in the largest riparian trees, particularly in cottonwoods and sycamores. Roosting has also been observed in orchards, such as walnut orchards flanking the Sacramento River, perhaps due to the loss of gallery riparian forest habitat. Roosting bats usually shelter on the underside of overhanging leaves. The bats often hang from one foot on leaf petioles, but may occasionally hang from twigs or branches, and may resemble a fruit or dead leaf (Pierson et al., 1998).

The on-site riparian woodland includes small pockets of mature gallery riparian habitat adjacent to the broad belt of riparian habitat along the Sacramento River. This

vegetation class provides high-quality foraging and roosting habitat for the western red bat; the species has a high potential to be present.

Potential Effects on Bats

A daytime assessment of bat habitat on the project site was completed by a qualified bat biologist. The biologist identified bat use in the small room that connects the two wings of the onsite building. Two cottonwoods were also found to contain small cavities that could potentially support tree-roosting bats, and canopy-roosting could potentially use both the riparian and non-riparian trees for roosting. These locations are identified on Figure 5.

The greatest potential for adverse effects to bat species (including non-status species) associated with the proposed project is for vegetation removal or building demolition to result in the inadvertent death of bats that may be roosting therein. Appropriate avoidance/minimization measures to protect roosting bats (including non-status species) during construction have been provided by the bat biologist and are incorporated into Mitigation Measures 3 through 5. With implementation of these measures, roosting bats would not be adversely affected by project construction.

BALD EAGLES

The bald eagle, a federally delisted species, a state Endangered species, and a state Fully Protected species, winters throughout most of California at lakes, reservoirs, river systems, and in some rangelands and coastal wetlands (CDFW, 2001). Bald eagles are opportunistic foragers, usually feeding on fish or waterfowl, but they also



Path: N:\company\files\01-Jobs\Active\430-18 Omni Means - North State Pavilion\GIS\Map Documents\18SR Fig 5 Bat Roosting Habitats 01.02.17.mxd

Figure 5

Feature and boundary locations depicted are approximate only.

01.02.17



Identified Bat Roosting Habitats (Excluding Canopy Roosting Habitat)

feed on other small animals and eat carrion. Most bald eagles migrate from nesting areas in the Pacific Northwest to spend the winter in California, arriving during fall and early winter (CDFW, 2001). California's resident breeding pairs remain in California during winter, typically in the vicinity of their nesting areas.

In California, the breeding season lasts from about January through August. The breeding range is primarily in mountainous habitats near reservoirs, lakes, and rivers, mainly in northern California and in the Central Coast Range. Nests are constructed atop large trees or man-made structures, generally within sight of aquatic habitat. The adults may repair the same nest annually, increasing its size over time, or they may construct a new nest in their territory. Often, the breeding territory of a pair of eagles includes several nests. Between one and three eggs are laid in late winter or early spring. Incubation lasts approximately 35 days. Chicks fledge when they are between 9 and 14 weeks old. Because of a resurgence in the bald eagle population, the species was delisted by the USFWS in 2009. However, the bald eagle is protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act, and is State Endangered and a State Fully Protected species.

Large trees on and near the project site provide potentially suitable nest sites for bald eagles; bald eagles thus have a moderate potential to be present. Although there are no records of bald eagles nesting on the site in past years and no eagles or their nests were observed on or near the project site during the field surveys, it is possible that bald eagles could nest on or near the site in future years.

Potential Effects on Nesting Bald Eagles

Nesting bald eagles, if present at the time of construction, could be directly or indirectly affected by site development. Direct effects could include mortality resulting from removal of a tree/shrub containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults. In California, the nesting season for bald eagles is between January 1 and August 31. Removal of potential nesting habitat or limiting construction activities to other times of the year (before January 1 or after

August 31) is unlikely to affect nesting bald eagles. Implementation of Mitigation Measure 6 would preclude disturbance to nesting bald eagles.

RINGTAILS

Ringtail, a State fully protected species, is widely distributed throughout the state, occurring in various riparian habitats and in brush stands of most forest and shrub habitats, usually in close proximity to permanent water. The species is nocturnal and active year round. Foraging on the ground among the rocks and trees, ringtail are primarily carnivorous, eating birds, reptiles, invertebrates, fruits, and nuts. Females nest in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests. Young are reportedly born in May or June. The ringtail changes den sites frequently, rarely spending more than two or three days in the same shelter. Female ringtails may regularly move their young from den to den.

Potential Effects on Ringtails

Ringtails are very unlikely to den on the project site given the lack of suitable denning habitat, particularly at ground level (no downed logs or rock crevices are present, no active or abandoned burrows were observed, and only minimal groundcover is present). However, if present, ringtails could be directly impacted by tree removal if construction activities do not allow sufficient time for ringtails to move to alternate dens. Mitigation Measures 4 and 5 provide standards for the timing and method of tree removal. These measures call for creation of high noise and vibration levels prior to removal of trees containing hollows or other potential den sites. Implementation of these measures would preclude adverse impacts to ringtails during project construction.

SALMONIDS

Salmonids, which include Chinook salmon and steelhead, inhabit clear, cold waters. The various runs of anadromous Chinook salmon and steelhead in California are differentiated primarily by the maturity of adult fish entering freshwater and the time of spawning migrations (Moyle, 2002). Due to their dependency on dissolved oxygen, Chinook salmon and steelhead have strict thermal requirements. According to Armour

(1991), the preferred temperature ranges for the different life stages of Chinook salmon are as follows: adult migration (3.3°C–14.4°C), adult spawning (4.4°C–13.9°C), egg incubation and fry emergence (5.0°C–14.4°C), and juvenile rearing (5.0°C–14.4°C). Carter (2005) summarized previous research conducted by others on the thermal tolerances of salmonids and found that temperature ranges lethal to all life stages of Chinook salmon and Central Valley steelhead are 25°C and 21°C, respectively. Detailed life history information and habitat requirements regarding the Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley fall-run Chinook salmon, late-fall-run Chinook salmon, and Central Valley steelhead are provided below.

Sacramento River Winter-Run Chinook Salmon

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

Sacramento River winter-run Chinook salmon are distinguished from other runs of Chinook salmon in the Sacramento River in that adults generally enter freshwater and migrate upstream during winter and spring, then spawn several months later after their gonads have matured (Moyle, 2002). Based on data compiled by Schaffter (1980) and Vogel and Marine (1991), spawning occurs between mid-April and mid-August. The winter-run currently spawns almost exclusively in the Sacramento River between Keswick Dam and Red Bluff, where cold water released from Keswick Dam during summer provides conditions suitable for spawning. Fry emerge between mid-June and mid-October and move to river margins or tributaries to rear. Juveniles rear in freshwater streams and rivers between July and mid-March. Emigration occurs between mid-March and mid-July.

Recent trends in Sacramento River winter-run Chinook salmon abundance indicate some recovery since the listing; however, the population remains well below the recovery goals, and is particularly susceptible to extinction due to loss of genetic

variation resulting from the reduction of the ESU to one population. According to NMFS (2011a), the winter-run continues to be at a high risk of extinction. Sacramento River winter-run Chinook salmon population size increased during the early 2000s, but has declined in recent years due to periods of unfavorable ocean conditions (2005-06) and drought (2007-09). Longer term reduction in risk of extinction and improved status of the winter-run will depend on the successful re-establishment of another low-risk population in a historically used area (e.g., Battle Creek).

Sacramento River winter-run Chinook salmon are known to utilize the adjacent reach of the Sacramento River for spawning and/or rearing on a yearly basis.

Central Valley Spring-Run Chinook Salmon

The Central Valley spring-run Chinook salmon is listed as Threatened by both the state and federal governments. Historically, the spring-run was the dominant run in the Sacramento River Basin, with runs in excess of 600,000 adults (Moyle et al., 1995). The declining population is mainly attributable to loss of upstream, cold water habitats blocked by impassable dams. In addition to this habitat loss, a spatial and temporal overlap with spawning fall-run has resulted in hybridization and homogenation of some subpopulations (Moyle et al., 1995; CDFW, 1993). Although protective measures have likely led to an increased abundance, Central Valley spring-run Chinook salmon populations are still well below recent historic levels. Threats from hatchery production, habitat loss, overharvesting, disease, predation, and water diversions continue to keep the ESU at moderate risk for extinction.

Adult Central Valley spring-run Chinook salmon begin entering the Sacramento-San Joaquin Delta in early January, and enter natal streams between mid-March and mid-October (Schaffter, 1980; Vogel and Marine, 1991). Upon entering fresh water, spring-run are sexually immature and must hold in cold water habitats through summer to mature. Typically, spring-run utilize mid- to high-elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between August and mid-October, mostly within four tributaries of the Sacramento River: Butte, Big Chico, Deer, and Mill Creeks. Embryos hatch following a five- to six-month incubation period and alevins (sac-fry) remain in the gravel for an

additional two to three weeks. Some fish begin the downstream migration soon after emergence, while others do so as yearlings. In general, juvenile rearing in streams and rivers occurs between mid-October and mid-May.

Historically, the spring-run was the dominant run in the Sacramento River Basin, with runs in excess of 600,000 adults (Moyle et al., 1995). The declining population is mainly attributable to loss of upstream, cold water habitats blocked by impassable dams. In addition to this habitat loss, a spatial and temporal overlap with spawning fall-run has resulted in hybridization and homogenation of some subpopulations (Moyle et al., 1995; CDFG, 1993). Threats from hatchery production, habitat loss, overharvesting, disease, predation, and water diversions continue to keep the ESU at moderate risk for extinction. According to NMFS (2011b), with a few exceptions, spring-run populations have declined more recently, particularly since 2006. The recent declines in abundance place the Mill and Deer Creek populations in the high extinction risk category due to their rate of decline. Butte Creek remains in the low extinction risk category, although the rate of decline makes it a borderline case. The only spring-run populations that seemed to have improved in status between 2005 and 2010 are in Battle Creek and Clear Creek. Overall, the status of the ESU has likely deteriorated since 2005, and its extinction risk may have increased.

Central Valley spring-run Chinook salmon are known to utilize the adjacent reach of the Sacramento River for spawning and/or rearing on a yearly basis.

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

Central Valley fall-run Chinook salmon (a Federal Species of Concern and a state Species of Special Concern) and Central Valley late-fall-run Chinook salmon (a Federal Species of Concern and a state Species of Special Concern) are currently the most abundant of the Chinook runs in the Sacramento River Watershed (CDFW, 1993). Much of the habitat where fall-run/late-fall-run historically spawned is located downstream of major dams on the Sacramento River and San Joaquin River; thus, these runs were not affected to the degree that other Chinook runs were. The fall-run/late-fall-run spawn in the lower reaches (200 to 2,000 feet in elevation) of most rivers and streams in the Central Valley.

Adult fall-run enter freshwater at an advanced stage of maturity, migrate quickly upstream to spawning sites, and spawn within a few days or weeks of entering freshwater (Healey, 1991). Based on data compiled by Schaffter (1980) and Vogel and Marine (1991), spawning migrations occur from July through December. Spawning occurs between October and December, with peak spawning occurring in November. Embryo incubation occurs between October and early March. Unlike other Chinook runs, juveniles emigrate to the ocean three to seven months after they emerge from the spawning gravel. Downstream emigration to the sea by juveniles occurs between mid-December and mid-June.

Based on data compiled by Schaffter (1980) and Vogel and Marine (1991), adult late-fall-run begin their spawning migrations in the Sacramento River between mid-October and mid-April. Spawning occurs between January and April, with peak spawning occurring in February and March. Embryo incubation occurs between early January and late June. Downstream emigration by juveniles occurs between mid-April and mid-December.

Central Valley fall-run/late-fall-run Chinook salmon are known to utilize the adjacent reach of the Sacramento River for spawning and/or rearing on a yearly basis.

Central Valley Steelhead

The Central Valley steelhead, an anadromous strain of rainbow trout that emigrates to sea and returns to inland waters as adults to spawn (McEwan, 2001; Moyle, 2002), is listed as Threatened by the federal government. This ESU includes all naturally produced steelhead in the Sacramento-San Joaquin Rivers. Existing wild steelhead stocks in the Central Valley are mostly confined to the upper Sacramento River (below Shasta Dam) and its tributaries.

The majority of the Central Valley steelhead spawning migration occurs between August and March (Schaffter, 1980; Vogel and Marine, 1991). Spawning then occurs between December and April in streams with cool, well-oxygenated water that is available year round. Eggs incubate for one to four months before the fry emerge. Newly emerged fry move to shallow stream margins to escape predation and high water velocities. Steelhead may remain in fresh water for one to four years before emigrating,

but typically emigrate after two years in fresh water. Once at sea, adults spend anywhere from one to four years there before returning to fresh water to spawn as four or five year olds.

Factors affecting the survival and recovery of Central Valley steelhead are similar to those affecting winter- and spring-run Chinook salmon and are primarily associated with habitat loss. The most recent biological information suggests that the extinction risk of Central Valley steelhead has increased since 2005; several factors for this change include drought and poor ocean conditions in recent years (NMFS, 2011c). There continue to be threats to the genetic integrity of natural or wild steelhead from hatchery steelhead programs in the Central Valley, but it is unclear if or how this factor has influenced the overall viability of the ESU. The best available information on the biological status of the ESU and continuing and new threats indicate that its status as a Threatened species is appropriate. Long term recovery will require improved freshwater habitat conditions, abatement of a wide range of threats including genetic threats from hatchery populations, and the reintroduction of steelhead to some of its historic habitat.

Central Valley steelhead are known to utilize the adjacent reach of the Sacramento River for spawning and/or rearing on a yearly basis.

Potential Effects on Salmonids

Salmonids would not be directly affected by site development, but could be indirectly affected. Indirect effects on salmonids could potentially occur if sediments or other pollutants enter the Sacramento River and degrade rearing habitat and/or spawning habitat. In a worst-case scenario, fish could die or be impaired by asphyxiation if sediment-laden water fouls their gills, and developing embryos and/or alevins in spawning gravels downstream could die or be impaired from lack of oxygen resulting from siltation of the streambed. Potential indirect effects on salmonids will be minimized through implementation of best management practices (BMPs) for erosion control and spill prevention. The BMPs will be identified in the Storm Water Pollution Prevention Plan to be prepared for the project in compliance with the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) permit for construction storm water discharge.

WESTERN POND TURTLES

The western pond turtle, a state Species of Special Concern, is found in a variety of habitats (e.g., ponds, reservoirs, streams, rivers, ditches, sloughs) from sea level to approximately 6,000 feet in elevation. Pond turtles prefer ponds or slow-flowing streams with deep pools. Such habitats often have muddy bottoms. The presence of suitable basking sites is often an important habitat component for western pond turtles. Basking sites may include partially submerged logs, rocks, mats of floating vegetation, or open mud banks.

Courtship and mating occur primarily in late April or early May. Most egg-laying occurs in May and June, although some females may deposit a second clutch of eggs later in summer. Nests may be a considerable distance (1,200 feet or more) from aquatic sites, but are usually within 500 feet of water. Nests are generally found in substrates that have a high sand, clay, or silt component, and are generally located on unshaded, south-facing slopes. Using their hind feet, female turtles excavate a shallow, two- to three-inch-deep, flask-shaped nest with an opening approximately 1.5 inches in diameter. From 1 to 13 eggs are deposited in the nest. Females often cover the nest site with soil and leaf litter to conceal the nest. Eggs hatch approximately 80 to 130 days later. Hatchlings generally emerge from the nest in August and move to aquatic sites, although in some populations in the northern part of the species' range, hatchlings may overwinter and emerge from the nest the following spring. Adult and juvenile western pond turtles generally leave aquatic sites in the fall to overwinter in nearby uplands and return to aquatic sites in the spring.

Potential Effects on Western Pond Turtles

Although no open water habitat is present on-site, suitable open water habitat is present within 500 feet of the site. Western pond turtles could possibly use the project site for overwintering or for nesting. Given the presence of gravel, asphalt, and concrete surfaces throughout most of the project area, as well as the presence of compacted soils, turtle use would most likely be confined to the western arm of the project site. If pond turtles were to enter the project site, they could be trapped within the work area and injured or killed. Additionally, if nests were established within the

work area, eggs could be crushed by construction equipment. Implementation of Mitigation Measure 7 would preclude direct impacts to the pond turtle.

YELLOW-BREASTED CHATS

The yellow-breasted chat frequents dense, brushy thickets and tangles near water, and thick understory in riparian woodlands. No suitable habitat for the yellow-breasted chat occurs on the project site; however, potentially suitable habitat is present in adjoining off-site riparian areas. Yellow-breasted chats are infrequently observed along the Sacramento River in the Redding area. Although the species has not been reported on or adjacent to the project site and was not observed during our field study, the species could potentially be present in riparian habitat near the project site.

Potential Effects on Yellow-Breasted Chats

Nesting yellow-breasted chats, if present at the time of construction, could be directly or indirectly affected by site development. Direct effects could include mortality resulting from removal of a tree/shrub containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults. In California, the nesting season for yellow-breasted chats is from late April to early August. Removal of potential nesting habitat or limiting construction activities to other times of the year is unlikely to affect nesting yellow-breasted chats. Implementation of Mitigation Measure 6 would preclude disturbance to nesting yellow-breasted chats.

YELLOW WARBLERS

In migration, the yellow warbler is found in a variety of sparse to dense woodland and forest habitats. During the breeding season, the yellow warbler generally occupies riparian vegetation in close proximity to water, where they may be found in willows, cottonwoods, and numerous other riparian shrubs or trees. The yellow warbler primarily nests in riparian woodlands from sea level to approximately 8,000 feet in elevation; nesting also occasionally occurs in shrubs in open coniferous forests. Potentially

suitable nesting habitat for the yellow warbler occurs on and adjacent to the project site. Yellow warblers have been observed in the adjacent Henderson Open Space as well as elsewhere along the Sacramento River throughout the Redding area, often during their migration periods.

Potential Effects on Yellow Warblers

Nesting yellow warblers, if present at the time of construction, could be directly or indirectly affected by site development. Direct effects could include mortality resulting from removal of a tree/shrub containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults. In California, the nesting season for yellow warblers is from April to late July. Removal of potential nesting habitat or limiting construction activities to other times of the year is unlikely to affect nesting yellow warblers. Implementation of Mitigation Measure 6 would preclude disturbance to nesting yellow warblers.

Critical Habitat

Critical habitat is a specific geographic area that is essential for the conservation of plants and animals federally listed as threatened or endangered. Critical habitat may require special management or protection. Critical habitat can be designated by the USFWS or the National Marine Fisheries Service (NMFS). The USFWS species list does not identify any critical habitat on or near the project site. However, review of the USFWS Critical Habitat Mapper (USFWS, 2016b), NMFS GIS data (NMFS, 2016), and the *Federal Register* (NMFS, 2005) found that NMFS has designated the Sacramento River in the site vicinity as critical habitat for Chinook salmon (winter-run and spring-run) and Central Valley steelhead. Critical habitat for fish includes the river or stream water column, bottom (including those areas and associated gravel used as spawning substrate), and the adjacent riparian zone, which contributes cover, shelter, shade, and food for rearing juveniles.

Potential Effects on Critical Habitat

As discussed above, site development would require removal of riparian woodland, which, by definition, is a component of critical habitat designated for Chinook salmon and Central Valley steelhead. Site development could also indirectly affect the riverine component of critical habitat if sediments or other pollutants were to enter the Sacramento River and degrade rearing habitat and/or spawning habitat, or impair water quality.

Because the proposed project would not be federally funded or require federal permits, critical habitat requirements do not apply to the proposed project. However, it should be noted that direct impacts on the riparian component of critical habitat would be minimized through implementation of Mitigation Measure 1 and/or off-set through implementation of Mitigation Measure 2. Potential indirect impacts on the spawning/rearing component of critical habitat would be minimized through implementation of the SWPPP and BMPs for erosion control and spill prevention in compliance with the State Water Resources Control Board's NPDES permit required for the proposed project.

Non-Status Wildlife Species

Project implementation has the potential to directly and indirectly affect non-status wildlife species. Direct effects due to habitat removal are addressed above under Plant Communities/Wildlife Habitats. Other potential adverse effects on wildlife may include increased habitat disturbance due to "edge effects," interference with wildlife movement, interference with bird nesting activities, and increased bird death due to collisions with windows. Each of these potential effects is addressed below.

EDGE EFFECTS

The proposed project has the potential to affect adjacent habitats. Although the project site is highly disturbed, the adjacent Sacramento River corridor and Henderson Open Space area provide high habitat values to wildlife. If left unaddressed, factors such as lighting, noise, human activity, invasive plants, and/or increased numbers of

predators could adversely affect adjoining high-value wildlife habitats. These factors are described further below.

Nighttime Lighting

At present, the northern portion of the site is substantially influenced by artificial light sources, including the Cypress Avenue roadway/bridge lighting as well as vehicle headlights from motorists traveling on Cypress Avenue. To a lesser degree, the eastern portion of the site is influenced by exterior lighting associated with the abutting commercial development. The western and southern portions of the site are minimally influenced by artificial light. Artificial lighting has the potential to impact birds and other nocturnal species. These effects can include impacts to singing and foraging behavior, reproductive behavior, navigation, and altered migration patterns. In addition, nocturnal species may be more susceptible to predators due to increased lighting.

The proposed project would introduce new exterior light sources that include exterior wall-mounted safety and security lighting on on-site buildings as well as the parking areas. As called for in Mitigation Measure 8, potential impacts of light pollution on wildlife will be minimized by orienting or shielding on-site light sources in a manner that will prevent light spillage into adjacent natural habitats.

Operational Noise

Increases in ambient noise levels related to site development may result from an increase in traffic volumes, operation of landscape maintenance equipment and tools (e.g., mowers, blowers, trimmers, wood chippers), and loud music from vehicles. Some of these noise sources, such as traffic noise, are relatively constant (although with daily cycles related to peak traffic periods), and some wildlife species may habituate and adapt to increased ambient noise levels, while others may avoid noisy areas. Other noise sources are more occasional or discrete and are more likely to startle wildlife and at least temporarily disrupt their behavior at the time.

Most studies addressing the effects of noise on wildlife have focused on birds. In several studies, traffic noise has been found to reduce the density of nesting birds; this may be due in part to masking of bird calls by traffic noise. Other effects of noise on

birds may include physiological and behavioral effects, and damage to hearing from acoustic overexposure. However, birds are more resistant to acoustic overexposure than are humans and other mammals, and are able to recover from acoustic overexposure, and some birds may change their calls to compensate for increased noise levels.

Currently, the site is significantly influenced by noises in the project vicinity. Sources include vehicle traffic along Cypress Avenue as well as commercial use to the east. Pedestrian trails, boating on the Sacramento River, and homeless use also contribute to noise levels in the area. The increase in ambient noise levels due to project implementation is not expected to substantially interfere with wildlife activity adjacent to the site because the project site has and continues to experience substantial noise from human activity and most uses will be confined to building interiors. No mitigation is warranted with respect to the potential for increased noise levels to adversely affect wildlife.

Human Activity.

Increased human activity on the project site may adversely affect wildlife usage in the adjoining riparian habitats. However, as noted above, the surrounding area includes established trails, which are regularly accessed for hiking and walking domesticated pets, and human activity is on-going within the Henderson Open Space area. The increase in human activity anticipated as a result of the proposed project would consist primarily of people walking from parking lots to the buildings. Given current use patterns, this level of human activity is not anticipated to substantially affect the wildlife values of the adjoining riparian habitat.

Noxious Weeds

During construction and other ground disturbance activities, there is the potential for noxious weeds to be introduced to the project site. Such weeds can crowd out existing native vegetation and reduce wildlife habitat values. Implementation of Mitigation Measure 9 will minimize the potential for introduction and spread of noxious weeds that could cause off-site habitat degradation.

Wildlife Predation/Harassment

Development projects may increase the potential for harassment and predation of wildlife by introducing domestic pets or by attracting wild species that may prey on other wildlife. Cats can substantially affect bird populations, while dogs can harass a number of wildlife species, including small to large mammals. Given the commercial use of the proposed project, the potential for an increase in free-roaming cats and dogs is minimal. If project development were to attract predators adapted to urban areas (e.g., raccoons, skunks, jays, and crows), these predators could harass or kill other wildlife, and deter use of otherwise suitable habitats by wildlife. The proposed project will include installation/use of trash receptacles in relation to the proposed facility, which could attract predators to the site. However, in accordance with City requirements, trash receptacles will be fenced, covered, and maintained. Compliance with City requirements will minimize the potential for predators to frequent the site as a direct result of the development.

WILDLIFE MOVEMENT

Stream corridors and riparian zones often serve as primary movement and migration routes for wildlife, although any areas providing sufficient cover may provide for local wildlife movement. The presence of urban development on and adjacent to the site has compromised its ability to support wildlife movement. Although the project site is on the fringe of the riparian zone, it contains minimal riparian habitat, and ground cover is minimal throughout the project site. For these reasons, the project site does not have a high potential to support wildlife movement, and potential effects on wildlife movement due to project development are less than significant.

NESTING BIRDS

Although no active bird nests were observed during the wildlife survey, several inactive bird nests were observed in oak trees and remnants of cliff swallow nests were observed on the Cypress Avenue bridge. The presence of woody vegetation is sparse relative to lands to the west (Henderson Open Space). The adjacent open space area

supports a dense tree canopy and shrub understory, which provides high habitat values for birds. Comparatively, the project site supports a few pockets of mature trees, and no shrub understory. The limited number of on-site trees, as well as man-made structures that occur on the site, have a high potential to support nesting migratory birds in future nesting seasons. The federal Migratory Bird Treaty Act requires that nesting migratory birds not be adversely affected by human activities.

Potential Effects on Nesting Migratory Birds

Nesting migratory birds, if present during the construction period, could be directly or indirectly affected by site development. Direct effects could include mortality resulting from removal of vegetation or structures containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults.

Most birds expected to occur on the site nest between February 1 and August 31, although bald eagles may begin nesting as early as January 1. Removal of potential nesting habitat or limiting construction activities to other times of the year (before January 1 or after August 31) is unlikely to affect nesting birds. If work occurs during the nesting season, a nesting survey should be conducted in advance of vegetation removal or initiation of construction. If active nests are present, a buffer zone should be established around the nest to ensure that nesting birds are not directly or indirectly affected. The width of the buffer zone is dependent on the bird species present and their sensitivity to human activity. For example, for bald eagles, the US Fish and Wildlife Service (2007) recommends a 660-foot buffer zone around active nests if the construction activity is visible from the nest, and a 330-foot buffer zone if the construction activity is not visible from the nest and similar types of human activities occur within one mile of the nest. For smaller birds that are habituated to human activity, such as cliff swallows nesting on the Cypress Avenue bridge, a buffer zone of 100 to 200 feet may be sufficient to prevent indirect take. Implementation of Mitigation Measure 6 would preclude disturbance to nesting migratory birds.

WINDOW COLLISIONS

Studies have shown that buildings are a biologically significant risk to certain bird species. In daytime, birds crash into windows because they see reflections of clouds or vegetation, or see through the glass to potted plants or vegetation on the other side. At night, nocturnal migrant birds may fly into lighted windows. Annual bird fatalities in North America from window collisions may be as high as 1 billion birds per year. Given the site's proximity to high value riparian habitat, measures should be taken to minimize the potential for bird strikes. Through implementation of various bird-safe building treatments (e.g., glazing selections, building and fenestration strategies, and/or lighting methods), such as those discussed in the San Francisco Planning Department's Standards for Bird-Safe Buildings, the potential for bird strikes can be greatly minimized. Implementation of Mitigation Measure 10 would minimize the potential for bird strikes.

4. CONCLUSIONS AND RECOMENDATIONS

In summary, we find that the site, which has been highly disturbed by past development, includes one sensitive habitat type: riparian woodland associated with the nearby Sacramento River. The habitats on the site may support several special-status animal species, including pallid bat, spotted bat, Townsend's big-eared bat, western red bat, and bald eagle. The Sacramento River, located just west of the site, is known to support Chinook salmon (fall-run, late-fall-run, winter-run, and spring-run) and Central Valley steelhead; the river reach is designated as critical habitat for Chinook salmon (winter-run and spring-run) and Central Valley steelhead. In addition, migratory birds could nest in vegetation and/or structures on the site in future nesting seasons. No wetlands or special-status plant species were observed during the evaluation, nor are any expected to be present or affected by the proposed work.

As shown on Figure 4, four stands of riparian woodland totaling approximately 0.4 acres of canopy coverage were mapped on the site. The northern three stands contain mature riparian habitat; the southern stand is comprised of younger, smaller individuals and offers lower habitat values.

Although not as important as riparian woodland protection, preservation of mature trees in non-riparian areas is also recommended to maintain the biological values of the site. Loss of the annual grassland and other aspects of urban habitats on the site is of minor concern as the biological values of these habitats would be offset (in-kind or out-of-kind) by landscaping associated with the proposed project.

Implementation of other site development practices would ensure that other biological resources are not adversely affected. These practices include avoidance of nesting birds, humane eviction of bats, and implementation of spill prevention and erosion control measures. Implementation of the following mitigation measures would avoid or reduce biological impacts to levels below that of significance.

Mitigation Measures

1. Minimize the Loss of Riparian Habitat. Direct impacts to riparian habitat and work under the riparian canopy shall be minimized to the extent feasible. Measures to be taken to minimize the loss of riparian habitat as well as indirect effects on riparian habitat include the following:
 - Erect construction fencing along the outer edges of the construction zone as shown in Figure 6 to prevent accidental entry into riparian habitat and/or under riparian canopy. The fencing shall be regularly inspected and maintained throughout the duration of construction, and shall be removed upon completion of construction.
 - Where work must occur under the canopy of riparian vegetation planned for retention, the lower branches of the trees shall be pruned (not broken) as needed to allow access under the canopy.
 - Stockpile equipment and materials outside of riparian canopy, in designated staging areas.
2. Offset the Unavoidable Loss of Riparian Habitat. The proposed removal of riparian habitat shall be mitigated through one of two options:
 - Conduct off-site planting of replacement riparian habitat at a minimum 3:1 ratio. Planting should occur as close to the project site as possible and be in close proximity to the Sacramento River or to a large perennial stream. A vegetation planting and management plan shall be prepared that identifies the planting area size and location, mitigation site protections (e.g., conservation easement or deed restrictions), planting objectives in terms of acreage or number of plants by species, planting and maintenance methods, success criteria, duration of monitoring, corrective actions to be taken if success criteria are not met, and reporting requirements. The plan shall be reviewed and approved by the City of Redding and California Department of Fish and Wildlife, and the City shall be responsible for ensuring that the planting plan is fully implemented; or
 - Purchase riparian habitat credits at the Stillwater Plains Mitigation Bank at a 3:1 ratio.



3. *Avoid the "Take" of Bats Roosting in the On-Site Building.* To prevent direct mortality of bats roosting beneath the roof flashing of the small room connecting the two on-site buildings, the following actions shall be taken prior to building demolition:
 - a. A qualified bat biologist (one possessing a Memorandum of Understanding with CDFW for work with bats) shall either conduct, or supervise, the humane eviction of bats from the on-site structures. Work may consist of installation of appropriate blockage materials and one-way exits at the roof flashing and wood fascia or partial dismantling of the structure in a controlled fashion to eliminate bat roosting habitat.
 - b. Humane bat eviction shall only be conducted within seasonal periods of bat activity during which specific temperature and precipitation criteria are met. Eviction may be conducted between about March 15 (or after evening temperatures rise above 45°F) and April 30, or between August 15 and about October 1 (or before evening temperatures fall below 45°F); no eviction work shall be conducted if more than 1/2" of rainfall has occurred within the preceding 24 hours.

4. *Avoid the "Take" of Colonial Bats Potentially Roosting in the On-Site Trees.* Trees B-1 and B-2, as shown on Figure 5, contain potential roost features for colonial bat species. As detailed below, removal of these trees shall be conducted using a two-step tree removal process during specified seasonal periods. All work shall be conducted or supervised by a qualified bat biologist.

Removal of bat habitat trees shall be conducted over two consecutive days. On the first day, non-habitat features of the trees (e.g., branches without cavities, crevices, or exfoliating bark) shall be removed with chainsaws and be chipped on-site to create high levels of noise and vibration. On the following day, the trees shall be removed from the site.

Two-step removal shall only be conducted within seasonal periods of bat activity during which specific temperature and precipitation criteria are met. Tree removal may be conducted between about March 15 (or after evening temperatures rise above 45°F) and April 30, or between August 15 and about October 1 (or before evening temperatures fall below 45°F); no eviction work shall be conducted if more than 1/2" of rainfall has occurred within the proceeding 24 hours.

5. *Avoid the "Take" of Solitary Bats Potentially Roosting in the On-Site Tree Canopy.* Removal of trees with a diameter at breast height (dbh) of 10 inches or greater shall only be conducted within seasonal periods of bat activity during which specific temperature and precipitation criteria are met. Removal of such trees may be conducted between about March 15 (or after evening temperatures rise above 45°F) and April 30, or between August 15 and about October 1 (or

before evening temperatures fall below 45°F); no eviction work shall be conducted if more than 1/2" of rainfall has occurred within the preceding 24 hours.

One to two days prior to removal of trees with a dbh of 10 inches or greater, smaller trees and shrubs shall be removed using chainsaws to create noise and vibration disturbance. Additionally, the cuttings shall be chipped on-site to further increase noise and vibration levels. Subsequently, trees larger than 10" dbh shall be removed, beginning with smaller trees first.

6. *Avoid Disturbing Nesting Bald Eagles and Migratory Birds.* If possible, vegetation removal and initiation of intensive site construction activities should occur before January 1 or after August 31 to avoid impacts on nesting bald eagles and migratory birds. If vegetation removal or initiation/re-initiation of intensive site construction occurs during the nesting season, a nesting survey shall be conducted by a qualified biologist (one deemed acceptable by CDFW staff) to identify active nests in and adjacent to the work area. The survey shall be conducted no more than one week prior to the beginning of the on-site activity. If nesting birds are found, the nest shall not be disturbed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no vegetation removal or construction activities shall occur within 500 feet of an active nest (or no closer than 660 feet from an active bald eagle nest), unless a smaller buffer distance is authorized by the qualified biologist.
7. *Avoid/Minimize Effects on Western Pond Turtles.* Because turtles may move into the project area for nesting or overwintering, a pre-construction survey for the species shall be performed to confirm presence/absence prior to the start of vegetation removal and project construction. The survey shall be conducted by a qualified biologist (one deemed acceptable by CDFW staff) and shall consist of at least one survey of the project site conducted a maximum of one week prior to the start of vegetation removal. If earth-disturbing construction activities are not initiated immediately following vegetation removal, then a second survey for western pond turtles shall be conducted a maximum of one week prior to the start of earth-disturbing construction activities. If a western pond turtle is found, the biologist shall move it to a safe location within similar habitat. If a western pond turtle nest is found, the biologist shall flag the site and determine if project activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the active construction zone by a qualified biologist.
8. *Minimize the Effects of Outdoor Lighting.* Adverse effects of outdoor lighting on wildlife shall be avoided/minimized by using downcast, cut-off type fixtures that are shielded and direct lighting only toward objects requiring illumination. Lights shall be installed at the lowest allowable height and wattage, and shall be designed to avoid incidental light spill into the adjoining natural habitats.

9. *Avoid/Minimize the Potential for Introduction and Spread of Noxious Weeds.*

The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

- Using only certified weed-free erosion control materials, mulch, and seed,
- Precluding the use of rice straw in riparian areas,
- Limiting any import or export of fill to material known to be weed free, and
- Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the County. If the equipment has most recently been used within the County, cleaning is not required.

10. *Minimize the Potential for Bird Strikes.* The proposed project shall be designed with features that will serve to minimize bird strikes, such as those described in the San Francisco Planning Department's Standards for Bird Safe Buildings (e.g., bird friendly glazing selections, building and fenestration strategies, and/or lighting methods). The City of Redding shall ensure compliance with this measure.

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Appendix A

Site Photographs



Remnants of previous use in the study area (6/24/16)



Graded surface near the intersection of Hartnell Avenue and Cypress Avenue (6/24/16)



Riparian woodland along the Sacramento River (6/24/16)



Remnants of past site development (6/27/16)



Portion of the study area along Henderson Road enclosed within a chain-link fence (6/24/16)



Looking north along Henderson Road (6/24/16)



Looking northwest from Henderson Road (6/24/16)



Looking west from the intersection of Henderson Road and Hartnell Avenue (6/24/16)

Appendix B

United States Fish and Wildlife Service Species List for the Site

IPaC Information for Planning and Consultation U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

North State Pavilion

LOCATION

Shasta County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📅 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Slender Orcutt Grass <i>Orcuttia tenuis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS](#)

[Birds of Conservation Concern](#) (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain time-frame). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

NAME

BREEDING SEASON

Bald Eagle *Haliaeetus leucocephalus*

Breeds Mar 20 to Sep 15

This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Black Swift *Cypseloides niger*

Breeds Jun 15 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8878>

Burrowing Owl *Athene cunicularia*

Breeds Mar 15 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9737>

California Thrasher *Toxostoma redivivum*

Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe *Aechmophorus clarkii*

Breeds Jan 1 to Dec 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Costa's Hummingbird *Calypte costae*

Breeds Jan 15 to Jun 10

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Golden Eagle *Aquila chrysaetos*

Breeds Apr 1 to Aug 31

This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Lewis's Woodpecker *Melanerpes lewis*

Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9408>

Long-billed Curlew *Numenius americanus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5511>

Marbled Godwit *Limosa fedoa*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9481>

Nuttall's Woodpecker *Picoides nuttallii*

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9410>

Oak Titmouse *Baeolophus inornatus*

Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9656>

Rufous Hummingbird *Selasphorus rufus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Short-billed Dowitcher *Limnodromus griseus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9480>

Tricolored Blackbird *Agelaius tricolor*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3910>

Whimbrel *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

White Headed Woodpecker *Picoides albolarvatus*

Breeds May 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9411>

Willet *Tringa semipalmata*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit *Chamaea fasciata*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie *Pica nuttalli*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9726>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

- week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (🟡)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (||)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

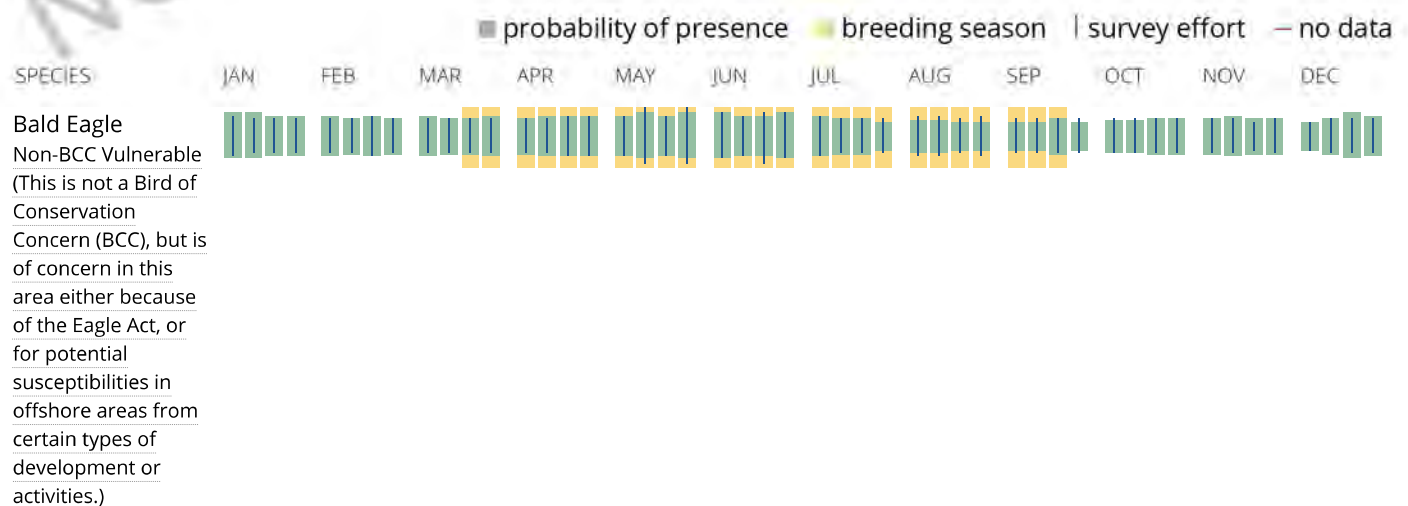
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



Black Swift
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



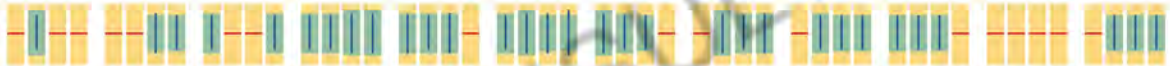
Burrowing Owl
BCC - BCR (This is a
Bird of Conservation
Concern (BCC) only
in particular Bird
Conservation
Regions (BCRs) in the
continental USA)



California
Thrasher
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



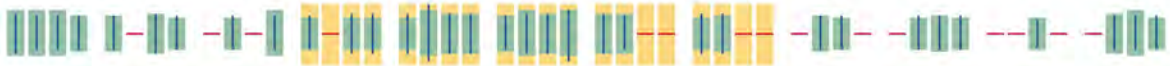
Clark's Grebe
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)

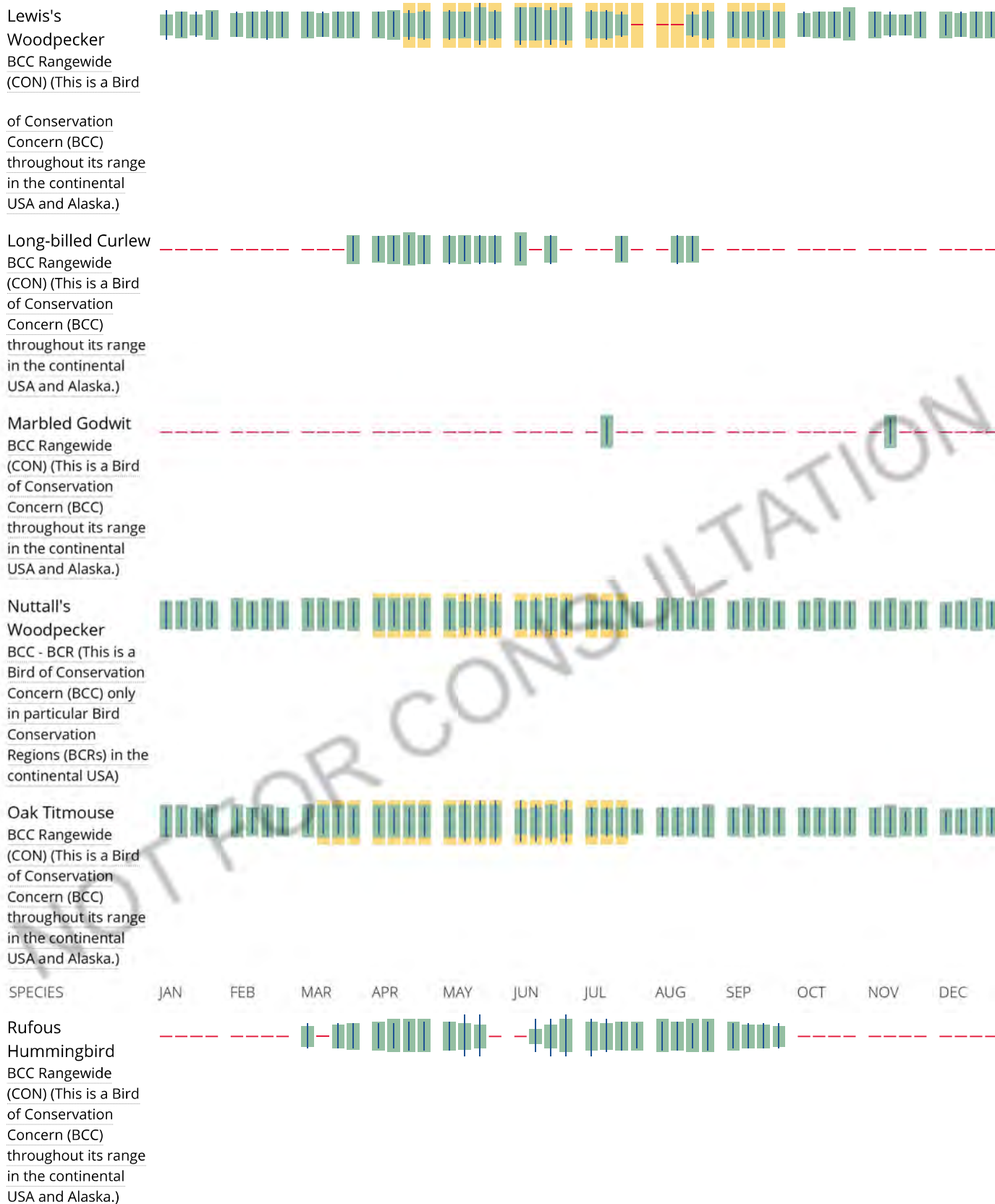


Costa's
Hummingbird
BCC - BCR (This is a
Bird of Conservation
Concern (BCC) only
in particular Bird
Conservation
Regions (BCRs) in the
continental USA)



Golden Eagle
Non-BCC Vulnerable
(This is not a Bird of
Conservation
Concern (BCC), but is
of concern in this
area either because
of the Eagle Act, or
for potential
susceptibilities in
offshore areas from
certain types of
development or
activities.)





Short-billed
Dowitcher
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



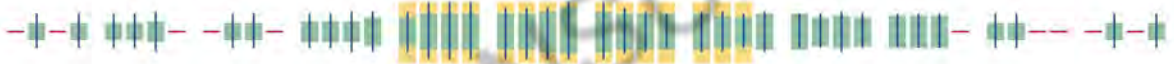
Tricolored
Blackbird
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



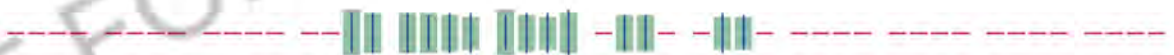
Whimbrel
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



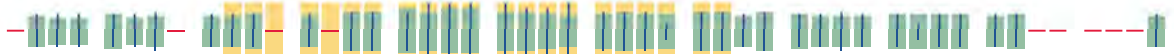
White Headed
Woodpecker
BCC - BCR (This is a
Bird of Conservation
Concern (BCC) only
in particular Bird
Conservation
Regions (BCRs) in the
continental USA)



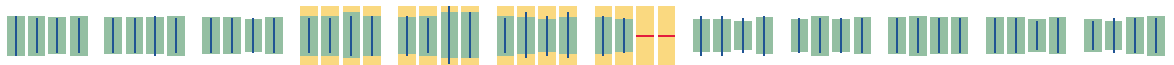
Willet
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



Wrentit
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



Yellow-billed
Magpie
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

[Avoidance and minimization measures](#) should be implemented to reduce impacts to birds on your list, and all other birds that may occur in your project area. Nationwide Standard Conservation Measures can be applied for any project, regardless of project type or location.

If measures exist that are specific to your activity or to any of the species on your list that are confirmed to exist at your project area, these should also be considered for implementation in addition to the Nationwide Standard Conservation Measures. Implementation of avoidance and minimization measures is particularly important for BCC birds of rangewide concern.

If your project has the potential to disturb or kill eagles, you will need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFOA](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix C

Rarefind (CNDDDB) Report Summary

Rarefind (CNDDDB) Report Summary (November 2017 Data)													
North State Pavilion													
Listed Element	Quadrangle ¹												Status ²
	WH	SH	PR	EN	BV	PA	CO	BF	IG	ON	RE	OL	
Animals		•											
Antioch Dunes anthicid beetle													
Bald eagle			•	•			•		•				FD, SE, SFP,
Bank swallow				•			•						ST
California linderiella				•		•	•	•					None
Chinook salmon - Central Valley spring-run ESU				•							•	•	FT, ST
Chinook salmon - Sacramento River winter-run ESU				•			•	•			•		SE, FE
Fisher - West Coast DPS									•				FP, SCT, SSSC
Foothill yellow-legged frog		•							•				SSSC
Great egret											•		None
Hoary bat							•						None
Kneecap lanx											•		None
Long-eared myotis									•				None
North American porcupine													None
Oregon shoulderband											•		None
Osprey							•						None
Pallid bat												•	SSSC
Sacramento anthicid beetle		•											None
Shasta chaparral		•									•		None
Shasta salamander		•	•										ST
Silver-haired bat				•			•		•				None
Spotted bat						•							SSSC
Steelhead - Central Valley DPS				•	•	•	•	•	•	•	•	•	FT
Townsend's big-eared bat									•		•		SCT, SSSC
Tricolored blackbird				•			•				•	•	SSSC
Valley elderberry longhorn beetle				•	•	•	•						FT
Vernal pool fairy shrimp				•		•	•	•					FT
Vernal pool tadpole shrimp				•		•	•	•					FE
Western pearlshell				•							•		None
Western pond turtle		•	•	•					•		•	•	SSSC

Rarefind (CNDDb) Report Summary (November 2017 Data)													
North State Pavilion													
Listed Element	Quadrangle ¹												Status ²
	WH	SH	PR	EN	BV	PA	CO	BF	IG	ON	RE	OL	
Western red bat							•		•				SSSC
Western spadefoot													SSSC
Yuma myotis							•		•				None
Plants													
Ahart's paronychia						•							1B.1
Boggs Lake hedge-hyssop						•							SE, 1B.2
Canyon Creek stonecrop	•												1B.3
Dubious pea											•		3
Henderson's bent grass			•	•		•		•					3.2
Legenere				•			•	•					1B.1
Nuttall's ribbon-leaved pondweed									•				2B.2
Sanford's arrowhead			•										1B.2
Red Bluff dwarf rush			•	•			•	•				•	1B.1
Silky cryptantha			•	•		•	•	•					1B.2
Slender Orcutt grass				•		•	•	•					FT, SE, 1B.1
Slender-silver moss									•				4.2
Sulphur Creek brodiaea											•		1B.1
Woolly meadowfoam						•							4.2
Natural Communities													
Great Valley Cottonwood Riparian Forest				•			•	•			•		Imperiled
Great Valley Valley Oak Riparian Forest				•			•	•					Critically Imperiled
Great Valley Willow Scrub				•			•						Vulnerable

Highlighting denotes the quadrangle in which the project site is located. Special-status species broadly mapped by the CNDDDB to include a portion of the study area include steelhead - Central Valley DPS; the non-status western pearlshell has been broadly mapped by the CNDDDB to include a portion of the study area. One special-status natural community, Great Valley valley oak riparian forest, has been mapped in the study area.

¹Quadrangle Code

RE = Redding
OL = Olinda
WH = Whiskeytown
SH = Shasta Dam

BV = Bella Vista
IG = Igo
EN = Enterprise
PA = Palo Cedro

CO = Cottonwood
BF = Balls Ferry
PR = Project City
ON = Ono

²Status Codes

Federal

FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FC = Federal Candidate Species
FPT = Federal Proposed – Threatened
FD = Federally Delisted
FSC = Federal Species of Concern

State

SFP = State Fully Protected
SR = State Rare
SE = State Listed – Endangered
ST = State Listed – Threatened
SCT = State Candidate – Threatened
SD = State Delisted
SSSC = State Species of Special Concern

Rare Plant Rank

List 1A = Presumed extirpated in California and either rare or extinct elsewhere
List 1B = Rare or Endangered in California and elsewhere
List 2A = Presumed extirpated in California, but more common elsewhere
List 2B = Rare or Endangered in California, but more common elsewhere
List 3 = Plants for which we need more information - Review list (generally not considered special-status, unless unusual circumstances warrant)
List 4 = Plants of limited distribution - Watch list (generally not considered special-status, unless unusual circumstances warrant)

Threat Ranks

0.1 = Seriously Threatened in California
0.2 = Fairly Threatened in California
0.3 = Not Very Threatened in California

Natural Community Rank

Critically Imperiled	Critically imperiled in the state because of extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.
Imperiled	Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation.
Vulnerable	Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
Secure	Common, widespread, and abundant in the state.

Appendix D

Evaluation of the Potential for Special-Status Species to Occur on the Site

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Wildlife		
Bald eagle <i>Haliaeetus leucocephalus</i>	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	Although no bald eagles or eagle nests were observed during the wildlife survey, large trees in the on-site riparian woodland provide potentially suitable nest sites for bald eagles. Bald eagles thus have a moderate potential to nest on the site in future nesting seasons.
Bank swallow <i>Riparia riparia</i>	Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	No vertical cliffs with fine-textured or sandy soils are present on the site. The bank swallow would thus not nest on the site.
California red-legged frog <i>Rana draytonii</i>	Suitable aquatic habitat for the California red-legged frog (CRLF) consists of permanent water bodies of virtually still or slow-moving fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. The CRLF is not characteristically found in deep lacustrine habitats (e.g., deep lakes and reservoirs). Dense, shrubby riparian vegetation, e.g., willow (<i>Salix</i>) and bulrush (<i>Scirpus</i>) species, and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No suitable habitat for California red-legged frogs occurs on or adjacent to the site. The California red-legged frog was not observed during the wildlife survey and is not expected to be present. Although the California red-legged frog historically occurred in Shasta County, it is now considered to be extirpated in the County.
Central Valley fall-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	The Central Valley fall-run Chinook salmon spawn in the lower reaches of most rivers and streams in the Central Valley. Adults begin their spawning migration between July and December. Spawning occurs between October and December. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing water.	No suitable habitat for Central Valley fall-run Chinook salmon occurs on the site. The fall-run would thus not be present. However, fall-run are presumed to be present in the Sacramento River, which is located just west of the site.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Central Valley late-fall-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	The Central Valley late-fall-run spawn in the lower reaches of most rivers and streams in the Central Valley. Adults begin their upstream spawning migration between mid-October and mid-April. Spawning occurs between January and April. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing water.	No suitable habitat for Central Valley late-fall-run Chinook salmon occurs on the site. The late-fall-run would thus not be present. However, late-fall-run are presumed to be present in the Sacramento River, which is located just west of the site.
Central Valley spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon enter the Sacramento-San Joaquin Delta in early January, and enter natal streams between mid-March and mid-October. Upon entering fresh water, spring-run are sexually immature and must hold in cold water habitats through summer to mature. Typically, spring-run utilize mid- to high-elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between August and mid-October.	No suitable habitat for Central Valley spring-run Chinook salmon occurs on the site. The spring-run would thus not be present. However, spring-run are presumed to be present in the Sacramento River, which is located just west of the site.
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water.	No vernal pools or other potentially suitable habitat for vernal pool fairy shrimp occur on or within 250 feet of the site. Conservancy fairy shrimp would thus not be present.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Delta smelt <i>Hypomesus transpacificus</i>	Delta smelt primarily inhabit the brackish waters of Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edgewaters.	The site is well outside of the known range of the Delta smelt. The Delta smelt would thus not be present.
Fisher – West Coast DPS <i>Martes (Pekania) pennanti</i>	Fishers inhabit mixed conifer forests dominated by Douglas-fir, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities. Den sites are most often found in areas with no human disturbance.	Mature, dense forest stands with snags and greater than 50 percent canopy closure do not occur on the site. Further, the site is subject to moderate levels of human disturbance. No fishers or fisher dens were observed on the site during the wildlife survey, nor is the species expected to den on the site.
Foothill yellow-legged frog <i>Rana boylei</i>	Foothill yellow-legged frogs are typically found in shallow, partly-shaded, perennial streams in areas with riffles and rocky substrates. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	No suitable habitat for foothill yellow-legged frogs occurs on or adjacent to the site. The foothill yellow-legged frog was not observed during the wildlife survey and is not expected to be present.
Northern spotted owl <i>Strix occidentalis caurina</i>	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snags. The nesting season is March through June.	Dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests do not occur on or adjacent to the site. No northern spotted owls or spotted owl nests were observed during the wildlife survey, nor is the species expected to nest on or adjacent to the site.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Pallid bat <i>Antrozous pallidus</i>	Pallid bats inhabit grasslands, shrublands, woodlands, and forests, but are most common in open, dry habitats. Day roosts include caves, rock crevices, mines, and occasionally trees and buildings. Buildings are often used for night roosting. The breeding period is October through February, and pups are born between April and July.	Trees and buildings on the site provide suitable roosting habitat for the pallid bat. The pallid bat thus has a moderate potential to be present.
Ringtail <i>Bassariscus astutus</i>	The ringtail is widespread throughout the Sierra Nevada, Klamath Mountains, Coast Range, and Central Valley. Ringtails have been reported from sea level to 8,800 feet, usually not far from permanent water. Ringtails occur in a variety of habitats within their range, but prefer chaparral, rocky hillsides, and riparian areas. Ringtails are nocturnal and active throughout the year. Females den in rock crevices, tree hollows, logs, snags, abandoned burrows, and woodrat nests.	Potentially suitable habitat for ringtail occurs on the site; however, no records of ringtail sightings in the Redding area were found during project research. The site supports a minor amount of riparian habitat/canopy (±0.4 acres) that could potentially provide cover for ringtails. Given the amount of habitat fragmentation on the site and lack of denning sites, the ringtail is unlikely to be present on the site.
Sacramento River winter-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	Sacramento River winter-run Chinook salmon spawn almost exclusively in the Sacramento River, and not in tributary streams. Spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs where there is an abundance of loose gravel. Juveniles may rear in tributaries of the Sacramento River.	No suitable habitat for Sacramento River winter-run Chinook salmon occurs on the site. The winter-run would thus not be present. However, winter-run are presumed to be present in the Sacramento River, which is located just west of the site.
Shasta salamander <i>Hydromantes shastae</i>	The Shasta salamander is primarily restricted to limestone outcrops near Lake Shasta. Habitat consists of moist limestone fissures and caves, limestone talus, and under woody debris on the surface near limestone outcrops. Shasta salamanders may be found in all successional stages of valley foothill hardwood-conifer, ponderosa pine, and mixed conifer habitats.	No limestone outcrops occur on or adjacent to the site. The Shasta salamander would thus not be present.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Spotted bat <i>Euderma maculatum</i>	Spotted bats inhabit grasslands, mixed coniferous forests, and deserts. Spotted bats typically roost in cliff crevices, but may also roost in caves, and manmade structures. Roosts usually occur near suitable foraging areas (i.e., open water, meadows, riparian habitat, and forest openings).	Buildings on the site may provide marginally suitable roosting habitat for spotted bats. Spotted bats thus have a low potential to be present.
Steelhead - Central Valley DPS <i>Oncorhynchus mykiss</i>	Central Valley steelhead inhabit cold-water tributaries of the Sacramento and San Joaquin rivers. Adults begin their upstream spawning migration between August and March. Spawning occurs between December and April. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing, shallow water.	No suitable habitat for Central Valley steelhead occurs on the site. Central Valley steelhead would thus not be present. However, Central Valley steelhead are presumed to be present in the Sacramento River, which is located just west of the site.
Townsend's big-eared bat <i>Corynorhinus townsendii pallescens</i>	Townsend's big-eared bat is found throughout California except in subalpine and alpine habitats, and may be found at any season throughout its range. The species is most abundant in mesic habitats. The bat requires caves, mines, tunnels, buildings, or other human-made structures for roosting. This bat is especially sensitive to disturbance of roosting sites, and a single disturbance event may result in abandonment of the roost site.	Buildings on the site provide marginal roosting habitat for Townsend's big-eared bats. However, given high level of human activity around these structures, Townsend's big-eared bats have a low potential to be present.
Tricolored blackbird <i>Agelaius tricolor</i>	Tricolored blackbirds are colonial nesters and generally nest near open water. Nesting areas must be large enough to support a minimum colony of about 50 pairs. Tricolored blackbirds generally construct nests in dense cattails or tules, although they can also nest in thickets of willow, blackberry, wild rose and tall herbs.	Scattered individuals of willows and blackberries are present in the on-site riparian woodland. However, these shrubs do not form dense thickets. No tricolored blackbirds or evidence of past nesting by tricolored blackbirds were observed on or adjacent to the site during the wildlife survey. The tricolored blackbird is thus not expected to nest on the site.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	The valley elderberry longhorn beetle is found only in association with elderberry shrubs (<i>Sambucus</i> spp.). The species' elevational range extends from sea level to 3,000 feet. The species is known to occur in the Central Valley and foothills.	No elderberries occur on or within 50 meters of the site. The valley elderberry longhorn beetle would thus not be present.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No vernal pools or other potentially suitable habitat for vernal pool tadpole shrimp occur on or within 250 feet of the site. Vernal pool fairy shrimp would thus not be present.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills.	No vernal pools or other potentially suitable habitat for vernal pool fairy shrimp occur on or within 250 feet of the site. Vernal pool tadpole shrimp would thus not be present.
Western pond turtle <i>Emys marmorata</i>	The western pond turtle associates with permanent or nearly permanent water in a variety of habitats. This turtle is typically found in quiet water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. Nesting and courtship occur during spring. Nests are generally constructed within 500 feet of a waterbody, but some nests have been found up to 1,200 feet away. Pond turtles leave aquatic sites in the fall and overwinter in uplands nearby. Pond turtles return to aquatic sites in spring.	No open water habitat is present on the project site; however, potentially suitable open water habitat is present off-site. Although no western pond turtles were observed during the wildlife survey, it is possible that they could use portions of the project site for nesting.
Western red bat <i>Lasiurus blossevellii</i>	In California, western red bats occur primarily below 200 meters in elevation, although individuals have been detected up to nearly 2500 meters. The bats both forage and roost in riparian habitats and are strongly associated with riparian habitats that are over 50 meters wide. Breeding females are concentrated in the Central Valley. Roosting is expected to occur primarily in the largest riparian trees. Roosting has been observed in orchards, such as walnut orchards flanking the Sacramento River, perhaps due to the loss of gallery riparian forest habitat.	Riparian woodland on the site provides suitable roosting habitat for the western red bat. The western red bat thus has a high potential to be present.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Western spadefoot <i>Spea hammondi</i>	Western spadefoots breed from January through May in shallow, temporary pools that persist for at least three weeks. Breeding pools are generally absent of bullfrogs, fish, and crayfish, which are known to prey on tadpoles. After breeding, adults seek shelter underground either by excavating a subterranean burrow or retreating into a small mammal burrow nearby. Tadpoles transform within three weeks. Following transformation, juveniles leave breeding pools and seek shelter underground. Western spadefoots remain underground until breeding pools form the following spring.	The nearest reported location for western spadefoot is approximately 7 miles to the southeast. No shallow temporary pools providing breeding habitat for western spadefoot are present on or adjacent to the project site. Therefore, the western spadefoot would not be present on the site.
Yellow-breasted chat <i>Icteria virens</i>	The yellow-breasted chat frequents dense, brushy thickets and tangles near water, and thick understory in riparian woodland.	No suitable habitat for the yellow-breasted chat occurs on the study site; however, potentially suitable habitat is present in adjoining off-site riparian areas. Yellow-breasted chat is infrequently observed along the Sacramento River in the Redding area. Although the species was not observed during our field study, the species could potentially be present in riparian habitat near the study area.
Yellow warbler <i>Dendroica petechia brewsteri</i>	In migration, the yellow warbler is found in a variety of sparse to dense woodland and forest habitats. During the breeding season, the yellow warbler generally occupies riparian vegetation in close proximity to water, where they may be found in willows, cottonwoods, and numerous other riparian shrubs or trees. The yellow warbler primarily nests in riparian woodlands from sea level to approximately 8,000 feet in elevation; nesting also occasionally occur in shrubs in open coniferous forests.	Potentially suitable habitat nesting habitat for the yellow warbler occurs on and adjacent to the study site. Yellow warblers have been observed in the adjacent Henderson Open Space as well elsewhere along the Sacramento River throughout the Redding area, often during their migration periods. The species could potentially be present in riparian habitat on or near the study area.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Plants		
Ahart's paronychia <i>Paronychia ahartii</i>	Ahart's paronychia is an annual herb that occurs in valley and foothill grassland, vernal pool, and cismontane woodland habitats. This plant is typically found in nearly barren clay in swales and on higher ground around vernal pools from 100 to 1,700 feet in elevation. It also occurs in rocky soils. The flowering period is March through June.	No suitable habitat for Ahart's paronychia is present on the site. Ahart's paronychia was not observed during the botanical survey and is not expected to be present.
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop occurs in marshes, swamps, and vernal pools. The species is reported from sea level to 7,800 feet in elevation. The flowering period is April through August.	No suitable habitat for Boggs Lake hedge-hyssop is present on the site. Boggs Lake hedge-hyssop was not observed during the botanical survey and is not expected to be present.
Canyon Creek stonecrop <i>Sedum paradisum</i>	Canyon Creek stonecrop occurs on rock faces or in crevices of exposed granite in the Klamath Mountains of northwestern California. The species is reported between 1,000 and 6,300 feet in elevation. The flowering period is May and June.	No suitable habitat for Canyon Creek stonecrop is present on the site. Canyon Creek stonecrop was not observed during the botanical survey and is not expected to be present.
Dubious pea <i>Lathyrus sulphureus</i> var. <i>argillaceus</i>	The dubious pea is a perennial herb that occurs in cismontane woodland and montane coniferous forest. The species is reported between 500 and 1,000 feet in elevation. The flowering period is April and May.	No suitable habitat for the dubious pea occurs on the site. The dubious pea was not observed during the botanical survey and is not expected to be present.
Henderson's bent grass <i>Agrostis hendersonii</i>	Henderson's bent grass is an annual herb that occurs along the edges of vernal pools and swales, typically on thin soils overlying a hard pan. Henderson's bent grass is usually found in sparsely vegetated habitats between 200 and 1,000 feet in elevation. The flowering period is April through June.	No suitable habitat for Henderson's bent grass is present on the site. Henderson's bent grass was not observed during the botanical survey and is not expected to be present.
Legenere <i>Legenere limosa</i>	Legenere is an annual herb that occurs in moist or wet soil associated with vernal pools, vernal marshes, lakes, ponds and sloughs up to 3,000 feet in elevation. The flowering period is April through June.	No suitable habitat for legenere is present on the site. Legenere was not observed during the botanical survey and is not expected to be present.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Nuttall's ribbon-leaved pondweed <i>Potamogeton epihydrus</i>	Nuttall's ribbon-leaved pondweed is a perennial rhizomatous herb that occurs in marshes, swamps, and in shallow lakes, ponds, streams, and irrigation ditches. The species is found between 1,200 and 7,200 feet in elevation. The flowering period is July through September.	No suitable habitat for Nuttall's ribbon-leaved pondweed is present on the site. Nuttall's ribbon-leaved pondweed was not observed during the botanical survey and is not expected to be present.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	Sanford's arrowhead occurs in freshwater ponds, marshes, and ditches with perennial water. The species is reported from sea level to 2,200 feet in elevation. The flowering period is May through October.	No suitable habitat for Sanford's arrowhead is present on the site. Sanford's arrowhead was not observed during the botanical survey and is not expected to be present.
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush is an annual herb that typically occurs along the edges of vernal pools and vernal drainages, or on clay-rich terrace soils. The species is found between 100 and 3,400 feet in elevation. The flowering period is March through May.	No suitable habitat for Red Bluff dwarf rush is present on the site. Red Bluff dwarf rush was not observed during the botanical survey and is not expected to be present.
Silky cryptantha <i>Cryptantha crinita</i>	Silky cryptantha is an annual herb that occurs along low-gradient seasonal streams with broad floodplains, usually on the valley floor, where it is found on gravelly or cobbly substrates. The species also occurs in vernal moist uplands. Less frequently, it occurs along perennial streams, including the Sacramento River. The species is found between 200 and 4,000 feet in elevation. The flowering period is April and May.	No suitable gravel or cobble deposits occur on the site. Silky cryptantha was not observed during the botanical survey and is not expected to be present.
Slender Orcutt grass <i>Orcuttia tenuis</i>	Slender Orcutt grass is an annual herb that occurs in vernal pools and similar habitats, occasionally on reservoir edges or stream floodplains, on clay soils with seasonal inundation in valley grassland to coniferous forest or sagebrush scrub. The species is found between 100 and 5,800 feet in elevation. The flowering period is May through September.	No suitable habitat for slender Orcutt grass is present on or within 250 feet of the site. Slender Orcutt grass was not observed during the botanical survey, and is not expected to be present.
Slender-silver moss <i>Anomobryum julaceum</i>	Slender-silver moss generally is found on damp rocks or soil on exposed roadcuts. The species is found between 300 and 3,300 feet in elevation.	No suitable habitat for slender-silver moss is present on the site. Slender-silver moss would thus not be present.

Evaluation of the Potential for Special-Status Species to Occur on the Site

Species	Habitat Requirements	Potential to Occur on the Site
Sulphur Creek brodiaea <i>Brodiaea matsonii</i>	Sulphur Creek brodiaea, a perennial bulbiferous herb, is reported only from two locations along Sulphur Creek. This plant occurs on metamorphic amphibolite schists in close proximity to streams, meadows, and/or seeps within cismontane woodland. The species is reported between 600 and 700 feet in elevation. The flowering period is May and June.	No suitable habitat for Sulphur Creek brodiaea occurs on the site. Sulphur Creek brodiaea was not observed during the botanical survey and is not expected to be present.
Woolly meadowfoam <i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	Woolly meadowfoam is an annual herb that generally occurs in vernal pools, ditches, seasonal drainages, and ponds in valley foothill and grasslands, cismontane woodland, and chaparral. The species is reported between 200 and 3,600 feet in elevation. The flowering period is March through June.	No suitable habitat for woolly meadowfoam is present on the site. Woolly meadowfoam was not observed during the botanical survey and is not expected to be present.

Appendix E

Checklist of Vascular Plant Species Observed

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

North State Pavilion

June 10, 2016

Amaranthaceae

Amaranthus albus

Amaranth Family

Tumbleweed

Anacardiaceae

Pistacia chinensis

Sumac Family

Chinese pistach

Apiaceae

Torilis arvensis

Carrot Family

Field hedge-parsley

Apocynaceae

Nerium oleander

Dogbane Family

Oleander

Aristolochiaceae

Aristolochia californica

Birthwort Family

Pipevine

Asteraceae

Anthemis cotula
Baccharis pilularis
Carduus pycnocephalus
Centaurea solstitialis
Cichorium intybus
Cirsium sp.
Erigeron canadensis
Grindelia camporum
Hypochaeris glabra
Lactuca serriola
Sonchus oleraceus
Taraxacum officinale
Tragopogon dubius

Sunflower Family

Mayweed
Coyote-brush
Italian thistle
Yellow star thistle
Chicory
Thistle
Canadian horseweed
Valley gumplant
Smooth cat's ear
Prickly lettuce
Common sow thistle
Dandelion
Goat's beard

Boraginaceae

Heliotropium europaeum

Borage Family

European pulsey

Brassicaceae

Hirschfeldia incana
Raphanus raphanistrum

Mustard Family

Shortpod mustard
Jointed charlock

Caryophyllaceae

Petrorhagia dubia
Silene gallica
Spergularia rubra

Pink Family

Grass pink
Common catchfly
Ruby sand spurry

Chenopodiaceae

Chenopodium sp.

Goosefoot Family

Goosefoot

Convolvulaceae

Convolvulus arvensis

Morning Glory Family

Bindweed

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

North State Pavilion

Cupressaceae

Juniperus sp.

Cypress Family

Juniper

Cyperaceae

Carex barbarae

Cyperus eragrostis

Sedge Family

Barbara sedge

Nutsedge

Equisetaceae

Equisetum laevigatum

Horsetail Family

Smooth scouring rush

Euphorbiaceae

Chamaesyce maculata

Chamaesyce nutans

Croton setigerus

Triadica sebifera

Spurge Family

Spotted spurge

Large spurge

Dove weed

Chinese tallowtree

Fabaceae

Albizia julibrissin

Acmispon americanus

Lupinus nanus

Medicago sp.

Medicago lupulina

Melilotus albus

Robinia pseudoacacia

Trifolium dubium

Trifolium glomeratum

Trifolium hirtum

Vicia villosa subsp. *villosa*

Legume Family

Silk tree

Spanish lotus

Valley sky lupine

Bur-clover

Black medick

White sweetclover

Black locust

Little hop clover

Sessile-headed clover

Rose clover

Winter vetch

Fagaceae

Quercus lobata

Quercus wislizeni

Oak Family

Valley oak

Interior live oak

Gentianaceae

Zeltnera muehlenbergii

Gentian Family

June centaury

Geraniaceae

Erodium botrys

Erodium cicutarium

Geranium Family

Long-beaked filaree

Red-stemmed filaree

Lamiaceae

Lamium purpureum

Marrubium vulgare

Mint Family

Red henbit

Horehound

Malvaceae

Malva parviflora

Mallow Family

Little mallow

Molluginaceae

Mollugo verticillata

Carpet-weed Family

Green carpetweed

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

North State Pavilion

Moraceae

Morus sp.

Papaveraceae

Eschscholzia californica

Phytolaccaceae

Phytolacca americana

Pinaceae

Pinus sabiniana

Plantaginaceae

Plantago coronopus

Plantago lanceolata

Poaceae

Avena barbata

Bromus diandrus

Bromus hordeaceus

Bromus madritensis subsp. *rubens*

Cynodon dactylon

Dactylis glomerata

Digitaria sp.

Elymus caput-medusae

Elymus glaucus

Festuca myuros

Festuca perennis

Hordeum murinum

Panicum sp.

Paspalum dilatatum

Pennisetum sp.

Sorghum halepense

Stipa miliacea var. *miliacea*

Polygonaceae

Polygonum aviculare subsp. *depressum*

Rumex crispus

Rumex pulcher

Portulacaceae

Portulaca oleracea

Rosaceae

Prunus sp.

Rubus armeniacus

Salicaceae

Populus fremontii subsp. *fremontii*

Salix exigua

Salix lasiolepis

Mulberry Family

Mulberry

Poppy Family

California poppy

Pokeweed Family

Pokeweed

Pine Family

Grey pine

Plantain Family

Cut-leaf plantain

English plantain

Grass Family

Slender wild oats

Ripgut grass

Soft chess

Red brome

Bermuda grass

Orchard grass

Crabgrass

Medusa head

Blue wild rye

Foxtail fescue

Annual ryegrass

Foxtail barley

Panic

Dallis grass

Johnson grass

Smilo grass

Buckwheat Family

Common knotweed

Curly dock

Fiddle dock

Purslane Family

Common purslane

Rose Family

Prunus

Himalayan blackberry

Willow Family

Fremont cottonwood

Sandbar willow

Arroyo willow

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

North State Pavilion

Scrophulariaceae

Verbascum blattaria

Verbascum thapsus

Simaroubaceae

Ailanthus altissima

Solanaceae

Solanum americanum

Vitaceae

Vitis californica

Zygophyllaceae

Tribulus terrestris

Snapdragon Family

Moth mullein

Woolly mullein

Quassia Family

Tree of heaven

Nightshade Family

American black nightshade

Grape Family

Wild grape

Caltrop Family

Puncture vine

Appendix F

Checklist of Wildlife Species Observed

**Checklist of Wildlife Species Observed
North State Pavilion
June 24 and November 7, 2016**

Common Name	Scientific Name	Status
Birds		
Acorn woodpecker	<i>Melanerpes formicivorus</i>	None
American crow	<i>Corvus brachyrhynchos</i>	None
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	None
Common raven	<i>Corvus corax</i>	None
Dark-eyed junco	<i>Junco hyemalis</i>	None
Eurasian collared dove	<i>Streptopelia decaocto</i>	None
European starling	<i>Sturnus vulgaris</i>	None
Killdeer	<i>Charadrius vociferus</i>	None
Northern flicker	<i>Colaptes auratus</i>	None
Northern mocking bird	<i>Mimus polyglottos</i>	None
Red-tailed hawk	<i>Buteo jamaicensis</i>	None
Rock dove	<i>Columba livia</i>	None
Turkey vulture	<i>Cathartes aura</i>	None
Western scrub-jay	<i>Aphelocoma californica</i>	None