

Appendix C

**Biological Resources Survey
Report**

Revised

TISDALE BYPASS SEDIMENT REMOVAL 2020

Biological Resources Survey Report

Prepared for
California Department of Water Resources

Revised November 2019



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EXECUTIVE SUMMARY

Environmental Science Associates (ESA) conducted a biological resources survey within the approximately 313.56-acre study area (study area) for the Tisdale Bypass Sediment Removal 2020 (project), located in Sutter County, California. The California Department of Water Resources (DWR) proposes to remove accumulated sediment from the Tisdale Bypass. The study area includes all areas that may be directly impacted by sediment removal activities, including the Tisdale Bypass, a construction equipment staging area, sediment stockpile area, and the access route between the Tisdale Bypass and sediment stockpile area.

The purpose of this report is to assess the suitability of the study area to support biological resources that may be considered under the California Environmental Quality Act and/or protected under State and Federal laws.

In regards to natural communities and wetlands, the study area includes seasonal riverine, annual grassland, and disturbed land cover types. Riparian forest occurs just outside the study area, adjacent to the northern and southern margins of the Tisdale Bypass. Potentially jurisdictional waters of the U.S. within the study area include seasonal riverine, which encompasses much of the Tisdale Bypass itself. Based on these site conditions, it is anticipated that DWR may need to obtain certain regulatory permits for project impacts to seasonal riverine habitat, including a Section 404 Clean Water Act Nationwide Permit, Section 401 Water Quality Certification, and Section 1600 Lake and Streambed Alteration Agreement. Supporting documentation for these permits may include reports associated with satisfying requirements under Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act.

In regards to special-status species and other wildlife, active barn swallow (*Hirundo rustica*) and cliff swallow (*Petrochelidon pyrrhonota*) nests were observed beneath the bridges within the study area. The grasslands and isolated trees within the study area provide suitable nesting and foraging habitat for listed and non-listed migratory birds and other birds of prey, including Swainson's hawk (*Buteo swainsoni*). The riparian forest in the vicinity of the study area provides suitable nesting and foraging habitat for nesting birds. Non-listed migratory birds and other birds of prey, including red-tailed hawk (*Buteo jamaicensis*) and osprey (*Pandion haliaetus*), were observed nesting within this riparian habitat. Special-status terrestrial wildlife species, including western red bat (*Lasiurus blossevillei*), pallid bat (*Antrozous pallidus*), western pond turtle (*Emys marmorata*), and giant garter snake (*Thamnophis gigas*), have the potential to occur within the study area. Special-status anadromous fish species, including Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), Central Valley fall-/late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), Sacramento River

winter-run Chinook salmon (*Oncorhynchus tshawytscha*), and green sturgeon (*Acipenser medirostris*), also have the potential to occur within the study area.

CHAPTER 1

Introduction

1.1 Background and Purpose

This Biological Resources Survey Report (report) was prepared for the approximately 313.56-acre Tisdale Bypass Sediment Removal 2020 (project) located in Sutter County, California. The purpose of this report is to assess the suitability of the project study area (study area) to support sensitive biological resources.

1.2 Project Description

The Tisdale Bypass is a key element of the Sacramento River Flood Control Project (SRFCP), providing a connection between the Sacramento River and the Sutter Bypass. The Tisdale Bypass is made up of Tisdale Weir – a 1,150-foot long concrete structure with a fixed crest elevation – and north and south levees. The north and south levee are earthen structures; each is around 4.4 miles long and varies in height from approximately 16 feet around Tisdale Weir to approximately 21 feet at the transition of Tisdale Bypass to Sutter Bypass. The Tisdale Bypass is divided geographically by Reclamation Road approximately 2.1 miles downstream (i.e., east) from Tisdale Weir. The Tisdale Bypass varies in width from approximately 1,300 feet near the Sacramento River to 890 feet, from levee to levee toe, at its confluence with the Sutter Bypass.

Under flood conditions, Sacramento River flow spills over the Tisdale Weir when the flood stage reaches around 44 feet (NAVD88¹). The Bypass' levees contain these flood waters within the Bypass' channel conveying the flood flows into the Sutter Bypass to the east. From there, flows in the Sutter Bypass re-enter the Sacramento River further south and are further conveyed into the Yolo Bypass. The Tisdale Bypass provides flood protection to the Sutter and Colusa Basins, the towns of Knights Landing and Robbins, the West Side Levee District, Reclamation Districts 108 and 1660, State Highways 45 and 113, and the infrastructure that supports these areas.

The flood capacity of the Tisdale Bypass is currently inadequate and must be restored so that it will function as intended. Sediment deposits in the Tisdale Bypass reduce the flow capacity of the Tisdale Weir and Bypass, and diminish the efficiency of the flood control system. The reduced capacity forces higher-than-designed flows to remain in the Sacramento River, resulting in higher flood stages in the Sacramento River downstream of the Tisdale Bypass. DWR last conducted sediment removal maintenance in the Tisdale Bypass in 2007 when approximately 2 million cubic yards of sediment were removed. Since then, regular flows have continued to deposit new sediment within the Tisdale Bypass and scoured the banks of the Sacramento River downstream

¹ North American Vertical Datum of 1988.

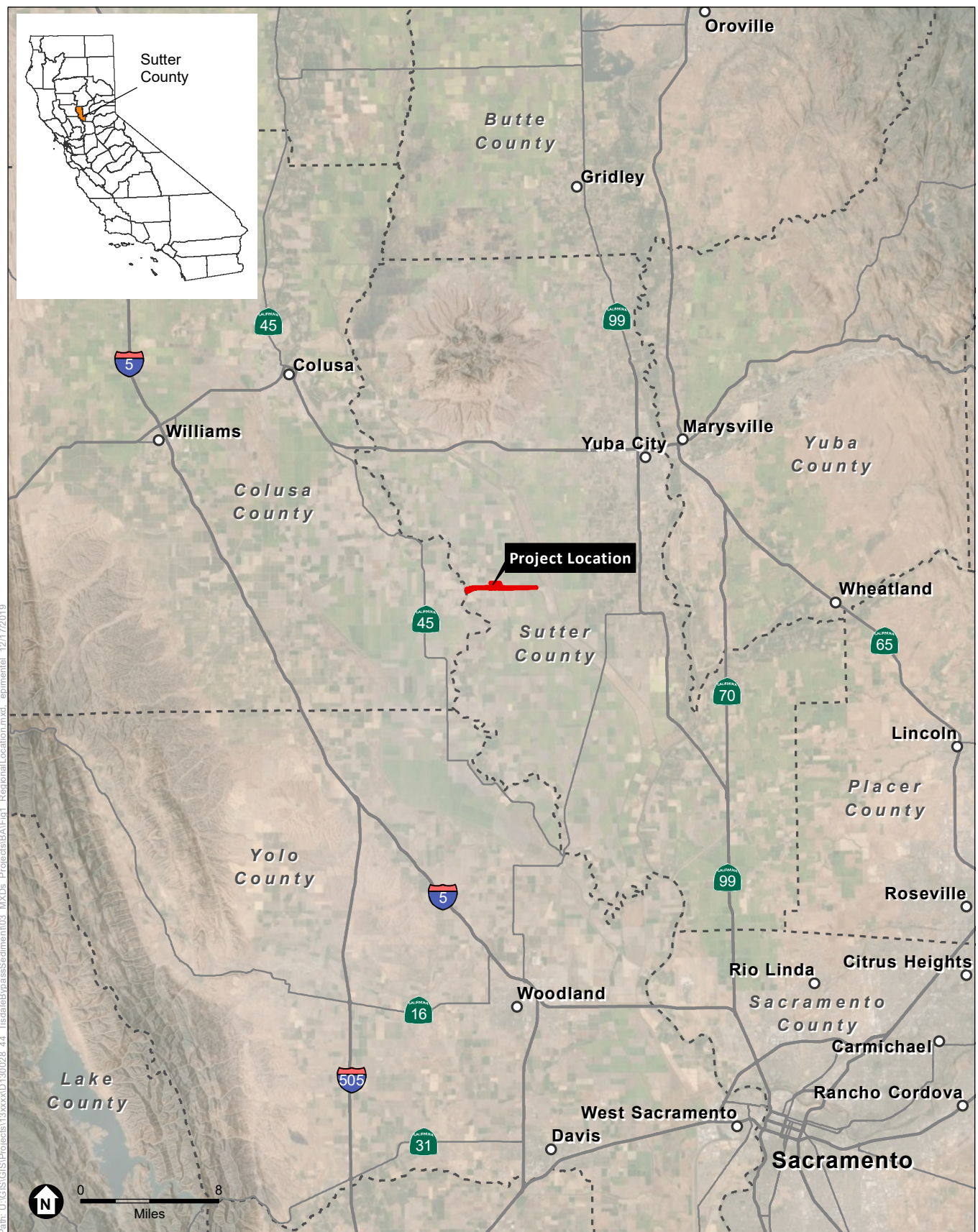
of Tisdale Weir. In areas of the Tisdale Bypass where the water table allows, woody vegetation such as willow has grown, further reducing the capacity to pass design flows. In order to comply with DWR's maintenance responsibility, up to approximately 500,000 cubic yards (CY) of accumulated sediment will be excavated along the entire length of the Tisdale Bypass to return to conditions following the 2007 sediment removal effort. Total cuts and fills would be up to 500,000 CY and 100,000 CY, respectively, resulting in a net removal of up to 400,000 CY from the Bypass. The typical depth of cuts and fills within the Bypass would range between one and five feet in depth. Typical side slopes on areas of cuts would be approximately three feet horizontally for each one foot vertically (3H:1V). The area of cuts would remain outside the limits of the major tree lines along the Bypass' north and south levees. These lines of trees would continue to control erosion caused by wind waves along the levees. Enough vertical clearance during excavations would be provided in areas directly adjacent or above the Sutter Mutual Pipeline that runs under the Bypass.

1.3 Property Location

The study area is located in an unincorporated area of Sutter County, California (**Figure 1**). The Tisdale Bypass is situated at Sacramento River Mile 119 in Sutter County, about 6.3 miles downstream from the community of Grimes and 10 miles upstream of where the Yolo County and Colusa County lines meet. The study area is east of the Sacramento River, north of Tisdale Road, west of Sutter Bypass, and south of Acme Road. The study area is located in Sections 25, 26, 35, and 36 of Township 14 North, Range 1 East, and Sections 27, 28, 29, 30, 31, 32, 33, and 34 of Township 14 North, Range 2 East of the Tisdale Weir and Gilsizer Slough U.S. Geological Survey (USGS) 7.5-minute series quadrangles (USGS, 1967-1981).

The study area includes the Tisdale Bypass from the Tisdale Weir in the west to the connection with Sutter Bypass to the east. The study area also includes an approximately 66-acre sediment stockpile disposal area and a separate construction equipment staging area both located north of the Tisdale Bypass north levee and west of Reclamation Road (**Figure 2**). Garmire Road Bridge and Reclamation Road Bridge are within the study area and both traverse over the Tisdale Bypass. Water trucks used for dust control may extract water from the northern toe drain of the Tisdale Bypass just east of Reclamation Road Bridge (designated as the "Proposed Water Intake Area" in Figure 2).

Surrounding land uses primarily include rice fields and row crops.



SOURCE: Esri, 2018; ESA, 2019

Tisdale Bypass Sediment Removal 2020

Figure 1
Regional Location

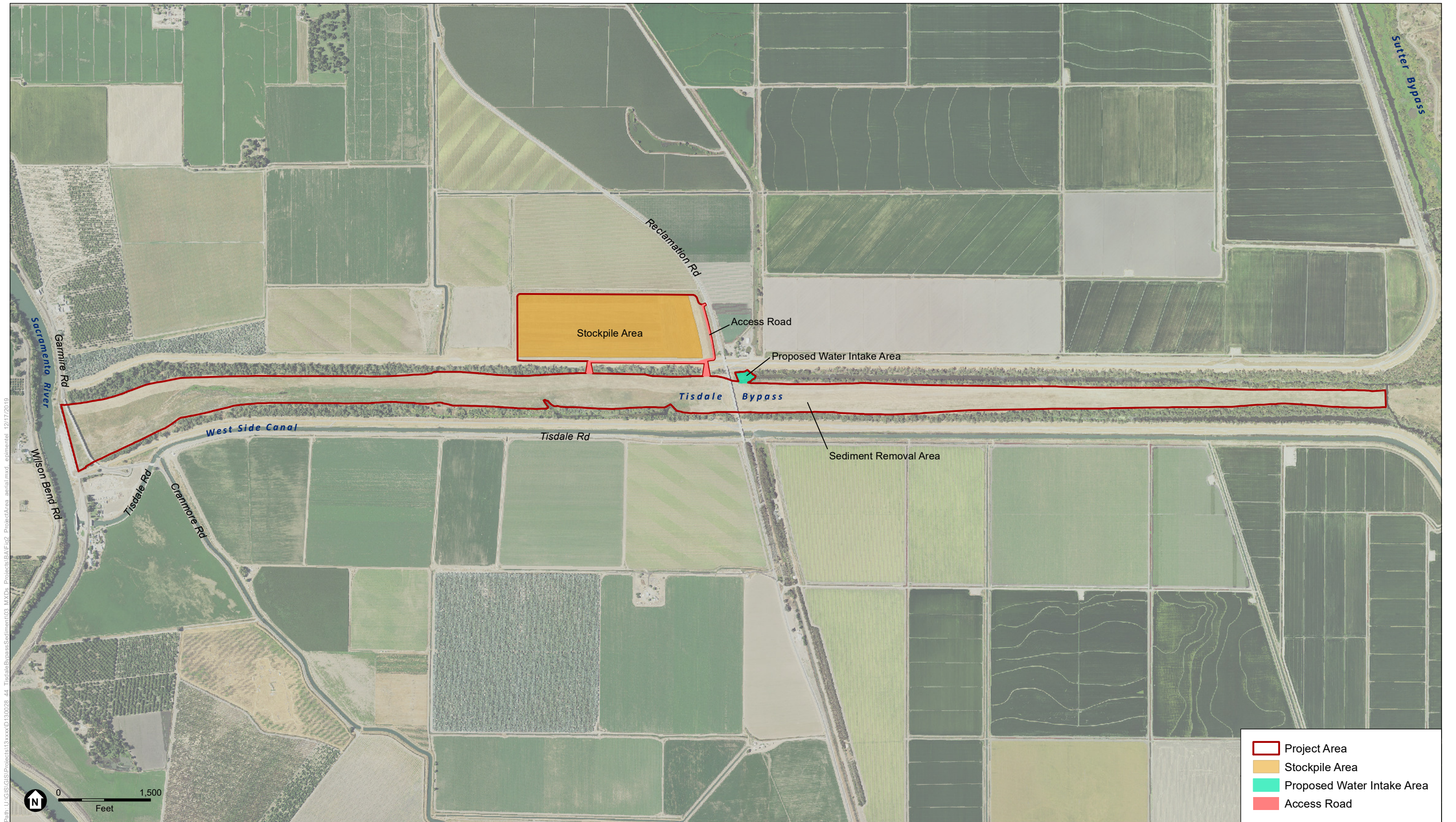
1.4 Regulatory Context

This section summarizes the federal and state regulations that protect sensitive biological resources that may occur in the study area, including special-status species; waters of the U.S.; and sensitive natural communities. In general, the greatest legal protections are provided for plant and wildlife species that are formally listed under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). The California Environmental Quality Act (CEQA) also specifies the protection of other locally or regionally significant resources, including sensitive natural communities. CDFW identifies those natural communities which are considered sensitive (see Section 3.3 for additional details). CEQA requires an assessment of such communities and potential project impacts. The regulations and agencies listed in **Table 1** are commonly associated with projects that have the potential to affect biological resources.

TABLE 1
REGULATORY AGENCIES

Agency	Regulation
Federal	
U.S. Fish and Wildlife Service (USFWS)	<ul style="list-style-type: none"> • Federal Endangered Species Act • Federal Migratory Bird Treaty Act • Bald and Golden Eagle Protection Act
National Marine Fisheries Service (NMFS)	<ul style="list-style-type: none"> • Federal Endangered Species Act
United States Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> • Clean Water Act, Section 404
State	
California Department of Fish and Wildlife (CDFW)	<ul style="list-style-type: none"> • California Endangered Species Act (Fish and Game Code Section 2080) • Fish and Game Code 3503 • Native Plant Protection Act • Lake and Streambed Alteration Program (Fish and Game Code Section 1600)
Central Valley Regional Water Quality Control Board (CVRWQCB)	<ul style="list-style-type: none"> • Clean Water Act, Section 401 • Porter-Cologne Water Quality Control Act

These regulations are presented and discussed in full in **Appendix A, Regulatory Context**.



SOURCE: USDA, 2014; DWR, 2019; ESA, 2019

Tisdale Bypass Sediment Removal 2020

Figure 2
Project Area

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CHAPTER 2

Methods

2.1 Survey Methodology

2.1.1 Survey Dates and Surveying Personnel

ESA Senior Biologist Kelly Bayne and Biologist Daniel Huang conducted a general biological survey, a botanical inventory, and an aquatic resources delineation within the study area on May 21, 2019. Ms. Bayne conducted botanical inventories within the study area on May 7, 2019 and June 21, 2019 and a general biological survey on July 31, 2019. The study area was entirely accessible by foot. The results of the aquatic resources delineation are summarized herein and are discussed in detail in a separate document (ESA, 2019).

2.1.2 Habitat and Vegetation Surveys

The biological survey consisted of conducting a botanical inventory, evaluating vegetative communities, mapping wetlands and waterways, and documenting habitat for special-status species with the potential to occur within the study area. Natural communities and aquatic features were characterized and mapped in the field using aerial photography. The boundaries of natural communities and wetlands were subsequently digitized using Geographic Information System (GIS) software in the State Plane coordinate system (NAD 83) with units as “survey feet.”

The wetland delineation used the “Routine Determination Method” as described in the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987), hereafter called the “1987 Manual.” The 1987 Manual was used in conjunction with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008), hereafter called the “Arid West Supplement.” For areas where the 1987 Manual and the Arid West Supplement differ, the Arid West Supplement was followed. Presence or absence of positive indicators for wetland vegetation, soils, and hydrology was assessed per the 1987 Manual and Arid West Supplement guidelines. The delineation is considered preliminary as it has not yet been verified by the U.S. Army Corps of Engineers.

2.2 Review of Background Information

ESA reviewed previous biological reports prepared for other projects in the vicinity of the study area, including the Tisdale Weir Rehabilitation and Fish Passage Project, the 2008 Garmire Road Bridge Project, and the 2007 Tisdale Sediment Removal Project. Information regarding biological resources developed for these projects were considered during the preparation of this report to the

extent possible. However, given that the biological resources information analyzed for these projects was either focused on a small section of the Tisdale Bypass adjacent to Tisdale Weir (e.g., Tisdale Weir Rehabilitation and Fish Passage Project and Garmire Road Bridge Project) or included studies that are now in excess of 10 years in age (e.g., Garmire Road Bridge Project and 2007 Tisdale Sediment Removal Project), the preparation of this report relied on updated biological resources data queries and regulatory information as well as the information gathered during the biological and botanical surveys conducted in May, June, and July 2019.

Prior to performing the biological and botanical surveys, ESA reviewed publicly available data and subscription-based biological resources data. Data sources that assisted in this analysis include:

- Topographic maps (Tisdale Weir and surrounding 8 quadrangles);
- Online soil maps from the National Resources Conservation Service (NRCS, 2019a and 2019b);
- California Wildlife Habitat Relationships (CWHR) database (CDFW 2014);
- The CDFW California Natural Diversity Database (CNDDDB) list of plant and wildlife species documented on the Tisdale Weir and 8 surrounding quadrangles (CDFW, 2019);
- The California Native Plant Society (CNPS) online database of plant species documented on the Tisdale Weir and 8 surrounding quadrangles (CNPS, 2019); and
- A U.S. Fish and Wildlife Service (USFWS) list of species that may occur in the vicinity of the study area (USFWS, 2019).

The USFWS, CDFW, and CNPS lists are provided in **Appendix B**. The CNDDDB and CNPS lists include special-status species documented on the following nine quadrangles:

Meridian	Sutter Buttes	Sutter
Grimes	Tisdale Weir	Gilsizer Slough
Dunnigan	Kirkville	Sutter Causeway

General plant and wildlife references include Baldwin et. al., 2012; Californiaherps, 2019; Calflora, 2019; Nature Serve, 2019, Stebbins, 2003; Cornell Lab of Ornithology; Western Bat Working Group, 2019; Zeiner et. al., 1988 and 1990a; and Zeiner, 1990b.

CHAPTER 3

Environmental Setting

This chapter provides the environmental baseline for soil types, natural communities/land cover types, waters of the U.S., and special-status species potentially occurring within the study area.

3.1 Topography

Topography within the study area is largely flat, with a gradual transition from the slightly higher elevations in the western end of the Tisdale Bypass adjacent to Tisdale Weir compared to the eastern end (**Figure 3**). Elevation within the Tisdale Bypass ranges from approximately 30 feet above mean sea level to 45 feet above mean sea level. The sediment stockpile area located north of the Tisdale Bypass is relatively flat at approximately 35 feet above mean sea level.

3.2 Soil Types

The Natural Resources Conservation Service (NRCS) has mapped four soil units within the study area (**Figure 4**). General characteristics associated with these soil types are described below (USDA NRCS, 2019a).

3.2.1 (118) Columbia Fine Sandy Loam, Channeled, 0 to 2 Percent Slopes

This soil unit occurs on floodplains with parent material comprised of mixed alluvium. This is a somewhat poorly drained soil with a moderate available water storage comprised of about 6.6 inches. The typical profile is comprised of fine sandy loam from 0 to 14 inches and stratified fine sandy loam to very fine sandy loam from 14 to 60 inches. The hydric soils list for Sutter County identifies the Shanghai, Byington, and Columbia, fine sandy loam, channelized components found in floodplains of this soil type as hydric (USDA NRCS, 2019a and b).

3.2.2 (119) Columbia Fine Sandy Loam, Clay Substratum, 0 to 2 Percent Slopes

This soil unit occurs on floodplains with parent material comprised of mixed alluvium. This is a somewhat poorly drained soil with a low available water storage comprised of about 5.3 inches. The typical profile is comprised of fine sandy loam from 0 to 15 inches, stratified sand to silt loam from 15 to 52 inches, and stratified very fine sandy loam to clay loam to silty clay loam from 52 to 60 inches. The hydric soils list for Sutter County identifies the Shanghai, Byington, and Columbia, fine sandy loam, clay substratum components found in floodplains of this soil type as hydric (USDA NRCS, 2019a and b).

3.2.3 (135) Holillipah Loamy Sand, Frequently Flooded, 0 to 2 Percent Slopes

This soil unit occurs on floodplains with parent material comprised of sandy alluvium derived from mixed alluvium. This is a somewhat excessively drained soil with a low available water storage comprised of about 4.7 inches. The typical profile is comprised of sandy loam from 0 to 8 inches and stratified sand to loamy fine sand from 8 to 60 inches. The hydric soils list for Sutter County identifies the Holillipah, loamy sand frequently flooded, Shanghai, Columbia, and unnamed components found in floodplains and fans of this soil type as hydric (USDA NRCS, 2019a and b).

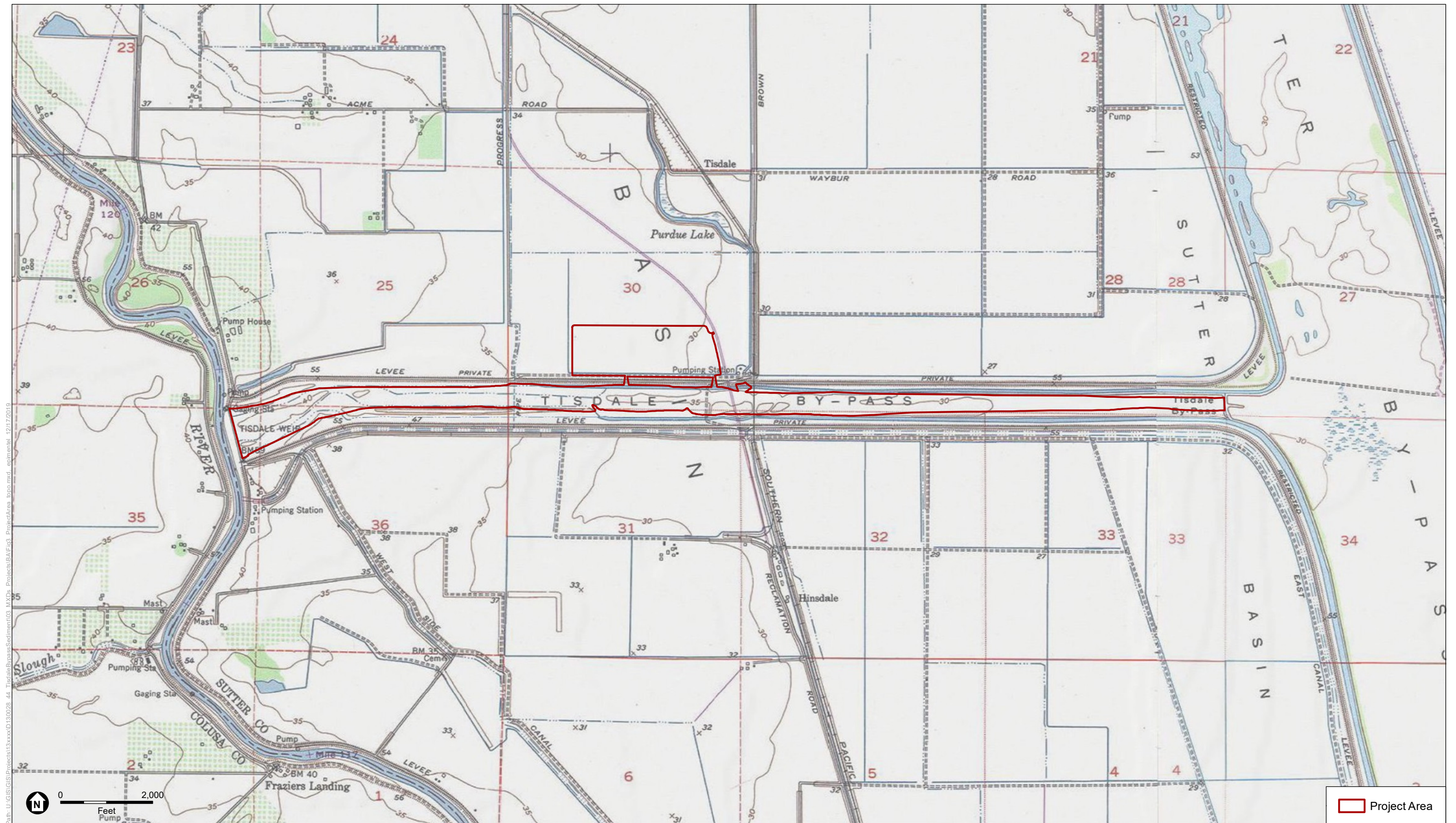
3.2.4 (161) Shanghai Fine Sandy Loam, Channeled, 0 to 2 Percent Slopes

This soil unit occurs on floodplains. This is a somewhat poorly drained soil with a high available water storage comprised of about 9.6 inches. The typical profile is comprised of fine sandy loam from 0 to 15 inches and stratified sandy fine loam to silty clay loam from 15 to 60 inches. The hydric soils list for Sutter County identifies the Shanghai, Columbia, and Holillipah components found in floodplains of this soil type as hydric (USDA NRCS, 2019a and b).

3.3 Natural Communities and Land Cover Types

Natural communities are combinations of plants and animals that are regularly found together in certain physical conditions. Natural communities are evaluated by the CDFW and are assigned global (G) and state (S) ranks based on rarity and threats to these communities in California. Natural communities with ranks S1-S3 (S1: critically imperiled; S2: imperiled; S3: vulnerable) are considered “sensitive natural communities.” Sensitive natural communities have a limited distribution and are often vulnerable to the environmental effects of projects. The natural community/land cover type classification presented herein is based on field observations.

The following natural communities/land cover types occur within the study area: annual grassland, seasonal riverine, and disturbed. **Table 2** provides a summary of the natural communities/land cover types by acreages. Their distribution within the study area are presented in **Figure 5**. Commonly occurring wildlife are identified for each of the natural communities/land cover types. Complete lists of plant and wildlife species identified during surveys are provided in **Appendix C** and **Appendix D**, respectively. Representative photographs of habitat types are provided in **Appendix E**.

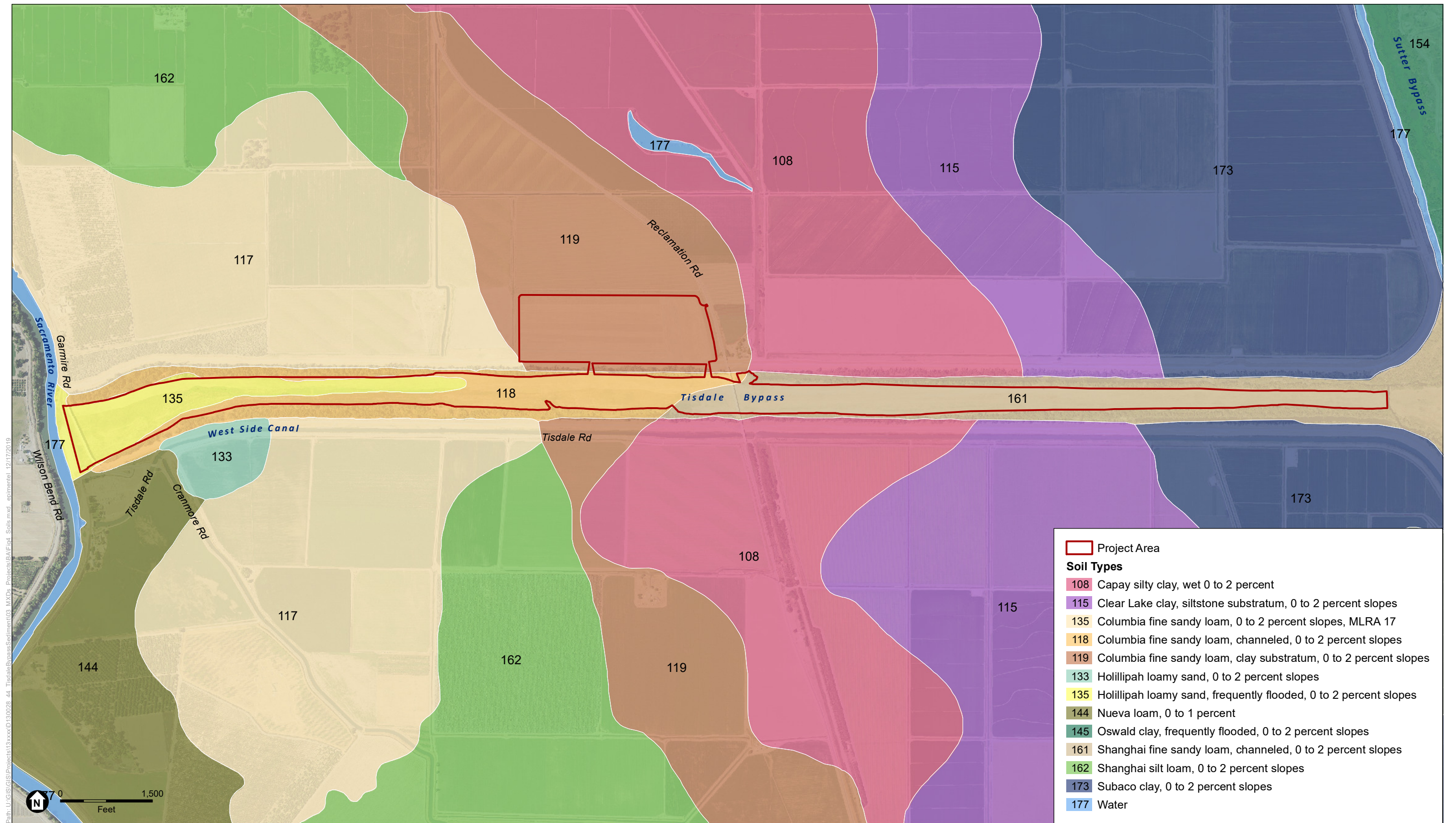


SOURCE: Topographic Map (Gilsizer Slough, 1952; Tisdale Weir, 1952); DWR, 2019; ESA, 2019

Project Location: T14N, R1E, Sections 25, 26, 35, 36
T14N, R2E, Sections 28, 29, 30, 31, 32, 33
39.026856, -121.787619

Tisdale Bypass Sediment Removal 2020

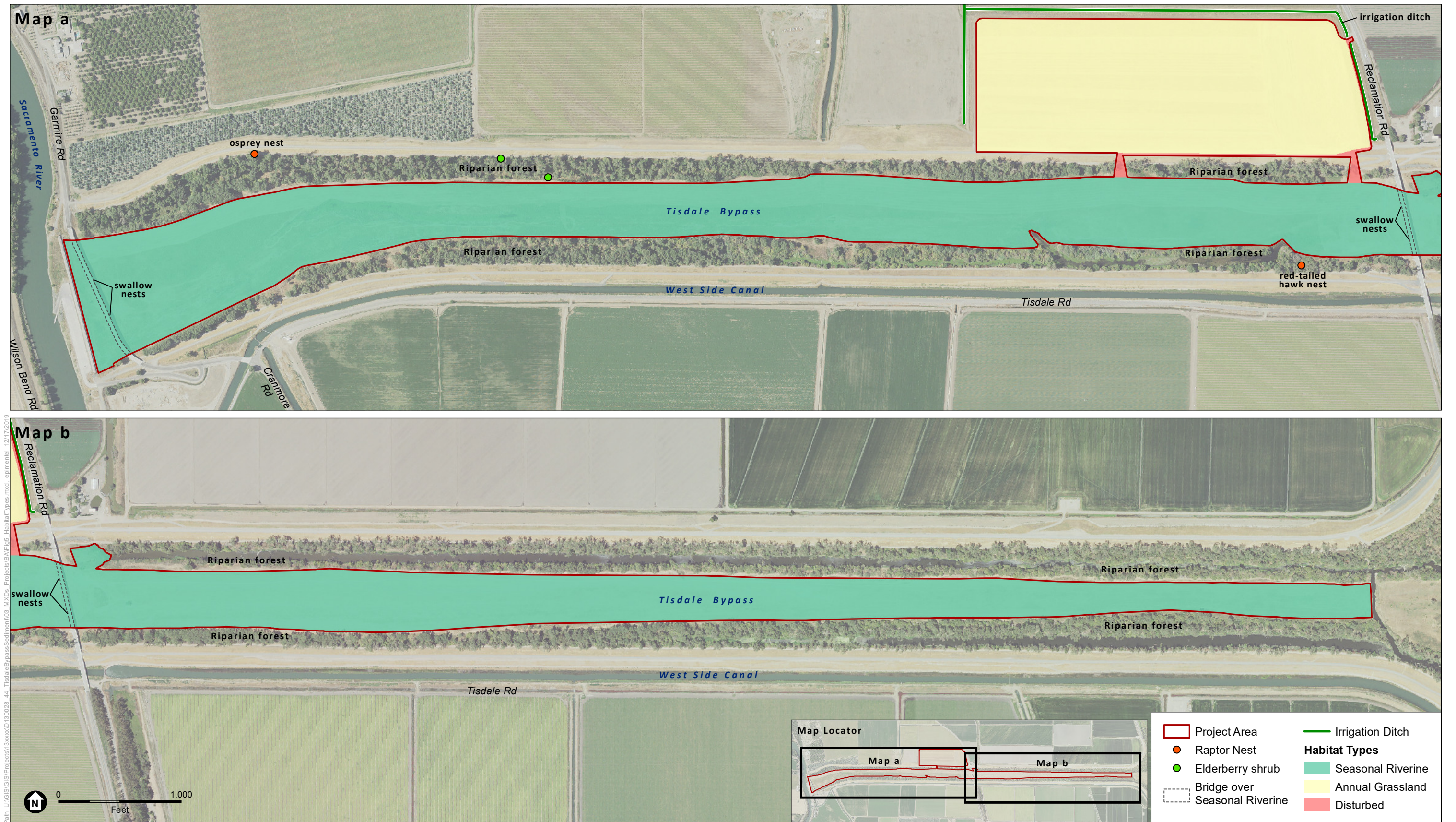
Figure 3
Topographic Map



SOURCE: USDA, 2014; NRCS, 2012; DWR, 2019; ESA, 2019

Tisdale Bypass Sediment Removal 2020

Figure 4
Soils



SOURCE: USDA, 2014; DWR, 2019; ESA, 2019

Tisdale Bypass Sediment Removal 2020

Figure 5
Habitat Types

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TABLE 2
NATURAL COMMUNITY AND LAND COVER TYPES BY ACREAGES

Natural Community/Land Cover Type ¹	Acreage ²
Annual grassland	77.29
Seasonal riverine ³	234.11
Disturbed	2.16
Total	313.56

NOTES:
¹ A canal occurs just outside the margins of the study area
² GIS calculations may not reflect exact acreage of study area due to rounding
³ This feature is wetted on average for several weeks every year.

3.3.1 Annual Grassland

Annual grassland occurs primarily in the proposed spoils area within the northern portion of the study area. Based on past aerial imagery, this area was formerly farmed agricultural land, but currently appears to be fallowed. As a result, this area is currently best classified as annual grassland. Dominant vegetation includes non-native grassland species such as wall barley (*Hordeum murinum*), wild oat (*Avena fatua*), Johnson grass (*Sorghum halepense*), and milk thistle (*Silybum marianum*).

Commonly occurring wildlife typically associated with annual grassland habitat includes turkey vulture (*Cathartes aura*), coyote (*Canis latrans*), California ground squirrel (*Otospermophilus beecheyi*), and black-tailed jackrabbit (*Lepus californicus*).

3.3.2 Disturbed

Disturbed areas within the study area include the graded levee north of the Tisdale Bypass and the two access areas between the Tisdale Bypass and the graded levee road where riparian trees were previously removed as part of the 2007 remediation work. This area is vegetated along the slope of the levee with ruderal herbaceous species that commonly occur in disturbed areas. There is very limited vegetation along the levee crown, which is topped with gravel. Disturbed areas are not considered natural communities.

3.3.3 Seasonal Riverine

Seasonal riverine is the most common natural community/land cover type within the study area, encompassing much of the Tisdale Bypass. The seasonal riverine natural community within the study area is not a sensitive natural community, as defined by CDFW, however this feature is still protected under the Clean Water Act (see Section 3.4, Wetlands and Other Waters of the U.S. below). Seasonal riverine habitat is disturbed as a result of ongoing maintenance activities including routine mowing and from deposited sediment and woody debris following storm events. Since the Tisdale Bypass is only periodically inundated,² the Tisdale Bypass is typically

² Under flood conditions, the Sacramento River flow overtops the Tisdale Weir when the river's stage reaches greater than 44.05 feet, NAVD88. Based on historical records, the weir overflows about 43 days each year on average, or about 12 percent of the time, mostly between January and March.

dry for several months of the year and is mowed every year, which minimizes the opportunity for large trees and shrubs to establish. Dominant vegetation includes salt grass (*Distichlis spicata*) with recently established narrow-leaved willow and Fremont cottonwood saplings.

Seasonal riverine includes the toe drain (proposed water intake area) that occurs within the northern section of the Tisdale Bypass just east of Reclamation Road. This toe drain may be used for pumping water into water tankers for use in dust suppression during construction. Dominant vegetation consists of disturbed riparian vegetation. Seasonal riverine includes a few low spots in and adjacent to the study area that hold water for longer periods than the majority of the bypass.

Commonly occurring wildlife typically associated with this vegetation type includes species similar to those described under annual grassland above. Swallow nests were observed beneath the deck of Garmire Road bridge and Reclamation Road bridge, both of which cross through the study area over Tisdale Bypass.

3.3.4 Riparian Forest

Riparian forest occurs along the northern and southern margins of the Bypass. The CDFW has classified this area as great valley cottonwood riparian forest (CNDDB, 2019). Dominant overstory vegetation includes valley oak (*Quercus lobata*), narrow-leaved willow, and Fremont cottonwood. Common understory vegetation includes box elder (*Acer negundo*), Himalayan blackberry (*Rubus armeniacus*), western poison oak (*Toxicodendron diversilobum*), and wild oat. While the majority of riparian forest occurs outside the project area, a small area of riparian habitat occurs within the northern section of the Bypass just east of Reclamation Road. The riparian forest east of Reclamation Road includes six Fremont cottonwood that were planted by DWR as mitigation for the 2007 sediment removal project..

Commonly occurring wildlife associated with riparian habitat includes California vole (*Microtus californicus*), black-headed grosbeak (*Pheucticus melanocephalus*), lesser goldfinch (*Spinus psaltria*), and American goldfinch (*Spinus tristis*). Active osprey and red-tailed hawk nests were observed in the riparian forest north and south of the study area during the 2019 biological surveys (Figure 5).

3.3.5 Canal

The study area includes an access road that crosses over an irrigation canal to the west of Reclamation Road and to the east of the stockpile area. The irrigation canal crosses beneath the study area through a culvert and continues south outside of the study area. Water was observed flowing during the July 31, 2019 survey. The irrigation canal extends south, turns east beneath Reclamation Road, turns northeast, and drains to a larger canal to the north of the Tisdale Bypass and east of Reclamation Road. When available, water is pumped between the canal and the northern toe drain of the Tisdale Bypass just east of Reclamation Road by Reclamation District 1660. The irrigation canal consists of an approximately 6 foot wide bed and bank. Dominant vegetation along the banks includes broad-leaved cattail (*Typha latifolia*), bristly ox-tongue (*Helminthotheca ichioides*), and Queen Anne's lace (*Daucus carota*).

3.4 Wetlands and Other Waters of the U.S.

Wetlands are ecologically complex natural communities that support a variety of both plant and animal life. In a jurisdictional sense, the federal government defines wetlands in Section 404 of the Clean Water Act as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater emergent wetlands, seasonal wetlands, and wet meadows that have a hydrologic link to other waters of the U.S. (see definition below for “other waters of the U.S.”).

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

Seasonal riverine occurs within the study area, which is considered a potentially jurisdictional water of the U.S. under Section 404 of the Clean Water Act. Based on the aquatic resource delineation report, the extent of this seasonal riverine feature is 234.11 acres (ESA, 2019). All conclusions presented should be considered preliminary and subject to change pending official review and verification in writing by the U.S. Army Corps of Engineers.

3.5 Special-Status Species

Special-status species include those that are legally protected under the state and federal Endangered Species Acts or other regulations or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are classified under the following categories:

1. Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
2. Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (61 FR 40, February 28, 1996);
3. Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 California Code of Regulations [CCR] 670.5);
4. Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
5. Animal species of special concern to CDFW;
6. Animals fully protected under Fish and Game Code (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);

7. Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as “rare or endangered” even if not on one of the official lists (State CEQA Guidelines, Section 15380); and
8. Plants considered under the CDFW and CNPS to be “rare, threatened or endangered in California” (California Rare Plant Rank [CRPR] 1A, 1B, and 2).³

Species recognized under these terms are collectively referred to as “special-status species.”

Special-status species considered for this analysis are based on the CNDDDB (CDFW, 2019), CNPS (CNPS, 2019), and USFWS (USFWS, 2019) lists. A comprehensive list of special-status plant and wildlife species that were considered in the analysis is provided in **Appendix B**. The list includes the common and scientific names for each species, regulatory status (federal, State, local, CRPR), habitat requirements, the identification period, and a discussion of the potential for occurrence in the study area. Species which are not expected to occur within the study area (refer to Table B-1 in Appendix B) are excluded from the discussion below. The assessment of presence was based on the following categories of likelihood of occurrence:

- **None:** the species’ required habitat is lacking or potentially occurring plants were not observed during the evident and identifiable season;
- **Low:** the species’ required habitat either does not occur or is of very low quality such that no observation have occurred on or near the project area;
- **Moderate:** the species’ required habitat occurs within the project area and there are known occurrences nearby, but there are no recorded observations within the project area; or
- **High:** the species has been documented within the project area and there is suitable habitat within the project area.

3.5.1 Federal and State-Listed Plants

No federally or state-listed plant species have the potential to occur within the study area.

3.5.2 Non-Listed Special-Status Plants

No non-listed special-status plant species have the potential to occur within the study area.

³ CDFW works in collaboration with the CNPS to maintain a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. These species are categorized by rarity in the CRPR. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. The following identifies the definitions of the CRPR:

- Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere.
- Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
- Rank 3: Plants about which more information is needed - A Review List.
- Rank 4: Plants of limited distribution - A Watch List.

3.5.3 Federal and State Listed Wildlife

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

Valley elderberry longhorn beetle (VELB) is federally listed as threatened.

VELB is completely dependent on elderberry shrubs for all stages of their lifecycle, and is generally associated with riparian habitats. This species is restricted to the Central Valley. The life history of VELB is not well known. Adult beetles are active from March to June, which is their assumed breeding season. Adults are known to lay eggs in the crevices of bark of elderberry plants. Larvae hatch days later and bore into the stem of the elderberry shrubs where they feed on the pith. Larvae pupate inside the stem and emerge as adults in the spring. Larvae cut an emergence/exit hole through the wood and bark of the elderberry plant. Adults can fly between elderberry plants. Evidence of use by VELB is more commonly observed for clumps of elderberry bushes rather than isolated bushes.

There are no CNDDDB records for VELB documented within five miles of the study area. No elderberry shrubs were observed within the study area. Two isolated elderberry shrubs occur within the riparian forest to the north of the Tisdale Bypass and to the south of the access road (Figure 3). While no exit holes were observed on the stems that were visible with binoculars, the majority of the stems were inaccessible due to the dense vegetation surrounding them. The VELB framework recommends additional analysis of elderberry shrubs within 162 feet (50 meters) of the study area (USFWS, 2017). Therefore, VELB has the potential to occur within 165 feet of the study area.

Giant Garter Snake (*Thamnophis gigas*)

Giant garter snakes (GGS) are a federally listed threatened species and a State listed threatened species.

GGS reside in marshes, ponds, sloughs, small lakes, low-gradient streams, and other waterways and agricultural wetlands, including irrigation and drainage canals, rice fields, and the adjacent uplands. The ideal aquatic habitat includes presence of water from March through November, slow moving or static water with mud substrate, presence of emergent or bankside vegetation that provide cover from predators, available prey in the form of small amphibians and small fish, basking sites with adjacent vegetation for cover, absence of large predatory fish, and absence of flooding that would inundate upland refugia (USFWS, 2017). Although GGS is predominantly an aquatic species, they use upland areas near aquatic habitat during their active seasons in the spring and summer. Upland habitat is used for basking to regulate body temperature, and for cover. GGS utilize small mammal burrows and crevices in the soil to avoid predation.

There are dozens of documented CNDDDB occurrences of this species within five miles of the study area. There is a documented occurrence of this species in 2008 associated with the north bank of the Sutter Mutual Main Canal located just south of the study area. No GGS were encountered during the biological surveys in 2019.

The Tisdale Bypass itself does not provide suitable habitat for GGS. Because GGS are not known to utilize riparian woodland (Hansen and Brode, 1980), the densely vegetated riparian forest surrounding the Tisdale Bypass likely precludes GGS from movement between the canal outside of the project area and the Bypass. In addition, the Tisdale Bypass lacks aquatic habitat for the majority of the year when there are no flows or standing water and contains sandy soils that preclude small mammal burrows from being formed, which GGS need for upland refugia. Further, the Tisdale Bypass is routinely mowed when it is dry, which further minimizes the potential for GGS to utilize it as suitable upland habitat.

Suitable aquatic habitat for GGS is present in the canal located east of Tisdale Parcel just outside the study area. While the proposed water intake area to the east of Reclamation Road provides marginally suitable habitat, it is surrounded by disturbed riparian vegetation and is only connected to the canal through an underground culvert comprised of a slide gate. The slide gate can be left open or shut depending on the water needs of the Reclamation District. Therefore, it is unlikely that GGS would inhabit the proposed water intake area. GGS has the potential to occur within and in the vicinity of the canal just outside of the study area. Further, the flooded rice fields and canals to the north of the study area provide higher quality habitat for GGS.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Western yellow-billed cuckoo is a federal listed threatened and a state listed endangered species.

Proposed critical habitat occurs in the eastern portion of the study area, overlapping from approximately 0.5 miles east of Reclamation Road eastward to the confluence of Tisdale Bypass and Sutter Bypass. This section of proposed critical habitat within Tisdale Bypass is contiguous with a larger section of proposed critical habitat within the Sutter Bypass, particularly within the Sutter National Wildlife Refuge. Proposed critical habitat consists of large, contiguous patches (greater than 200 acres in extent and greater than 325 feet in width) of willow-cottonwood riparian woodland with dense canopy and understory structure; an adequate prey base, including large insect fauna and tree frogs; and a dynamic riverine system that encourages sediment movement and sustained regeneration of mixed-age riparian habitat.

Western yellow-billed cuckoo nests along broad, lower flood bottoms of larger river systems in dense riparian vegetation comprised of willow and cottonwood, with a lower story of black berry, nettles, or wild grape. In California, this species nests in scattered, isolated areas within Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys.

There are no CNDDDB records for this species within 5 miles of the study area. There are only two CNDDDB records for this species within the Tisdale quadrangle and eight surrounding quadrangles. These records are both greater than 10 miles northwest of the study area. One is from 1976 and the other is from 1988. This species no longer appears to nest in the vicinity of the study area given that only two records have been documented and both are over 30 years old. No western yellow-billed cuckoos were encountered during the 2019 biological surveys.

The study area does not provide suitable nesting or foraging habitat for western yellow-billed cuckoo. Because western yellow-billed cuckoos tend to nest in large extents of habitat with a

closed canopy and high humidity, there is potential for western yellow-billed cuckoos to nest within the large blocks of riparian habitat present in Sutter Bypass located east of the study area. The riparian forest situated along the northern and southern margins of Tisdale Bypass consists of mostly narrow bands of trees dominated by cottonwoods. While unlikely given the lack of CNDDDB occurrences in the vicinity and the marginal suitability of the narrow riparian corridor, the western yellow-billed cuckoo has a low potential to nest and forage within the riparian forest to the north and south of the study area.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a state listed threatened species.

The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters in South America (Bradbury et al., in prep.). Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Zeiner et al., 1990a). In the Central Valley, Swainson's hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually in close proximity to suitable foraging habitats, which include fallow fields, annual grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and De Water, 1994).

There are numerous CNDDDB records for this species within five miles of the study area. There are six recorded observations of this species within the study area and four more located within one mile. None of these occurrences were documented within the last five years. No Swainson's hawks were observed during the biological surveys in 2019.

The portion of riparian forest within the study area does not contain large enough trees to provide suitable nesting habitat for this species. The trees within the riparian forest along the north and south margins of Tisdale Bypass provide suitable nesting habitat for this species. The annual grassland within the study area, as well as the Tisdale Bypass itself when dry, provide suitable foraging habitat for this species. This species was not observed during the biological surveys, which were conducted during the nesting season from March 1 through August 31. Although no Swainson's hawk nests were found during the 2019 biological surveys, this species has a high potential to nest and forage within the study area and/or within a 0.5-mile buffer around the study area.

Central Valley Spring-run Chinook Salmon (*Oncorhynchus tshawytscha*)

Central Valley spring-run Chinook salmon is federally and state listed as a threatened species.

Central Valley spring-run Chinook salmon were historically the second most abundant run of Central Valley Chinook salmon (Fisher, 1994). They occupied the headwaters of all major river systems in the Central Valley where there were no natural barriers. Adults returning to spawn

ascended the tributaries to the upper Sacramento River, including the Pit, McCloud, and Little Sacramento rivers. They also occupied Cottonwood, Battle, Antelope, Mill, Deer, Stony, Big Chico, and Butte Creeks and the Feather, Yuba, American, Mokelumne, Stanislaus, Tuolumne, Merced, San Joaquin, and Kings Rivers. Spring-run Chinook salmon migrated into headwater streams where cool, well-oxygenated water is available year-round.

Spawning occurs in gravel beds from late August through October, and emergence takes place in March and April. Spring-run Chinook salmon emigrate at two different life stages: fry and yearlings. Fry move between February and June, while the yearling spring-run emigrate October to March, peaking in November (Cramer and Demko, 1997). Juveniles display considerable variation in stream residence and migratory behavior. Juvenile spring-run Chinook salmon may leave their natal streams as fry soon after emergence or rear for several months to a year before migrating as smolts or yearlings (Yoshiyama et al., 1998).

A large portion of the spring-run Chinook salmon population migrate via the Sacramento River past the Tisdale Weir. Spring-run Chinook salmon adults may also attempt to migrate upstream via the Sutter Bypass and the Tisdale Bypass when these bypasses are inundated. As such, spring-run Chinook salmon has a high potential to be seasonally present within the study area.

Sacramento River Winter-Run Chinook Salmon (*Oncorhynchus tshawytscha*)

Sacramento River winter-run Chinook salmon is federally and state listed as an endangered species.

The distribution of winter-run spawning and initial rearing historically was limited to the upper Sacramento River (upstream of Shasta Dam), McCloud River, Pitt River, and Battle Creek, where springs provided cold water throughout the summer, allowing for spawning, egg incubation, and rearing during the mid-summer period (Yoshiyama et al., 1998). The construction of Shasta Dam in 1943 blocked access to all of these waters except Battle Creek, which currently has its own impediments to upstream migration (i.e., a number of small hydroelectric dams situated upstream of the Coleman National Fish Hatchery Weir).

Adult winter-run Chinook salmon begin their upstream migration through the Sacramento–San Joaquin Delta in December and continue through July with a peak occurring between the months of December and April (NMFS, 2014). Adult winter-run Chinook salmon return from the ocean prior to reaching full sexual maturity and hold in the Sacramento River for several months before spawning while they mature. Currently, the spawning range of winter-run Chinook salmon is confined to the Sacramento River between Red Bluff Diversion Dam and Keswick Dam (Vogel and Marine, 1991; NMFS, 2014). Historically, spawning likely occurred upstream of Shasta Dam in spawning reaches which are no longer accessible to anadromous fish (Yoshiyama et al., 1998), as well as in the upper tributary to the Sacramento River, Battle Creek (Lindley et al., 2004).

Juvenile winter-run Chinook salmon begin to enter the Delta in October and outmigration continues until April. Juvenile outmigration timing is thought to be strongly correlated with winter rain events that result in higher flows in the Sacramento River (del Rosario et al., 2013).

Winter-run Chinook salmon use the Delta primarily as a migration corridor as they make their way to Suisun and San Pablo Bays and eventually the Pacific Ocean.

The entire population of winter-run Chinook salmon population migrate via the Sacramento River past the Tisdale Weir. Adult winter-run Chinook salmon adults may also attempt to migrate upstream via the Sutter Bypass and the Tisdale Weir when these bypasses are inundated. As such, winter-run Chinook salmon has a high potential to be seasonally present within the study area.

Central Valley Steelhead (*Oncorhynchus mykiss*)

Central Valley steelhead is federally listed as a threatened species.

Historically, steelhead spawned and reared in most of the accessible upstream reaches of Central Valley rivers and many of their tributaries. Compared with Chinook salmon, steelhead generally migrated farther into tributaries and headwater streams where cool, well-oxygenated water is available year-round.

The upstream migration of adult steelhead historically started in July, peaked in early fall, and continued through March. Central Valley steelhead spawn mainly from January through March, but spawning has been reported from late December through April (McEwan and Jackson, 1996). During spawning, the female digs a redd (gravel nest) in which she deposits her eggs, which are then fertilized by the male. Egg incubation time in the gravel is determined by water temperature, varying from approximately 19 days at an average water temperature of 60°F to approximately 80 days at an average temperature of 58°F (McEwan and Jackson, 1996).

Steelhead fry usually emerge from the gravel two to eight weeks after hatching, between February and May, sometimes extending into June (Barnhart, 1986; Reynolds et al., 1993). Newly emerged steelhead fry move to shallow, protected areas along streambanks but move to faster, deeper areas of the river as they grow. Juvenile steelhead feed on a variety of aquatic and terrestrial insects and other small invertebrates. Juvenile steelhead rear throughout the year and may spend one to three years in freshwater before emigrating to the ocean. Smoltification, the physiological adaptation that juvenile salmonids undergo to tolerate saline waters, occurs in juveniles as they begin their downstream migration. Smolting steelhead generally emigrate from March to June (Barnhart, 1986; Reynolds et al., 1993).

A large portion of the Central Valley steelhead population spawns in tributaries of the Sacramento River located north of the Tisdale Bypass. Juveniles outmigrating from these tributaries would pass the Tisdale Weir. Adult steelhead may also attempt to migrate upstream via the Sutter Bypass and the Tisdale Weir when these bypasses are inundated. As such, Central Valley steelhead has a high potential to be seasonally present within the study area.

North American Green Sturgeon (*Acipenser medirostris*)

North American green sturgeon is federally listed as a threatened species and is a California species of special concern.

Habitat requirements of green sturgeon are poorly known. Indirect evidence indicates that green sturgeon spawn mainly in the Sacramento River; spawning has been reported in the mainstem as far north as Red Bluff. Spawning times in the Sacramento River are presumed to be from March through July, peaking from mid-April to mid-June. Adult sturgeon are in the river, presumably spawning, when temperatures range from 46°F to 57°F. Their preferred spawning substrate is large cobble, but substrates range from clean sand to bedrock. Eggs are broadcast-spawned and externally fertilized in relatively high water velocities and at depths of less than 10 feet.

Female green sturgeon produce 60,000 to 140,000 eggs, each approximately 0.15 inch in diameter. Eggs hatch approximately 196 hours after spawning, and larvae are 0.3 to 0.75 inch (8 to 19 mm) long. Juveniles range in size from less than one inch to almost five feet. Juveniles migrate to sea before two years of age, primarily during the summer and fall. They remain near estuaries at first, but may migrate considerable distances as they grow larger (SWRCB, 1999). Both juvenile and adult green sturgeon are benthic feeders and may also eat small fish.

Given their known spawning locations, this species is expected to be present in the Sacramento River at Tisdale Weir at least seasonally. Green sturgeon have also been known to attempt to migrate upstream through the Tisdale Bypass when it has been inundated. In summary, this species has a high potential to be seasonally present within the study area.

3.5.4 Non-Listed Special Status Wildlife

Western Pond Turtle (*Emys marmorata*)

Western pond turtle is a California species of special concern.

Western pond turtles are found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with suitable basking sites (Californiaherps, 2019). Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins, 2003). Western pond turtles nest and overwinter in areas of sparse vegetation comprised of grassland and forbs with less than 10 percent slopes, less than 492 feet (150 meters) from aquatic habitat (Rosenberg et al., 2009).

The canal within the northern portion of the Bypass east of Reclamation Road provides aquatic habitat for this species. The canal to the east of the project area and the ponded areas within the Bypass outside of the project area provide suitable aquatic habitat for this species. This species was not observed within the project area during the biological surveys in 2019. This species has a moderate potential to occur within the project area.

Western Red Bat (*Lasiurus blossevillii*)

Western red bat is a California species of special concern.

Western red bat roosts in forests and woodlands from sea level up through mixed conifer forests. The species feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. They roost primarily in the foliage of trees and shrubs.

Roost sites are often in edge habitats adjacent to streams, fields, or urban areas. Family groups roost together and nursery colonies are found with many females and their young.

The trees within the study area provide potential roosting habitat for this species in the trees located north and south of Tisdale Bypass. This species was not observed within the study area during the biological surveys in 2019. This species has a moderate potential to occur within the study area.

Pallid Bat (*Antrozous pallidus*)

The pallid bat is a California species of special concern.

Pallid bat occurs throughout California except in parts of the high Sierra and the northwestern corner of the state (Zeiner et al., 1990b). Pallid bat inhabits a variety of habitats, such as grasslands, shrublands, woodlands, and forests; however, it is most abundant in open, dry habitats with rocky areas for roosting. Pallid bats roost alone, in small groups, or in large groups (WBWG, 2005). Roosts include caves, crevices in rocky outcrops and cliffs, mines, trees, and various man-made structures (e.g., bridges, barns, porches), and generally have unobstructed entrances/exits and are high above the ground, warm, and inaccessible to terrestrial predators. Year-to-year and night-to-night roost reuse is common; however, bats may switch day roosts on a daily and seasonal basis.

The trees, Garmire Road Bridge, and Reclamation Road Bridge within the study area provide potential roosting habitat for this species. No pallid bats were observed during the biological surveys in 2019. This species has a moderate potential to occur within the study area.

Mountain Plover (*Charadrius montanus*)

Mountain plover is a California species of special concern.

Mountain plovers breed in the Great Plains and down to southeastern New Mexico and Texas. They migrate to various locations including California, Arizona, Texas, and north-central Mexico to winter. This species typically arrives in California starting in October. They typically forage and roost in flocks ranging from two to over 1,000 individuals throughout the winter. They often roost in depressions in the landscape, such as small mammal burrows, depressions caused by cattle hoof prints, or furrows. They are commonly observed to use grassland habitats and recently tilled fields as their overwintering habitat.

The study area occurs outside of the breeding range for this species. The annual grassland in the study area provides suitable overwintering habitat for this species. The Tisdale Bypass itself could provide potential habitat as well. No mountain plovers were observed during the biological surveys. The species is not expected to be present within the study area during the period of construction.

Central Valley Fall-/Late Fall-Run Chinook Salmon (*Oncorhynchus tshawytscha*)

Central Valley fall-/late fall-run Chinook salmon is a California species of special concern.

Adult Central Valley fall-/late fall-run Chinook salmon enter the Sacramento River system from September through January and spawn from October through February. During spawning, the female digs a redd (gravel nest) in which she deposits her eggs, which are then fertilized by the male. Newly emerged fry remain in shallow, lower-velocity edgewater, particularly where debris congregates and provides cover from predators (CDFG, 1998). The duration of egg incubation and time of fry emergence depends largely on water temperature. In general, eggs hatch after a three- to five-month incubation period, and alevins (yolk-sac fry) remain in the gravel until their yolk sacs are absorbed (two to three weeks).

Juveniles typically rear in freshwater (in their natal streams and the Sacramento–San Joaquin Delta) for 3 to 6 months (fall-run) and up to 12 months (late fall-run) before entering the ocean. Juveniles migrate downstream from January through June. Juvenile Chinook salmon prefer water depths of 0.5–3.3 feet and velocities of 0.26–1.64 feet per second (Raleigh et al., 1986). Important winter habitat for juvenile Chinook salmon includes flooded bars, side channels, and overbank areas with relatively low water velocities. Juvenile Chinook salmon have been found to rear successfully in floodplain habitat, which routinely floods but is dry at other times. Growth rates appear to be enhanced by the conditions found in floodplain habitat.

Cover structures, space, and food are necessary components for Chinook salmon rearing habitat. Suitable habitat includes areas with instream and overhead cover in the form of undercut banks, downed trees, and large, overhanging tree branches. The organic materials forming fish cover also help provide sources of food, in the form of both aquatic and terrestrial insects.

The Tisdale Bypass, when inundated, provides habitat for this species. As such, this species has a high potential to be seasonally present within the study area.

Migratory Bird Treaty Act (MBTA) and §3503.5 Department of Fish and Game Code

Migratory birds and other birds of prey are protected under 50 CFR 10 of the MBTA and/or Section 3503 of the California Fish and Game Code. The grassland and trees within the study area, the trees within the riparian forest adjacent to the study area, and Garmire Bridge and Reclamation Road Bridge within the study area provide nesting habitat for migratory birds and other birds of prey. Cliff swallow (*Petrochelidon pyrrhonota*) nests were observed beneath the deck of Garmire Road Bridge and Reclamation Road Bridge. Active red-tailed hawk (*Buteo jamaicensis*) and osprey (*Pandion haliaetus*) nests were observed within the riparian forest just outside of the project footprint during the biological surveys conducted in 2019. Nesting birds have a high potential to nest within and adjacent to the study area during the nesting season. The generally accepted nesting season is from February 15 through August 31.

3.6 Wildlife Movement Corridors

Movements of wildlife generally fall into three basic categories: (a) movements along corridors or habitat linkages associated with home range activities such as foraging, territory defense, and breeding; (b) dispersal movements—typically one-way movements (e.g., juvenile animals leaving areas where they were born and raised or individuals colonizing new areas), and; (c) temporal migration movements—these movements are essentially dispersal actions which involve a return to the place of origin (e.g., deer moving from winter grounds to summer ranges and fawning areas).

The Tisdale Bypass can function as a fish passage corridor for anadromous fish species, including Chinook salmon, steelhead and green sturgeon, when the Bypass is inundated from Sacramento River flows overtopping Tisdale Weir. However, the presence of the weir structure itself functions as a barrier to migration for adult fish attempting to migrate upstream via the Bypass except when the elevation of water within the Sacramento River is higher in elevation than the weir.

3.7 Critical Habitat for Listed Fish and Wildlife Species

The USFWS defines the term critical habitat in the federal Endangered Species Act as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

The portion of the Sacramento River west of the study is designated as critical habitat for Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, Central Valley steelhead, and green sturgeon. The Tisdale Bypass is considered critical habitat for Central Valley spring-run Chinook salmon and Central Valley steelhead. The eastern portion of Tisdale Bypass is part of a proposed critical habitat unit for western yellow-billed cuckoo.

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CHAPTER 4

References and Report Preparation

4.1 References

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4.2 Document Preparation

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Appendix A

Regulatory Context

Federal

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) (16 U.S. Code [USC] 153 et seq.), the Migratory Bird Treaty Act (MBTA) (16 USC 703–711), and the Bald and Golden Eagle Protection Act (16 USC 668). These regulations are described below.

Federal Endangered Species Act. Under the FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC § 1533(c)). Two federal agencies oversee the FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish and marine fish and mammals. Section 7 of the FESA mandates that federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The FESA prohibits the “take”⁴ of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

Section 10 requires the issuance of an “incidental take” permit before any public or private action may be taken that could take an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan (HCP) that would offset the take of individuals that may occur, incidental to implementation of a proposed project, by providing for the protection of the affected species.

Pursuant to the requirements of the FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project area and whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC § 1536(3), (4)).

Critical Habitat. The USFWS designates critical habitat for listed species under FESA. Critical habitat designations are specific areas within the geographic region that are occupied by a listed species that are determined to be critical to its survival and recovery in accordance with FESA. Federal entities issuing permits or acting as a lead agency must show that their actions do not negatively affect the critical habitat to the extent that it impedes the recovery of the species.

Migratory Bird Treaty Act. The MBTA (16 United States Code § 703 Supp. I, 1989) generally prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and nests, except as provided by the statute.

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act, enforced by the USFWS, makes it illegal to import, export, take (which includes molest or disturb), sell,

⁴ Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

purchase, or barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) or parts thereof.

U.S. Army Corps of Engineers

Clean Water Act

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Section 402

Under the CWA Section 402, the State Water Resources Control Board (SWRCB) has adopted a *General Construction Activity Storm Water Permit* (General Permit) for storm water discharges associated with any construction activity including clearing, grading, excavation reconstruction, and dredge and fill activities that results in the disturbance of at least one acre of total land area. The general permit requires the site owner to notify the state, to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), and to monitor the effectiveness of the plan.

De minimis discharge activities that are regulated by an individual or general NPDES permit, such as discharges resulting in construction dewatering, also require the General Order for Dewatering and Other Low Threat Discharge to Surface Waters Permit (Section 402). Project applicants/proponents should apply for this permit concurrently with the NPDES permit application.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Waters of the United States refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands. Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Waters of the United States are under the jurisdiction of the USACE and the Environmental Protection Agency (EPA).

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of NEPA, ESA, and the National Historic Preservation Act (NHPA)

have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

State

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), formerly identified as the California Department of Fish and Game, administers a number of laws and programs designed to protect fish and wildlife resources under the Fish and Game Code (FGC), such as the California Endangered Species Act (FGC Section 2050, et seq.), Fully Protected Species (FGC Section 3511), Native Plant Protection Act (FGC Sections 1900 to 1913) and Lake or Streambed Alteration Agreement Program (FGC Sections 1600 to 1616). These regulations are described below.

California Endangered Species Act. In 1984, the State of California implemented the California Endangered Species Act (CESA) which prohibits the take of State-listed endangered and threatened species; although, habitat destruction is not included in the State’s definition of take. Section 2090 requires State agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFW administers the act and authorizes take through California Fish and Game Code Section 2081 agreements (except for designated “fully protected species,” see below). Unlike its federal counterpart, CESA protections apply to candidate species that have been petitioned for listing.

Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (see below).

Fish and Game Code Section 3503. California Fish and Game Code Section 3503.5 provides that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. Construction activities that result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment and/or reproductive failure are considered a “take” by CDFW. Any loss of eggs, nests, or young or any activities resulting in nest abandonment would constitute a significant project impact.

Fully Protected Animals. Certain species are considered *fully protected*, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Under California Fish and Game Code, Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

It is possible for a species to be protected under the California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Native Plant Protection Act. California Fish and Game Code Section 1900–1913, also known as the Native Plant Protection Act, is intended to preserve, protect, and enhance endangered or rare

native plants in California. The act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more cause. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. The act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

California Rare Plant Ranking System. CDFW works in collaboration with the CNPS to maintain a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. These species are categorized by rarity in the California Rare Plant Rank (CRPR). This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CRPR species may receive consideration under CEQA review. The following identifies the definitions of the CRPR:

- Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere.
- Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
- Rank 3: Plants about which more information is needed - A Review List.
- Rank 4: Plants of limited distribution - A Watch List.

In general, plants with CRPR 1A, 1B, or 2 are considered to meet the criteria of CEQA Guidelines Section 15380. Additionally, with CRPR Rank 1A, 1B or 2 meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (California Endangered Species Act) of the California Fish and Game Code.

Lake or Streambed Alteration Program. The CDFW regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the California Fish and Game Code requires notification of the CDFW for lake or stream alteration activities. If, after notification is complete, the CDFW determines that the activity may substantially adversely affect an existing fish and wildlife resource, the CDFW has authority to issue a Streambed Alteration Agreement under Section 1603 of the California Fish and Game Code. Requirements to protect the integrity of biological resources and water quality are often conditions of Streambed Alteration Agreements. These may include avoidance or minimization of heavy equipment use within stream zones, limitations on work periods to avoid impacts to wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Species of Special Concern. CDFW maintains lists for candidate-endangered species and candidate-threatened species. California candidate species are afforded the same level of

protection as listed species. California also designates species of special concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or fully protected species, but may be added to official lists in the future. CDFW intends the species of special concern list to be a management tool for consideration in future land use decisions. The *Special Plants* list can be found online at: <http://www.dfg.ca.gov/biogeodata/cnddb.pdfs.spplants.pdf>; and the *Special Animals* list may be found online at: <http://www.dfg.ca.gov/biogeodata/cnddb.pdfs/spanimals.pdf>.

State Water Resources Control Board

Porter Cologne Water Quality Act. The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) (together “Boards”) are the principal state agencies with primary responsibility for the coordination and control of water quality. In the Porter-Cologne Water Quality Control Act (Porter-Cologne), the Legislature declared that the “state must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the state from degradation...” (California Water Code section 13000). Porter-Cologne grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the state. Waters of the State determined to be jurisdictional would require, if impacted, waste discharge permitting and/or a Clean Water Act Section 401 certification (in the case of the required USACE permit). The enforcement of the State's water quality requirements is not solely the purview of the Boards and their staff. Other agencies (e.g., the California Department of Fish and Wildlife) have the ability to enforce certain water quality provisions in state law.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specific criteria. These criteria have been modeled after the definition of FESA and the section of Fish and Game Code discussing rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily for situations in which a public agency is reviewing a project that may have a significant effect on a candidate species that has not yet been listed by CDFW or USFWS. CEQA provides the ability to protect species from potential project impacts until the respective agencies have the opportunity to designate the species protection.

CEQA also specifies the protection of other locally or regionally significant resources, including natural communities or habitats. Although natural communities do not presently have legal protection, CEQA requires an assessment of such communities and potential project impacts. Natural communities that are identified as sensitive in the CNDDb are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general and area plans often identify natural communities.

Yuba-Sutter Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP)

The Yuba-Sutter NCCP/HCP is a cooperative planning effort initiated by Yuba and Sutter counties in connection with improvements to Highways 99 and 70 and future development in the area surrounding those highways. The planning area currently encompasses most of these two counties. The draft plan currently covers four different plant species and fifteen wildlife species. Since the NCCP/HCP is still in development, there are no requirements for compliance.

Appendix B

Agency Lists and Special- Status Species Considered in the Study Area

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Common Name Scientific Name	Status (Federal/State/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Plants				
Ferris' milk-vetch <i>Astragalus tener</i> var. <i>Ferrisiae</i>	--/--/1B.1	Annual herb found in meadows and seeps (vernally mesic), valley and foothill grassland, which is occasionally subalkaline flats, from 7 to 250 feet.	Blooming period: April – May.	None. While the annual grassland provides habitat, this species was not observed during a focused rare plant survey conducted in May 2019.
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	--/--/1B.2	Annual herb found in saline or alkaline soils, chenopod scrub, meadows and seeps, valley and foothill grassland, which is occasionally sandy, from 0 to 1,840 feet. Known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Madera, Merced, San Joaquin, Solano, Stanislaus, Tulare, and Yolo counties.	Blooming period: April – October.	None. While the annual grassland provides habitat, this species occurs outside of the known extant geographical range and was not observed during the botanical inventories conducted in May and June 2019.
Palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	FE/CE/ 1B.1	Annual herb found in alkaline soils, Chenopod scrub, valley and foothill grassland from 16 to 510 feet. Known from Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo counties.	Blooming period: May – October	None. While the annual grassland provides habitat, this species occurs outside of the known extant geographical range and was not observed during the botanical inventories conducted in May and June 2019.
Recurved larkspur <i>Delphinium recurvatum</i>	--/--/1B.2	Perennial herb found in chenopod scrub, cismontane woodland, valley and foothill grassland from 10 to 2,600 feet.	Blooming period: March – June.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May and June 2019.
San Joaquin Spearscale <i>Extriplex joaquinana</i>	--/--/1B.2	Annual herb found in alkaline soils, chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet.	Blooming period: April – September.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May and June 2019.
Woolly rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	--/--/1B.2	Perennial herb found in marshes and swamps, which is occasionally freshwater, and often found in riprap on sides of levees, from 0 to 390 feet.	Blooming period: June – September.	None. While the seasonal riverine provides habitat, this species was not observed during a focused rare plant survey conducted in June 2019.
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--/--/1B.1	Annual herb found in marshes and swamps (coastal salt), playas, and vernal pools from 3 to 4,000 feet.	Blooming period: February – June	None. The study area does not provide habitat for this species.
Colusa layia <i>Layia septentrionalis</i>	--/--/1B.2	Annual found in sandy serpentine soils, chaparral, cismontane woodland, valley and foothill grassland from 330 to 3,600 feet.	Blooming period: April – May.	None. The study area is outside the known elevation range of this species.
Veiny monardella <i>Monardella venosa</i>	--/--/1B.1	Annual herb found in heavy clay, cismontane woodland, and valley and foothill grassland from 200 to 1,350 feet.	Blooming period: June – July.	None. The study area is outside the elevation range of this species.
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	--/--/1B.1	Annual herb found in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools from 16 to 5,710 feet.	Blooming period: April – July.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May and June 2019.

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Common Name Scientific Name	Status (Federal/State/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Plants (cont.)				
Hartweg's golden sunburst <i>Pseudobahia bahiifolia</i>	FE/CE/1B.1	Annual herb found in clay, often acidic soil; cismontane woodland, and valley and foothill grassland from 50 to 490 feet.	Blooming period: March– April.	None. The study area is outside the known current geographic distribution of this species.
Wright's Trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	--/--/2B.1	Annual herb found in alkaline soils, meadows and seeps, marshes and swamps, riparian forest, and vernal pools from 16 to 1,430 feet.	Blooming period: May – September.	None. While the riparian forest adjacent to the study area and the seasonal riverine within the study area provide habitat, this species was not observed during the botanical inventories conducted in May and June 2019.
Wildlife				
Invertebrates				
Crotch bumble bee <i>Bombus crotchii</i>	--/SC/--	Found in open grassland and scrub. Nests underground in abandoned rodent burrows. Colonies are annual and only the newly mated queens overwinter. The queens emerge from hibernation in early spring to search for nest sites. Host plant food includes milkweed (<i>Asclepias</i> sp.), pincushion (<i>Chaenactis</i> sp.), lupine (<i>Lupinus</i> sp.), bur clover (<i>Medicago</i> sp.), phacelia (<i>Phacelia</i> sp.), and sage (<i>Salvia</i> sp.)		Low. Although the annual grassland within the study area contains suitable host plants, given the area is disturbed by periodic mowing activities (and in prior years was in active agriculture), the potential for occurrence of this species is considered low.
Western bumble bee <i>Bombus occidentalis</i>	--/SC/--	Found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Nests underground in abandoned rodent burrows or other cavities, but may also nest above ground in structures including logs and railroad ties. Host plant food includes ceanothus (<i>Ceanothus</i> sp.), thistle (<i>Centaurea</i> sp.), rabbitbrush (<i>Chrysothamnus</i> sp.), geranium (<i>Geranium</i> sp.), gumplant (<i>Grindelia</i> sp.), lupine (<i>Lupinus</i> sp.), sweetclover (<i>Melilotus</i> sp.), monardella (<i>Monardella</i> sp.), blackberry (<i>Rubus</i> sp.), goldenrod (<i>Solidago</i> sp.), and clover (<i>Trifolium</i> sp.).		None. The study area is outside the currently known range of this species which is largely restricted to high elevations in the Sierra Nevada mountain range and along the coast.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	Adults emerge in spring until June. Exit holes visible year – round.	Moderate. No elderberry shrubs were observed within the study area during the biological resources survey conducted in May 2019. Elderberry shrubs could be located adjacent to the study area within the riparian forest.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT/--/--	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassy swale, earth slump, or basalt-flow depression pools.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	None. The study area does not provide suitable habitat for this species.

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Common Name Scientific Name	Status (Federal/State/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Invertebrates (cont.)				
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE/--/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	None. The study area does not provide suitable habitat for this species.
Amphibians/Reptiles				
California red-legged frog <i>Rana draytonii</i>	FT/CSC/--	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 4,920 feet.	Aquatic surveys of breeding sites between January and September. Optimally after April 15.	None. The study area is outside the known current geographic range of this species
California tiger salamander <i>Ambystoma californiense</i>	FT/CT/--	Found in vernal pools, ephemeral wetlands, and seasonal ponds, including constructed stockponds, in grassland and oak savannah plant communities from 10 to 3,450 feet.	Aquatic surveys of breeding sites between March and May.	None. The study area does not provide habitat for this species. The ponded areas within the Tisdale Bypass are known to support fish making it very unlikely they are used as breeding ponds.
Foothill yellow-legged frog <i>Rana boylei</i>	FC/SC/--	Inhabits partially shaded, rocky streams with perennial flow at low to moderate elevations, in areas of chaparral, open woodland, and forest. Elevation range extends from sea level to around 7,000 feet.	Surveys of breeding sites between April - June	None. The study area lacks suitable habitat for this species.
Giant garter snake <i>Thamnophis gigas</i>	FT/CT/--	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November – mid March).	Active outside of dormancy period November-mid March	Present. There is a past documented occurrence of this species within the study area. The drainage features along the Tisdale Bypass provide potential aquatic habitat for this species.
Western pond turtle <i>Emys marmorata</i>	--/CSC/--	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	Active outside of dormancy period November – February	Moderate. The ponded areas within the Tisdale Bypass provide potential habitat for this species.
Fish				
Delta smelt <i>Hypomesus transpacificus</i>	FT/SE/--	Found in open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	Spawn December – July. Present year – round in the Delta.	None. The study area is outside the distribution range of this species.

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Common Name Scientific Name	Status (Federal/State/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Fish (cont.)				
Central Valley DPS steelhead <i>Oncorhynchus mykiss</i>	FT/--/--	Inhabits rivers and streams tributary to the Sacramento - San Joaquin Rivers and Delta ecosystems.	Spawn in winter and spring.	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Central Valley ESU spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	FT/ST/--	Inhabits rivers and streams tributary to the Sacramento - San Joaquin Rivers and Delta ecosystems.	Spawn in late summer and fall.	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Sacramento River winter-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	FE/SE/--	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally inundated floodplains, rivers, tributaries, and Delta.	Spawn in late spring and summer	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Southern DPS of North American green sturgeon <i>Acipenser medirostris</i>	FT/--/--	The Southern Distinct Population Segment spawns in the Sacramento River basin. Juveniles and subadults rear in the Sacramento-San Joaquin Delta and Estuary	Spawn in spring and early summer.	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Breeding Birds				
Bank swallow <i>Riparia riparia</i>	--/CT/--	Nests in riverbanks and forages over riparian areas and adjacent uplands.	April – July	None. The study area does not provide suitable habitat for this species.
Burrowing owl <i>Athene cunicularia</i>	--/CSC/--	Forages in open plains, grasslands, and prairies; typically nests in abandoned small mammal burrows.	Year – round/Breeding season surveys between March and August.	Low. Although potential habitat is present, there are no documented observations of this species in the area.
California black rail <i>Laterallus jamaicensis coturniculus</i>	--/CT/--	Inhabits saltwater, brackish, and freshwater marshes. Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Year – round	None. The study area does not provide suitable habitat for this species.

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Common Name Scientific Name	Status (Federal/State/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Breeding Birds (cont.)				
Greater sandhill crane <i>Grus canadensis tabida</i>	--/CT/--	Breeds in open wetlands, fields, and prairies. In California, breeds in northeastern California and winters in the Central Valley.	September – February	None. While the study area occurs within the range for wintering, it occurs outside of the known geographic range for breeding.
Mountain plover <i>Charadrius montanus</i>	--/CSC/--	Inhabits short grasslands, freshly plowed fields, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents. Breeds in the mid-west. Winters in Central and Southern California.	December – February	None. While the study area occurs within the range for wintering, it occurs outside of the known geographic range for breeding. Therefore the species would not be present during the period of construction work.
Song sparrow ("Modesto" population) <i>Melospiza melodia</i>	--/CSC/--	Nests on the ground and in marshes. Inhabits grassland, chaparral, orchard, woodland, wetland, riparian, and scrub-shrub. Extirpated or possibly extirpated from Sutter County.	February – September	Low. While the annual grassland and riparian woodland provide nesting habitat, the study area occurs outside of the known extant geographic range for this species.
Swainson's hawk <i>Buteo swainsoni</i>	--/CT/--	Nest peripherally to valley riparian systems lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley.	March – October	High. The mature trees within and in the vicinity of the study area provide suitable nesting habitat and the annual grassland within and in the vicinity of the study area provide foraging habitat for this species.
Tricolored blackbird <i>Agelaius tricolor</i>	--/CT/-- (nesting colony)	Nests in dense blackberry, cattail, tules, bulrushes, sedges, willow, or wild rose within freshwater marshes. Nests in large colonies of at least 50 pairs (up to thousands of individuals).	Year – round	None. No suitable nesting habitat occurs within the study area for this species.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT/CE/--	Nests in riparian forests, along the broad, lower flood-bottoms of larger river systems, particularly in willows, cottonwoods, and with a lower story of blackberry, nettles, or wild grape.	June – August	Low. The study area provides very marginal foraging habitat even though the eastern portion of the study area is within the USFWS proposed critical habitat.
Mammals				
Western red bat <i>Lasiurus blossevillei</i>	--/CSC/--	Inhabits cismontane woodland, lower montane coniferous forest, riparian forest, and riparian woodland.	Year – round	Moderate. The trees within the riparian woodland provide roosting habitat for this species.
Marysville California kangaroo rat <i>Dipodomys californicus eximius</i>	--/CSC/--	Inhabits chaparral and valley and foothill grasslands. Known only in the Sutter Buttes area.	Year – round	None. The study area is outside the known distribution range of this species.
Pallid bat <i>Antrozous pallidus</i>	--/CSC/--	Inhabits deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky roosting areas.	Year – round	Moderate. The trees within the riparian woodland provide roosting habitat for this species.

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Common Name Scientific Name	Status (Federal/State/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Status Codes <div> Federal: FE = federal endangered FT = federal threatened FC = candidate PT = proposed threatened FPD = proposed for delisting FD = delisted EFH = Essential Fish Habitat </div> <div> California: CE = California state endangered CT = California state threatened CR = California state rare CSC = California species of special Concern CCT = California state threatened candidate CFP = California fully protected SC = California state candidate for listing </div> <div> CNPS Rank Categories: 1A = Plants presumed extirpated in California and either rare or extinct elsewhere 1B = Plants Rare, Threatened, or Endangered in California and elsewhere. 2A = Plants presumed extirpated in California, but more common elsewhere 2B = Plants Rare, Threatened, or Endangered in California, but more common elsewhere 3 = Plants about which more information is needed - A Review List 4 = Plants of limited distribution - A Watch List CNPS Code Extensions: .1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat) .2 = Fairly endangered in California (20-80% occurrences threatened) .3 = Not very endangered in California (less than 20% of occurrences threatened or no current threats known) </div>				
SOURCES: CDFW, 2019; CNPS, 2019; USFWS, 2019				



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2019-SLI-3115
Event Code: 08ESMF00-2019-E-09942
Project Name: Tisdale Bypass Sediment Removal 2020

September 23, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-3115

Event Code: 08ESMF00-2019-E-09942

Project Name: Tisdale Bypass Sediment Removal 2020

Project Type: ** OTHER **

Project Description: Sediment removal

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.02796544976536N121.7721935633258W>



Counties: Sutter, CA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	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. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	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. Species profile: 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. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: 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. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Hartweg's Golden Sunburst <i>Pseudobahia bahiifolia</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1704	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> https://ecos.fws.gov/ecp/species/3911#crithab	Proposed

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE *RareFind*

Query Summary:

Quad **IS** (Meridian (3912128) **OR** Grimes (3912118) **OR** Dunnigan (3812188) **OR** Sutter Buttes (3912127) **OR** Tisdale Weir (3912117) **OR** Kirkville (3812187) **OR** Sutter (3912126) **OR** Gilsizer Slough (3912116) **OR** Sutter Causeway (3812186))

Print

Close

CNDDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	955	11	None	Threatened	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Ambystoma californiense	California tiger salamander	Amphibians	AAAAA01180	1206	1	Threatened	Threatened	G2G3	S2S3	null	CDFW_WL-Watch List, IUCN_VU-Vulnerable	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland
Antigone canadensis tabida	greater sandhill crane	Birds	ABNMK01014	605	1	None	Threatened	G5T4	S2	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, USFS_S-Sensitive	Marsh & swamp, Meadow & seep, Wetland
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	1	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Ardea alba	great egret	Birds	ABNGA04040	43	1	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	155	1	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Dicots	PDFAB0F8R3	18	3	None	None	G2T1	S1	1B.1	BLM_S-Sensitive	Meadow & seep, Valley & foothill grassland, Wetland
Atriplex cordulata var. cordulata	heartscale	Dicots	PDCHE040B0	66	1	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub, Meadow & seep, Valley & foothill grassland
		Insects	IIHYM24480	234	1	None		G3G4	S1S2	null	null	null

Bombus crotchii	Crotch bumble bee						Candidate Endangered					
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	769	1	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	Birds	ABNJB05035	19	5	Delisted	None	G5T3	S3	null	CDFW_WL-Watch List	Artificial standing waters, Sacramento/San Joaquin standing waters, Valley & foothill grassland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2518	82	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Charadrius montanus	mountain plover	Birds	ABNNB03100	90	2	None	None	G3	S2S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Chenopod scrub, Valley & foothill grassland
Chloropyron palmatum	palmete-bracted bird's-beak	Dicots	PDSCR0J0J0	25	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chenopod scrub, Meadow & seep, Valley & foothill grassland, Wetland
Cicindela hirticollis abrupta	Sacramento Valley tiger beetle	Insects	IICOL02106	6	1	None	None	G5TH	SH	null	null	Sand shore
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	2	None	None	G3	S2.1	null	null	Marsh & swamp, Wetland
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	156	2	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Riparian forest
Delphinium recurvatum	recurved larkspur	Dicots	PDRAN0B1J0	120	2	None	None	G2?	S2?	1B.2	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden	Chenopod scrub, Cismontane woodland, Valley & foothill grassland
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	6	Threatened	None	G3T2	S2	null	null	Riparian scrub
Dipodomys californicus eximius	Marysville California kangaroo rat	Mammals	AMAFD03071	2	2	None	None	G4T1	S1	null	CDFW_SSC-Species of Special Concern	Chaparral, Valley & foothill grassland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1375	1	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters,

												South coast standing waters, Wetland
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	521	1	None	None	G5	S3	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Lower montane coniferous forest, North coast coniferous forest, Upper montane coniferous forest
Extriplex joaquinana	San Joaquin spearscale	Dicots	PDCHE041F3	127	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa, Chenopod scrub, Meadow & seep, Valley & foothill grassland
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	Riparian	CTT61410CA	56	4	None	None	G2	S2.1	null	null	Riparian forest
Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	Riparian	CTT61420CA	68	7	None	None	G2	S2.2	null	null	Riparian forest
Great Valley Willow Scrub	Great Valley Willow Scrub	Riparian	CTT63410CA	18	1	None	None	G3	S3.2	null	null	Riparian scrub
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Dicots	PDMAL0H0R3	173	10	None	None	G5T3	S3	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_UCBBG-UC Berkeley Botanical Garden	Freshwater marsh, Marsh & swamp, Wetland
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	128	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	3	None	None	G5	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Dicots	PDAST5L0A1	111	1	None	None	G4T2	S2	1B.1	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Alkali playa, Marsh & swamp, Salt marsh, Vernal pool, Wetland
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Layia septentrionalis	Colusa layia	Dicots	PDAST5N0F0	57	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_UCBBG-UC Berkeley Botanical Garden	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Lepidurus packardii	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	325	1	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland,

												Vernal pool, Wetland
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	438	1	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
Melospiza melodia	song sparrow ("Modesto" population)	Birds	ABPBXA3010	92	2	None	None	G5	S3?	null	CDFW_SSC-Species of Special Concern	null
Monardella venosa	veiny monardella	Dicots	PDLAM18082	4	1	None	None	G1	S1	1B.1	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden, SB_UCBBG-UC Berkeley Botanical Garden	Cismontane woodland, Valley & foothill grassland
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	265	1	None	None	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_LM-Low-Medium Priority	Lower montane coniferous forest, Riparian forest, Riparian woodland, Upper montane coniferous forest
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Dicots	PDPLM0C0E1	58	2	None	None	G4T2	S2	1B.1	BLM_S-Sensitive	Cismontane woodland, Lower montane coniferous forest, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	2	None	None	G3	S3.1	null	null	Vernal pool, Wetland
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	4	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	Fish	AFCHA0205A	13	1	Threatened	Threatened	G5	S1	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Perognathus inornatus	San Joaquin Pocket Mouse	Mammals	AMAFD01060	127	1	None	None	G2G3	S2S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Cismontane woodland, Mojavean desert scrub, Valley & foothill grassland
Pseudobahia bahiifolia	Hartweg's golden sunburst	Dicots	PDAST7P010	27	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Cismontane woodland, Valley & foothill grassland
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2468	1	None	Candidate Threatened	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Riparia riparia	bank swallow	Birds	ABPAU08010	298	18	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Spinus lawrencei	Lawrence's goldfinch	Birds	ABPBY06100	4	2	None	None	G3G4	S3S4	null	IUCN_LC-Least Concern, NABCI_YWL-Yellow Watch List, USFWS_BCC-Birds of	Broadleaved upland forest, Chaparral, Pinon & juniper woodlands, Riparian woodland

											Conservation Concern	
Thamnophis gigas	giant gartersnake	Reptiles	ARADB36150	366	51	Threatened	Threatened	G2	S2	null	IUCN_VU- Vulnerable	Marsh & swamp, Riparian scrub, Wetland
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Dicots	PDAST9F031	9	2	None	None	G4T3	S1	2B.1	null	Marsh & swamp, Meadow & seep, Riparian forest, Vernal pool, Wetland

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

12 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quads 3912128, 3912127, 3912126, 3912118, 3912117, 3912116, 3812188 3812187 and 3812186;

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Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Cryptantha rostellata	red-stemmed cryptantha	Boraginaceae	annual herb	Apr-Jun	4.2	S3	G4
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3

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Questions and Comments

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Appendix C

Plant Species Observed During Biological Survey

TABLE C-1
PLANT SPECIES OBSERVED IN THE STUDY AREA

Family	Scientific Name	Common Name	*
Asteraceae	<i>Xanthium strumarium</i>	Cocklebur	N
Asteraceae	<i>Artemisia douglasiana</i>	Douglas' sagewort	N
Asteraceae	<i>Silybum marianum</i>	Milk thistle	I
Boraginaceae	<i>Plagiobothrys stipitatus</i>	stalked poppcornflower	N
Brassicaceae	<i>Lepidium latifolium</i>	Perennial pepperweed	I
Cyperaceae	<i>Eleocharis macrostachya</i>	pale spikerush	N
Equisetaceae	<i>Equisetum hyemale</i>	rough horsetail	N
Fagaceae	<i>Quercus lobata</i>	Valley oak	N
Marsileaceae	<i>Marsilea quadrifolia</i>	European water clover	–
Poaceae	<i>Distichlis spicata</i>	Salt grass	N
Poaceae	<i>Lolium multiflorum</i>	Italian rye grass	I
Poaceae	<i>Elymus glaucus</i>	Blue rye grass	N
Poaceae	<i>Hordeum murinum</i>	Wall barley	I
Poaceae	<i>Avena fatua</i>	Common wild oat	I
Poaceae	<i>Sorghum halepense</i>	Johnson grass	–
Polygonaceae	<i>Rumex</i> spp.	dock	–
Portulacaceae	<i>Portulaca</i> spp.	Purslane	–
Rosaceae	<i>Rosa</i> spp.	Wild rose	–
Rosaceae	<i>Rubus armeniacus</i>	Himalayan blackberry	I
Salicaceae	<i>Populus fremontii</i> ssp. <i>fremontii</i>	Alamo or Fremont cottonwood	N
Salicaceae	<i>Salix exigua</i>	Narrowleaf willow	N
Sapindaceae	<i>Acer negundo</i>	Box elder	N
Verbenaceae	<i>Verbena</i> spp.	Vervain	–

NOTES:
 *N=Native; I=Invasive; -- = Unknown

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Appendix D

Wildlife Species Observed During Biological Survey

TABLE D-1
WILDLIFE SPECIES OBSERVED IN THE STUDY AREA

Family	Scientific Name	Common Name
Accipitridae	<i>Buteo jamaicensis</i>	red-tailed hawk
Ardeidae	<i>Ardea alba</i>	great egret
Ardeidae	<i>Ardea herodias</i>	great blue heron
Cathartidae	<i>Cathartes aura</i>	turkey vulture
Charadriidae	<i>Charadrius vociferus</i>	Killdeer
Columbidae	<i>Zenaida macroura</i>	Mourning dove
Corvidae	<i>Aphelocoma californica</i>	California scrub-jay
Corvidae	<i>Corvus corax</i>	common raven
Corvidae	<i>Corvus brachyrhynchos</i>	American crow
Hirundinidae	<i>Hirundo rustica</i>	Barn swallow
Hirundinidae	<i>Petrochelidon pyrrhonota</i>	Cliff swallow
Icteridae	<i>Sturnella neglecta</i>	Western meadowlark
Mimidae	<i>Mimus polyglottos</i>	Mockingbird
Pandionidae	<i>Pandion haliaetus</i>	osprey
Turdidae	<i>Sialia mexicana</i>	western bluebird
Tyrannidae	<i>Tyrannus verticalis</i>	western kingbird

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Appendix E

Study Area Photographs



Tisdale Bypass Sediment Removal 2020

Photo 1

Tisdale Weir (facing north). October 19, 2018



Tisdale Bypass Sediment Removal 2020

Photo 2

Tisdale Bypass (facing north). May 21, 2019



Tisdale Bypass Sediment 2020

Photo 3

Tisdale Bypass (facing east). May 21, 2019



Tisdale Bypass Sediment Removal 2020

Photo 4

Tisdale Bypass. May 21, 2019



Tisdale Bypass Sediment Removal 2020

Photo 5

Lower spot within the Eastside Bypass. May 21, 2019



Tisdale Bypass Sediment Removal 2020

Photo 6

Vegetation in Bypass (facing north). May 21, 2019



Tisdale Bypass Sediment Removal 2020

Photo 7
Riparian forest (facing northeast). May 21, 2019



Tisdale Bypass Sediment Removal 2020

Photo 8
Annual grassland (facing north). October 19, 2018



Tisdale Bypass Sediment Removal 2020

Photo 9
Swallow nests under bridge beneath Garmire Road.
October 19, 2019



Tisdale Bypass Sediment Removal 2020

Photo 10
Swallow nests beneath bridge under Reclamation Road.
May 21, 2019

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Appendix D

Biological Resources Special- Status Species with Potential to Occur

TABLE D-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status (Federal/ State/ CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Plants				
Ferris' milk-vetch <i>Astragalus tener</i> var. <i>Ferrisiae</i>	--/--/1B.1	Annual herb found in meadows and seeps (vernally mesic), valley and foothill grassland, which is occasionally subalkaline flats, from 7 to 250 feet.	Blooming period: April – May.	None. While the annual grassland provides habitat, this species was not observed during a focused rare plant survey conducted in May 2019.
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	--/--/1B.2	Annual herb found in saline or alkaline soils, chenopod scrub, meadows and seeps, valley and foothill grassland, which is occasionally sandy, from 0 to 1,840 feet. Known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Madera, Merced, San Joaquin Solano, Stanislaus, Tulare, and Yolo counties.	Blooming period: April – October.	None. While the annual grassland provides habitat, this species occurs outside of the known extant geographical range and was not observed during the botanical inventories conducted in May June, and July 2019.
Palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	FE/CE/ 1B.1	Annual herb found in alkaline soils, Chenopod scrub, valley and foothill grassland from 16 to 510 feet. Known from Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo counties.	Blooming period: May – October.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May June, and July 2019.
Recurved larkspur <i>Delphinium recurvatum</i>	--/--/1B.2	Perennial herb found in chenopod scrub, cismontane woodland, valley and foothill grassland from 10 to 2,600 feet.	Blooming period: March – June.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May and June 2019.
San Joaquin Spearscale <i>Extriplex joaquinana</i>	--/--/1B.2	Annual herb found in alkaline soils, chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet.	Blooming period: April – September.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May June, and July 2019.
Woolly rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	--/--/1B.2	Perennial herb found in marshes and swamps, which is occasionally freshwater, and often found in riprap on sides of levees, from 0 to 390 feet.	Blooming period: June – September.	None. While the seasonal riverine provides habitat, this species was not observed during a focused rare plant survey conducted in June and July 2019.
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--/--/1B.1	Annual herb found in marshes and swamps (coastal salt), playas, and vernal pools from 3 to 4,000 feet.	Blooming period: February – June.	None. The project area does not provide habitat for this species.
Colusa layia <i>Layia septentrionalis</i>	--/--/1B.2	Annual found in sandy serpentine soils, chaparral, cismontane woodland, valley and foothill grassland from 330 to 3600 feet.	Blooming period: April – May.	None. The project area is outside the known elevation range of this species.
Veiny monardella <i>Monardella venosa</i>	--/--/1B.1	Annual herb found in heavy clay, cismontane woodland, and valley and foothill grassland from 200 to 1,350 feet.	Blooming period: June – July.	None. The project area is outside the elevation range of this species.

TABLE D-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status (Federal/ State/ CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Plants (cont.)				
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	--/--/1B.1	Annual herb found in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools from 16 to 5,710 feet.	Blooming period: April – July.	None. While the annual grassland provides habitat, this species was not observed during the botanical inventories conducted in May and June 2019.
Hartweg's golden sunburst <i>Pseudobahia bahiifolia</i>	FE/CE/1B.1	Annual herb found in clay, often acidic soil; cismontane woodland, and valley and foothill grassland from 50 to 490 feet.	Blooming period: March– April.	None. The project area is outside the known current geographic distribution of this species.
Wright's Trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	--/--/2B.1	Annual herb found in alkaline soils, meadows and seeps, marshes and swamps, riparian forest, and vernal pools from 16 to 1,430 feet.	Blooming period: May – September.	None. While the riparian forest adjacent to the project area and the seasonal riverine within the project area provide habitat, this species was not observed during the botanical inventories conducted in May and June 2019.
Wildlife				
Invertebrates				
Crotch bumble bee <i>Bombus crotchii</i>	--/SC/--	Found in open grassland and scrub. Nests underground in abandoned rodent burrows. Colonies are annual and only the newly mated queens overwinter. The queens emerge from hibernation in early spring to search for nest sites. Host plant food includes milkweed (<i>Asclepias</i> sp.), pincushion (<i>Chaenactis</i> sp.), lupine (<i>Lupinus</i> sp.), bur clover (<i>Medicago</i> sp.), phacelia (<i>Phacelia</i> sp.), and sage (<i>Salvia</i> sp.)		Low. Although the annual grassland within the project area contains suitable host plants, given the area is disturbed by periodic mowing activities (and in prior years was in active agriculture), the potential for occurrence of this species is considered low.
Western bumble bee <i>Bombus occidentalis</i>	--/SC/--	Found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Nests underground in abandoned rodent burrows or other cavities, but may also nest above ground in structures including logs and railroad ties. Host plant food includes ceanothus (<i>Ceanothus</i> sp.), thistle (<i>Centaurea</i> sp.), rabbitbrush (<i>Chrysothamnus</i> sp.), geranium (<i>Geranium</i> sp.), gumplant (<i>Grindelia</i> sp.), lupine (<i>Lupinus</i> sp.), sweetclover (<i>Melilotus</i> sp.), monardella (<i>Monardella</i> sp.), blackberry (<i>Rubus</i> sp.), goldenrod (<i>Solidago</i> sp.), and clover (<i>Trifolium</i> sp.).		None. The project area is outside the currently known range of this species which is largely restricted to high elevations in the Sierra Nevada mountain range and along the coast.

TABLE D-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status (Federal/ State/ CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Invertebrates (cont.)				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	Adults emerge in spring until June. Exit holes visible year – round.	Moderate. No elderberry shrubs were observed within the project area during the biological resources survey conducted in May 2019, but shrubs could be present adjacent to project area.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT/--/--	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	None. The project area does not provide suitable habitat for this species.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE/--/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	None. The project area does not provide suitable habitat for this species.
Fish				
Delta smelt <i>Hypomesus transpacificus</i>	FT/SE/--	Found in open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	Spawn December – July. Present year – round in the Delta.	None. The project area is outside the distribution range of this species.
Central Valley DPS steelhead <i>Oncorhynchus mykiss</i>	FT/--/--	Inhabits rivers and streams tributary to the Sacramento - San Joaquin Rivers and Delta ecosystems.	Spawn in winter and spring.	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Central Valley ESU spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	FT/ST/--	Inhabits rivers and streams tributary to the Sacramento - San Joaquin Rivers and Delta ecosystems.	Spawn in late summer and fall.	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.

TABLE D-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status (Federal/ State/ CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Fish (cont.)				
Sacramento River winter-run Chinook salmon <i>Oncorhynchus</i> <i>tshawytscha</i>	FE/SE/--	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally inundated floodplains, rivers, tributaries, and Delta.	Spawn in late spring and summer	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Southern DPS of North American green sturgeon <i>Acipenser</i> <i>medirostris</i>	FT/--/--	The Southern Distinct Population Segment spawns in the Sacramento River basin. Juveniles and subadults rear in the Sacramento-San Joaquin Delta and Estuary	Spawn in spring and early summer.	High. This species is seasonally present in the mainstem Sacramento River and could be present in the Tisdale Bypass during and immediately following events in which the Tisdale Weir is overtopped, or when flows in the Sutter Bypass back up into Tisdale Bypass.
Amphibians/Reptiles				
California red- legged frog <i>Rana draytonii</i>	FT/CSC/- -	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 4,920 feet.	Aquatic surveys of breeding sites between January and September. Optimally after April 15.	None. The project area is outside the known current geographic range of this species
California tiger salamander <i>Ambystoma</i> <i>californiense</i>	FT/CT/--	Found in vernal pools, ephemeral wetlands, and seasonal ponds, including constructed stockponds, in grassland and oak savannah plant communities from 10 to 3,450 feet.	Aquatic surveys of breeding sites between March and May.	None. The project area does not provide habitat for this species. The ponded areas within the Tisdale Bypass are known to support fish making it very unlikely they are used as breeding ponds.
Foothill yellow- legged frog <i>Rana boylei</i>	FC/SC/--	Inhabits partially shaded, rocky streams with perennial flow at low to moderate elevations, in areas of chaparral, open woodland, and forest. Elevation range extends from sea level to around 7,000 feet.	Surveys of breeding sites between April - June	None. The project area lacks suitable habitat for this species.
Giant garter snake <i>Thamnophis gigas</i>	FT/CT/--	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November – mid March).	Active outside of dormancy period November-mid March	High. There is a past documented occurrence of this species within the project area. The drainage features along the Tisdale Bypass provide potential aquatic habitat for this species.

TABLE D-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status (Federal/ State/ CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Amphibians/Reptiles (cont.)				
Western pond turtle <i>Emys marmorata</i>	--/CSC/--	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	Active outside of dormancy period November – February	Moderate. The canal within the Tisdale Bypass provides aquatic habitat for this species. The canal and permanent water adjacent to the project area provide aquatic habitat for this species.
Breeding Birds				
Bank swallow <i>Riparia riparia</i>	--/CT/--	Nests in riverbanks and forages over riparian areas and adjacent uplands.	April – July	None. The project area does not provide suitable habitat for this species.
California black rail <i>Laterallus jamaicensis coturniculus</i>	--/CT/--	Inhabits saltwater, brackish, and freshwater marshes. Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Year – round	None. The project area does not provide suitable habitat for this species.
Greater sandhill crane <i>Antigone canadensis tabida</i>	--/CT/--	Breeds in open wetlands, fields, and prairies. In California, breeds in northeastern California and winters in the Central Valley.	September – February	None. While the project area occurs within the range for wintering, it occurs outside of the known geographic range for breeding.
Mountain plover <i>Charadrius montanus</i>	--/CSC/--	Inhabits short grasslands, freshly plowed fields, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents. Breeds in the mid-west. Winters in Central and Southern California.	December – February	None. While the project area occurs within the range for wintering, it occurs outside of the known geographic range for breeding. Therefore the species would not be present during the period of construction work.
Song sparrow ("Modesto" population) <i>Melospiza melodia</i>	--/CSC/--	Nests on the ground and in marshes. Inhabits grassland, chaparral, orchard, woodland, wetland, riparian, and scrub-shrub. Extirpated or possibly extirpated from Sutter County.	February – September	Low. While the annual grassland and riparian woodland provide nesting habitat, the project area occurs outside of the known extant geographic range for this species.
Swainson's hawk <i>Buteo swainsoni</i>	--/CT/--	Nest peripherally to valley riparian systems lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley.	March – October	High. The mature trees within and in the vicinity of the project area provide suitable nesting habitat and the annual grassland within and in the vicinity of the project area provide foraging habitat for this species.
Tricolored blackbird <i>Agelaius tricolor</i>	--/CT/-- (nesting colony)	Nests in dense blackberry, cattail, tules, bulrushes, sedges, willow, or wild rose within freshwater marshes. Nests in large colonies of at least 50 pairs (up to thousands of individuals).	Year – round	None. No suitable nesting habitat occurs within the project area for this species.

TABLE D-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status (Federal/ State/ CRPR)	Habitat Requirements	Identification/ Survey Period	Potential to Occur
Wildlife (cont.)				
Breeding Birds (cont.)				
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT/CE/--	Nests in riparian forests, along the broad, lower flood-bottoms of larger river systems, particularly in willows, cottonwoods, and with a understory of blackberry, nettles, or wild grape.	June – August	Low. The project area provides very marginal foraging habitat even though the eastern portion of the project area is within the USFWS proposed critical habitat.
Mammals				
Western red bat <i>Lasiurus blossevillei</i>	--/CSC/--	Inhabits cismontane woodland, lower montane coniferous forest, riparian forest, and riparian woodland.	Year – round	Moderate. The trees within the riparian woodland provide roosting habitat for this species.
Marysville California kangaroo rat <i>Dipodomys californicus eximius</i>	--/CSC/--	Inhabits chaparral and valley and foothill grasslands. Known only in the Sutter Buttes area.	Year – round	None. The project area is outside the known distribution range of this species.
Pallid bat <i>Antrozous pallidus</i>	--/CSC/--	Inhabits deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky roosting areas.	Year – round	Moderate. The trees within the riparian woodland provide roosting habitat for this species.
Status Codes				
<div> <div> Federal: FE = federal endangered FT = federal threatened FC = candidate PT = proposed threatened FPD = proposed for delisting FD = delisted EFH = Essential Fish Habitat </div> <div> California: CE = California state endangered CT = California state threatened CR = California state rare CSC = California species of special Concern CCT = California state threatened candidate CFP = California fully protected SC = California state candidate for listing </div> <div> CNPS Rank Categories: 1A = Plants presumed extirpated in California and either rare or extinct elsewhere 1B = Plants Rare, Threatened, or Endangered in California and elsewhere. 2A = Plants presumed extirpated in California, but more common elsewhere 2B = Plants Rare, Threatened, or Endangered in California, but more common elsewhere 3 = Plants about which more information is needed - A Review List 4 = Plants of limited distribution - A Watch List CNPS Code Extensions: .1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat) .2 = Fairly endangered in California (20-80% occurrences threatened) .3 = Not very endangered in California (less than 20% of occurrences threatened or no current threats known) </div> </div>				

SOURCES: CDFW, 2019; CNPS, 2019; USFWS, 2019