

**APPENDIX D**  
**BIOLOGICAL ASSESSMENT**

# County Road R (11C-0011) over Glenn-Colusa Canal Bridge Replacement Project



## Biological Assessment

Glenn County, California  
Township 20N, Range 2W, Section 17 and 18  
USGS *Glenn, California* 7.5-Minute Quadrangle  
03-GLE-0-CR  
Federal Aid No. BRLO-5911(057)

**April 2021**




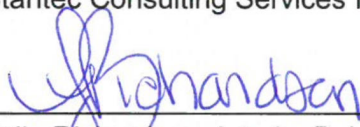
**County Road R (11C-0011) over  
Glenn-Colusa Canal Bridge Replacement Project  
Biological Assessment**

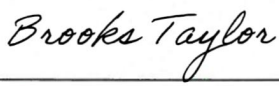
Glenn County, California  
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USGS Glenn, California 7.5-Minute Quadrangle  
03-GLE-0-CR  
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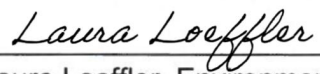
**April 2021**

STATE OF CALIFORNIA  
Department of Transportation

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## **Executive Summary**

The purpose of this biological assessment (BA) is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species. This BA has been prepared for the California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), under its assumption of responsibility at 23 United States Code (USC) 326 or 23 USC 327. The BA is also prepared in accordance with 50 CFR 402, legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S.C. 1536(c)) and with FHWA and Caltrans regulation, policy, and guidance. The document presents technical information upon which later decisions regarding project effects are developed.

The Glenn County Public Works Agency (County) is proposing to replace the existing County Road R Bridge over Glenn-Colusa Canal (No. 11C-0011) with a new bridge to improve public safety (proposed action). The existing bridge is located on County Road R approximately 5.3 miles east of Interstate 5 and approximately 8.5 miles northeast of the town of Willows in Glenn County, California. Due to the aging structure and decaying members, County Road R Bridge is on the Eligible Bridge List with a sufficiency rating of 37.9; and is eligible for replacement under the Caltrans Highway Bridge Program administered by Caltrans.

### **Federally Listed Species and Critical Habitat Units**

A total of eight federally listed species were reviewed, but only one species, federally listed as threatened giant garter snake (*Thamnophis gigas*) (GGS), was identified as having the potential to occur within the project limits or vicinity. Critical habitat has not been designated for GGS; therefore, the project would have no effect on critical habitat.

### **Species Presence, Temporary and Permanent Effects**

Aquatic habitat for GGS is present in the irrigation canal, vegetated ditches, and rice fields. Upland refugia habitat is present in the barren/ruderal habitat adjacent to County Road R. Anticipated effect on GGS habitats are minimal and are summarized below in Table S-1.

**Table S-1. Summary of Anticipated Giant Garter Snake Habitat Impacts**

Habitat Type	Acres
<b>Permanent Impacts</b>	
Upland Refugia Habitat	0.08
Aquatic Habitat (Rice Field/Managed Wetland)	0.094
Aquatic Habitat (Vegetated Ditches)	0.035
<b>Total Permanent Impacts</b>	<b>0.209</b>
<b>Temporary Impacts</b>	
Upland Refugia Habitat	0.97
Aquatic Habitat (Glenn-Colusa Canal)	0.468
Aquatic Habitat (Vegetated Ditches)	0.084
<b>Total Temporary Impacts</b>	<b>1.522</b>

**Determinations**

Based on the data collected for and presented in this BA, and the planned implementation of the conservation measures described herein, Caltrans has determined that the proposed project *may affect, and is likely to adversely affect* GGS. Caltrans has determined that the proposed project would have no effect on all other federally listed species.

## Chapter 1. Introduction

### 1.1. Purpose and Need of the Proposed Action

This biological assessment (BA) has been prepared for the California Department of Transportation (Caltrans) by the Glenn County Public Works Agency (County), in accordance with legal requirements set forth under Section 7 (a) (2) of the Federal Endangered Species Act (ESA) (16 United States Code 1536[c]) and with Federal Highway Administration (FHWA) and Caltrans regulation, policy and guidance. The purpose of this BA is to review the proposed County Road R Over Glenn-Colusa Canal (No. 11C -0011) Bridge Replacement Project (proposed action) in sufficient detail to determine to what extent it may result in effects on threatened, endangered, or proposed species and designated/proposed critical habitat.

The purpose of the project is to replace the functionally obsolete bridge with a new bridge that will meet current standards. The project is needed to improve vehicle safety on County Road R and ensure safe, dependable route for traffic crossing the Glenn-Colusa Canal. The County has applied for federal funding administered by Caltrans. Caltrans, acting on behalf of the FHWA, is serving as the lead agency for purposes of consultations under the ESA and compliance with other federal laws. The proposed action may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (Corps). If so, as a federal agency, the Corps must also document compliance with the ESA. The Corps may enter into an agreement with Caltrans to allow Caltrans to conduct the consultation with the USFWS on its behalf.

### 1.2. Species and Critical Habitats Assessed

On February 25, 2021, a list (Consultation Code: 08ESMF00-2019-SLI-0499) of federally listed species and critical habitat with the potential to occur in the action area was obtained from the U.S. Fish and Wildlife Service (USFWS) (Appendix A). The following listed and proposed species and/or designated or proposed critical habitats were identified on the updated federal species list and were considered during this analysis.

#### 1.2.1. THREATENED AND ENDANGERED SPECIES

- Conservancy fairy shrimp (*Branchinecta conservatio*) **Endangered**
- Vernal pool tadpole shrimp (*Lepidurus packardii*) **Endangered**
- Vernal pool fairy shrimp (*Branchinecta lynchi*) **Threatened**
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) **Threatened**
- Delta smelt (*Hypomesus transpacificus*) **Threatened**
- California red-legged frog (*Rana draytonii*) **Threatened**
- Giant garter snake (*Thamnophis gigas*) **Threatened**
- Yellow-billed cuckoo (Western U.S. DPS) (*Coccyzus americanus*) **Threatened**

### 1.2.2. CRITICAL HABITAT

The project addressed within this document is not located within federally designated critical habitat.

### 1.2.3. PROPOSED SPECIES

Federally proposed species were not identified on the updated federal species list and were not considered during this analysis.

### 1.2.4. PROPOSED CRITICAL HABITAT

The project addressed within this document does not fall within proposed critical habitat for any federally listed species.

The listed species and designated critical habitat identified on the updated federal species list are detailed in Table 1 with effect determinations and rationale.

**Table 1. Threatened, Endangered and Proposed Species and Designated Critical Habitat and Effect Determinations**

Threatened, Endangered, Proposed Species, or Designated Critical Habitat	Scientific Name	Listing Status	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E	No	No	No Effect No suitable habitat is present within the action area.
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	E	No	No	No Effect No suitable habitat is present within the action area.
vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	E	No	No	No Effect No suitable habitat is present within the action area.
valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	No	No	No Effect No suitable habitat is present within the action area.
Delta smelt	<i>Hypomesus transpacificus</i>	T	No	No	No Effect Action area is not within the current known range of the species.

Threatened, Endangered, Proposed Species, or Designated Critical Habitat	Scientific Name	Listing Status	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
California red-legged frog	<i>Rana draytonii</i>	T	No	No	No Effect The action area does not support suitable aquatic habitat for this species.
giant garter snake	<i>Thamnophis gigas</i>	T	No	No	<b>May affect, likely to adversely affect</b> Suitable aquatic habitat and upland refugia is present within the action area. Species may be present when construction related activities are taking place.
yellow-billed cuckoo (Western U.S. DPS)	<i>Coccyzus americanus</i>	T	No	No	No Effect Action area is not within the current known range of the species. No suitable foraging habitat is present within the action area for migratory stopover habitat.

Key: T = Threatened, E = Endangered

### 1.2.5. FEDERALLY LISTED PLANT SPECIES

Federally listed plant species were not identified on the updated federal species list and were not considered during this analysis.

### 1.2.6. FEDERALLY LISTED WILDLIFE SPECIES

Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Delta smelt, California red-legged frog, and yellow-billed cuckoo (Western U.S. DPS) do not have potential to occur within the action area due to the action area's location outside the current or historical known range of these species or the overall lack of potential habitat and, therefore, were concluded to have a "No Effect" finding. These seven species are not discussed further in this BA.



GGs has the potential to occur in the action area and, therefore, is discussed in further detail in this BA. A determination of *may affect, likely to adversely affect* was concluded for this species and is further discussed in Chapter 4.

### **1.3. Authorities and Discretion**

Below is a description of the federal and state regulatory requirements under which the project is being proposed, implemented, maintained, regulated, or otherwise affected.

#### **1.3.1. FEDERAL ENDANGERED SPECIES ACT**

The federal Endangered Species Act of 1973 was established to protect and recover imperiled species and the ecosystems upon which they depend. The USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service administer the federal Endangered Species Act and are responsible for consulting with other federal agencies under Section 7 to ensure that their actions do not jeopardize the continued existence of plant or animal species listed, proposed for listing, that are candidates for listing as threatened or endangered under the federal Endangered Species Act, or that would result in the destruction or adverse modification of designated critical habitat for these species.

#### **1.3.2. FEDERAL CLEAN WATER ACT**

The objective of the Clean Water Act of 1977, as amended, is to maintain and restore the chemical, physical, and biological integrity of the nation's waters. Discharge of dredged or fill material into waters of the U.S., including jurisdictional wetlands, is regulated under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers (USACE) via a permitting process. Applicants for Section 404 permits are also required to obtain water quality certification through the state (State Water Resources Control Board or Regional Water Quality Control Board in California) under Section 401 of the Clean Water Act.

#### **1.3.3. FEDERAL MIGRATORY BIRD TREATY ACT**

The Migratory Bird Treaty Act of 1918 authorizes the U.S. Secretary of the Interior to protect and regulate the "taking" of migratory birds. This treaty makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under the act, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations.

#### **1.3.4. EXECUTIVE ORDERS**

Federal agencies are required to demonstrate that their actions comply with Presidential Executive Orders established to protect the environment. Relevant Executive Orders include the following:

- **Executive Order 11990 (Wetlands):** For projects that could affect wetlands, federal agencies are required to demonstrate that no practicable alternative exists to avoid the wetland(s) and that all practicable avoidance, mitigation, and/or preservation measures have been incorporated into the project to minimize impacts to wetlands. Federal agencies are also required to provide opportunity for early public review of any plans or proposals for new construction in wetlands.
- **Executive Order 11988 (Floodplain Management):** For projects that may be located in a floodplain, federal agencies are required to evaluate the effects of the action on the floodplain and identify practicable alternatives or measures to avoid long- and short-term adverse impacts associated with the occupancy and modification of the floodplain and to avoid incompatible development in the floodplain.
- **Executive Order 13112 (Invasive Species):** Federal agencies are required to prevent the introduction of invasive species and not authorize actions that could cause or promote the introduction or spread of invasive species. Federal agencies need to identify feasible and prudent measures to minimize the risk of harm caused by invasive species.
- **Executive Order 13186 (Migratory Birds):** Federal agencies are required to evaluate the effects of their actions on migratory birds, with emphasis on species of concern, and to minimize the take of migratory birds through development of procedures for evaluating such take and conservation efforts in coordination with the USFWS. This Executive Order further implements the Migratory Bird Treaty Act and requires coordination between the USFWS and federal agencies.

### 1.3.5. CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) (Section 2800 of the Fish and Game Code) protects native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants and their habitats, which are threatened with extinction or experiencing a significant decline that, if not halted, would lead to a threatened or endangered designation. It also prohibits take of species listed or proposed for listing as threatened or endangered under CESA. CESA authorizes the California Department of Fish and Wildlife (CDFW) to issue incidental take permits for state-listed species when specific criteria are met.

### 1.3.6. PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board to oversee water rights and water quality policy and establishes nine Regional Water Quality Control Boards to protect and enhance water quality at the regional and local levels. In addition to preparing water quality control plans to designate beneficial uses of water bodies in each region, the regional boards issue waste discharge requirements for activities that result in

pollutant or nuisance discharges that may affect surface- or groundwater, including isolated wetlands not subject to USACE jurisdiction.

### 1.3.7. CALIFORNIA FISH AND GAME CODE

The California Fish and Game Code provides several provisions for the protection of waters of the state and the state's plant, fish, and wildlife resources, including the following relevant sections:

- **Sections 1600–1616 (Streambed Alteration):** California Department of Fish and Wildlife (CDFW) is responsible for the protection and conservation of fish and wildlife resources in California. Under Section 1602, CDFW has the authority to issue lake or streambed alteration agreements for construction activities that substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFW as providing resources for fish or wildlife.
- **Sections 1900–1913 (Native Plant Protection Act):** The Native Plant Protection Act prohibits the taking, possessing, or sale within the state of any plants that CDFW has determined are rare, threatened, or endangered. CDFW has the authority to enforce the provisions of this act and to authorize measures to salvage native plants that may otherwise be affected by project activities, if deemed appropriate.
- **Sections 3500–3516 (Game Birds and Birds of Prey):** CDFW protects game birds, birds of prey, migratory birds, and fully protected birds from take or possession, except as otherwise provided by the code (e.g., incidental take under the California Endangered Species Act).
- **Sections 3511, 4700, 5050, and 5515 (Fully Protected Species):** California statutes accord a “fully protected” status to a number of specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be taken, even with an incidental take permit.

## 1.4. Consultation History

Caltrans met with the USFWS, CDFW, County staff, Willdan engineers, and Stantec biologists on October 4, 2017, at the County Road R at Glenn-Colusa Canal Bridge to discuss the project, the biological studies planned to be completed, the consultation requirements for the USFWS and CDFW, and the federal- and state-listed species of concern for the project area.

An official list of biological resources that could be affected by the project was obtained from the USFWS Information for Planning and Consultation website on September 16, 2020 and updated on February 25, 2021 (Appendix A). The locations of designated and proposed critical habitat were reviewed using the USFWS online Critical Habitat Portal (USFWS 2021a). Occurrence records of federally listed animal

and plant species for the *Glenn, California* 7.5-minute quadrangle and the eight surrounding quadrangles and within approximately 15 miles of the project area were reviewed using the California Natural Diversity Database (CNDDDB) online data portal (CDFW 2021).

## **1.5. Resource Agency Coordination and Professional Contacts**

GGs is also listed as a threatened species under the California Endangered Species Act (CESA), which is described in Fish and Game Code sections 2050 through 2100. Compliance with CESA requires the impacts of any take of a CESA-listed species incidental to otherwise lawful activities to “be minimized and fully mitigated.” Under Fish and Game Code, section 86, “take” means hunt, pursue, catch, capture, or kill, or to attempt to hunt, pursue, catch, capture, or kill. Under Fish and Game Code section 2080.1, CDFW may determine that the results of section 7 consultation are consistent with CESA. If a consistency determination is made, no further approval or authorization is necessary under CESA for the listed species identified in the section 7 consultation. If a consistency determination is not made, CDFW may authorize incidental take of CESA-listed or candidate species through an incidental take permit pursuant to Fish and Game Code section 2081.

The County has begun initial coordination with CDFW on the proposed action and anticipates applying for a consistency determination for CESA compliance.

## **1.6. Study Methods**

This section provides a description of the study methods used to evaluate federally threatened and endangered species habitat, potential presence and absence, and potential project effects.

The locations of designated and proposed critical habitat were reviewed using the USFWS online Critical Habitat Portal (USFWS 2021a). Occurrence records of federally listed animal and plant species for the *Glenn, California* 7.5-minute quadrangle and the eight surrounding quadrangles and within approximately 15 miles of the action area were reviewed using the CNDDDB online data portal (CDFW 2021).

A list of special-status wildlife and plant species with potential to occur was developed (Table 1) by querying the following databases:

- U.S. Fish and Wildlife’s Information for Planning and Consultation database was queried to determine which federally listed species could potentially occur near the project limits (USFWS 2021a).
- The California Natural Diversity Database (CNDDDB) Geographic Information System database was queried for occurrences of sensitive species within 5 miles of the action area (CDFW 2021).

- The CNDDDB RareFind database was queried for the following U.S. Geological Survey quadrangles that directly surround the project: *Glenn, Orland, Hamilton City, Ord Ferry, Willows, Llano Seco, Logandale, Princeton, and Butte City, California* (CDFW 2021).
- The California Native Plant Society rare plant database was also queried for the nine U.S. Geological Survey quadrangles listed above (CNPS 2021).
- The National Wetlands Inventory database (USFWS 2021b) was queried for wetlands analysis and potential habitat for special-status aquatic species analysis.
- Climatic information was obtained from the Western Regional Climate Center (2021).
- The Soil Survey Geographic Database for Glenn County, California (U.S. Department of Agriculture and Natural Resources Conservation Service 2007). for wetlands analysis and potential habitat for special-status plant species analysis.

Each plant and wildlife species was evaluated to determine its potential to occur within the action area. A species was determined to have potential to occur in the action area if a nearby occurrence is on record with CNDDDB (CDFW 2021), if its known or expected geographic range includes the action area or the vicinity of the action area, or if its known or expected habitat is represented within or near the action area.

Results from the searches informed the technical studies that were conducted to evaluate federally listed species and resources for this BA. The results of the federally listed species evaluations, including species potential for occurrence, are provided in Tables B-1 and B-2 in Appendix B. The results of sensitive resources evaluated for this BA are in Chapter 4.

### **1.6.1. RECONNAISSANCE SURVEY**

A reconnaissance-level biological resources survey was conducted on November 30, 2017, by Stantec biologist Chariss Femino (Stantec 2021). The survey was within the boundary of the project limits, equivalent to the action area for this project. The purpose of the surveys was to characterize the dominant habitat types, evaluate the potential presence of potential habitat for GGS, identify potential locations of aquatic resources, and recommend biological surveys to be completed prior to project implementation.

### **1.6.2. TECHNICAL STUDIES**

Stantec biologist Chariss Femino conducted a field survey of the action area on November 30, 2017 (Stantec 2021). The field surveys included a wetland delineation

of waters of the United States following *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). During the field surveys, all vegetation communities and habitat types in the action area were assessed for the potential to support federally listed, proposed, and candidate species.

### **1.6.3. PAST PROJECT SURVEYS**

There are no past project surveys that were conducted in this area.

### **1.6.4. PERSONNEL AND SURVEY DATES**

The personnel and survey dates associated with the surveys that were performed in the action area include:

- Chariss Femino, Project Biologist, Stantec Consulting Services Inc. Biological survey and delineation of potential waters of the United States, November 30, 2017.
- Tim Hanson, Associate Biologist, Stantec Consulting Services Inc. Biological survey, October 4, 2017.
- Mark Wuestehube, Principal/Project Manager, Stantec Consulting Services Inc. Biological survey, October 4, 2017.

### **1.6.5. LIMITATIONS AND ASSUMPTIONS THAT MAY INFLUENCE RESULTS**

All field studies were conducted in accordance with applicable methodologies and protocols. Protocol-level surveys for GGS were not conducted in the action area. However, the potential presence of GGS was inferred based on the presence of suitable habitat located within the action area, and nearby documented past occurrences of the species in similar habitats.

## **1.7. Consultation History**

A list (Consultation Code: 08ESMF00-2019-SLI-0499) of federally listed species with the potential to occur in the action area was obtained from the USFWS Sacramento Fish and Wildlife Office via the Information for Planning and Conservation tool on February 25, 2021 (Appendix A).



## **Chapter 2. Study Methods**

This chapter provides detailed information regarding the location, components, activities, and schedule of the proposed action including the proposed conservation measures.

### **2.1. Proposed Action Location**

The proposed project is in a rural area near the unincorporated community of Artois in Glenn County, California and it consists of a 1,200-foot alignment along County Road R. This location can be found on the *Glenn, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 20N, Range 2W, Sections 17 and 18. The approximate center of the project area is located at latitude 39.586947°, longitude -122.116908° (North American Datum 83). The location of the proposed project is shown in Figure 1.

### **2.2. Description of Proposed Action**

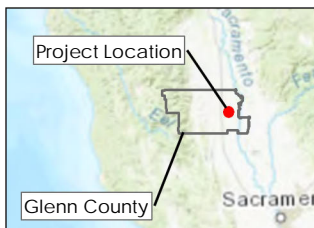
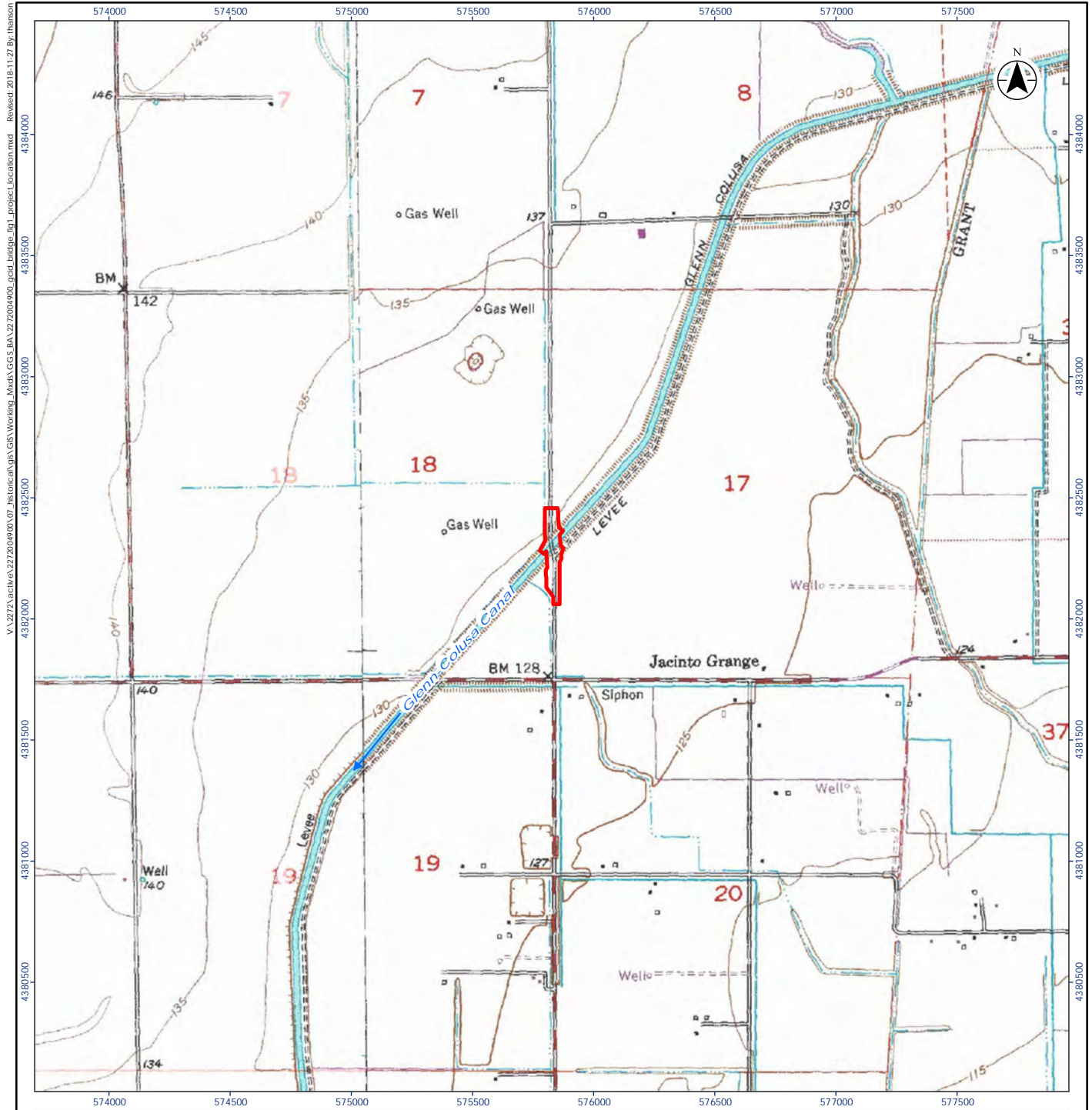
#### **2.2.1. OVERVIEW**


The County, in cooperation with Caltrans - District 3 and FHWA, is proposing to replace the existing Bridge (Bridge No. 11C-0011) on County Road R spanning the Glenn-Colusa Irrigation District (GCID) canal (proposed project). The existing County Road R Bridge, built in 1950, was temporarily closed to traffic due to excessive corrosion of the steel shells on the piles but reopened after temporary repairs were made to the pile supports. The purpose of the proposed project is to create a bridge that provides a safe and dependable route for traffic crossing the Glenn-Colusa canal. The existing County Road R alignment would be used for project access. The total area of potential effect, or Action Area is approximately 5.52 acres.

The proposed project would occur within a 5.52-acre corridor along County Road R. This area encompasses all areas that would be subject to ground disturbance (e.g., construction, staging). Construction activities would occur within aquatic and upland habitats that could be used by GGS.

#### **2.2.2. BACKGROUND**

The existing bridge (No. 11C-0011) was originally constructed in 1950 and was closed to traffic on January 9, 2014 due to excessive corrosion of the steel shells on the piles. After temporary repairs were made to the bents, the bridge was reopened in June 2018. Due to the excessive corrosion, the bridge has been determined to be structurally deficient with a sufficiency rating of 37.9 and is eligible for replacement under the Caltrans Highway Bridge Program. The Glenn-Colusa canal is an unlined canal that flows most of the year with the exception of approximately six weeks when the pumps are shut off in January and February to perform canal maintenance.



 Action Area (5.52 acres)

0 1,000 2,000  
Feet  
1:24,000 (at original document size of 8.5x11)



Project Location 2272004900  
T20N, R2E, S17 and 18 Prepared by TH on 2018-11-27  
Glenn County, CA Technical Review by CF on 2018-11-27

Client/Project  
Glenn County Public Works Agency  
County Road R over Glenn-Colusa Canal  
Bridge Replacement Project

Figure No.  
1

Title  
Project Location

Notes  
1. Coordinate System: NAD 1983 UTM Zone 10N  
2. Orthoregistry: NAIP, 2016.

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Figure 1

### **2.2.3. PURPOSE AND NEED**

The purpose of the project is to replace the functionally obsolete bridge with a new bridge that will meet current standards. The project is needed to improve vehicle safety on County Road R and ensure safe, dependable route for traffic crossing the Glenn-Colusa Canal. The new bridge abutments will be shifted to the west of the current bridge on the south side and slightly to the east of the current bridge on the north side in order to straighten the existing kinks approaching the bridge from both sides. The project will also improve safety by installing standard concrete barriers and approach guard railings.

### **2.2.4. EXISTING STRUCTURE AND SURROUNDING AREA**

The existing bridge is located on County Road R approximately 5.3 miles east of Interstate 5 and approximately 8.5 miles northeast of the town of Willows in Glenn County, California. Due to the aging structure and decaying members, County Road R Bridge is on the Eligible Bridge List with a sufficiency rating of 37.9; and is eligible for replacement under the Caltrans Highway Bridge Program administered by Caltrans.

## **2.3. Deconstruct the Proposed Action**

The details of the project and the proposed construction components including construction methods, equipment, work site components, and timing are described in the following section.

### **2.3.1. CONSTRUCTION SCENARIO SUMMARY**

#### **2.3.2. PROPOSED WORK ACTIVITIES**

The new bridge would be a standard two-lane bridge approximately 36 feet wide and 167 feet long. The bridge would have two 12-foot-wide travel lanes with 4'-7"-wide shoulders on each side. The abutments of the new bridge on the south side would be located slightly west of the existing bridge and slightly to the east on the north side, which would straighten out the kinks approaching the bridge from both the north and south. The bridge structure type will be a 4-span, precast/prestressed voided slab unit bridge. The foundation of the new bridge will consist of driven steel shell pipe piles. The new bridge has been designed to allow construction while the canal is flowing full, as it does for nearly the entire year. The bridge abutments would be located along the banks of the irrigation canal and would not be in the active channel. It is anticipated that the excavation for the abutments would not exceed 10 feet (approximate) below the existing ground surface.

The County plans to realign the roadway approaches slightly east of the existing road to align with the new bridge. Approximately 800 feet of County Road R would be reconstructed; 400 feet to the south and 400 to the north of the new bridge. As part of this realignment, cut and fill would be required along the new roadway, and

an irrigation ditch may be relocated to follow the modified roadway (Figure 2). In addition, pavement associated with the old roadway would be removed, and the disturbed area would be restored to match adjacent conditions (e.g., grasslands).

The proposed project would generally involve vegetation removal; site clearing, preparation, and earthwork; utility relocation; demolition and removal of the existing bridge structure; construction of new bridge foundations, abutments, retaining structures, deck, and guardrails; realignment of a segment of County Road R; applying pavement overlay; and hydroseeding disturbed areas, including the former roadway. Staging would occur along the road, where feasible, and may occur on adjacent private properties to the north and south of the existing bridge. Vegetation removal would be necessary in the proposed location of the new bridge and along the new road alignment. Pile driving is anticipated for the new piles. Blasting is not expected as no subsurface rock was found in the original borings to a depth of 50 feet. Demolished materials would be removed and disposed of offsite at an appropriate facility.

During periods where water is ponding but not flowing in the canal, which may occur up to six weeks per year when the irrigation district performs annual maintenance, a temporary diversion dam and piping may be used to divert canal water around the demolition area of the existing bridge and the excavation areas for the new bridge foundations. The diversion dam and piping would be temporarily installed in the canal bed approximately 100–150 feet east (upstream) of the existing bridge. The diversion dam would consist of a simple dam or device and would be about 75 to 80 feet long, extending between both banks of the canal. Flexible piping would likely be used to carry canal water through the instream work area. The piping would be sized to allow canal water to be directly channeled and conveyed through the work area with minimal impacts at the inlet and outlet locations of the diversion piping. The diversion device would be removed after the bridge work is complete when the irrigation district resumes normal canal flows after completion of their maintenance activities. The instream demolition work would take place during the period where the canal is not flowing.

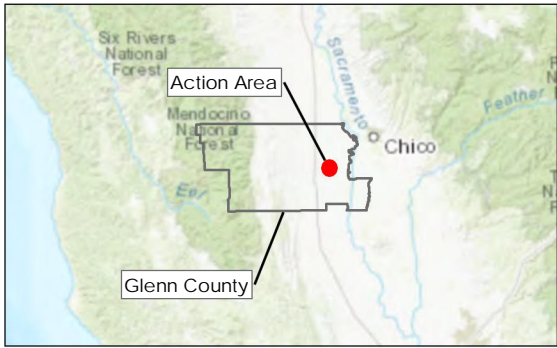
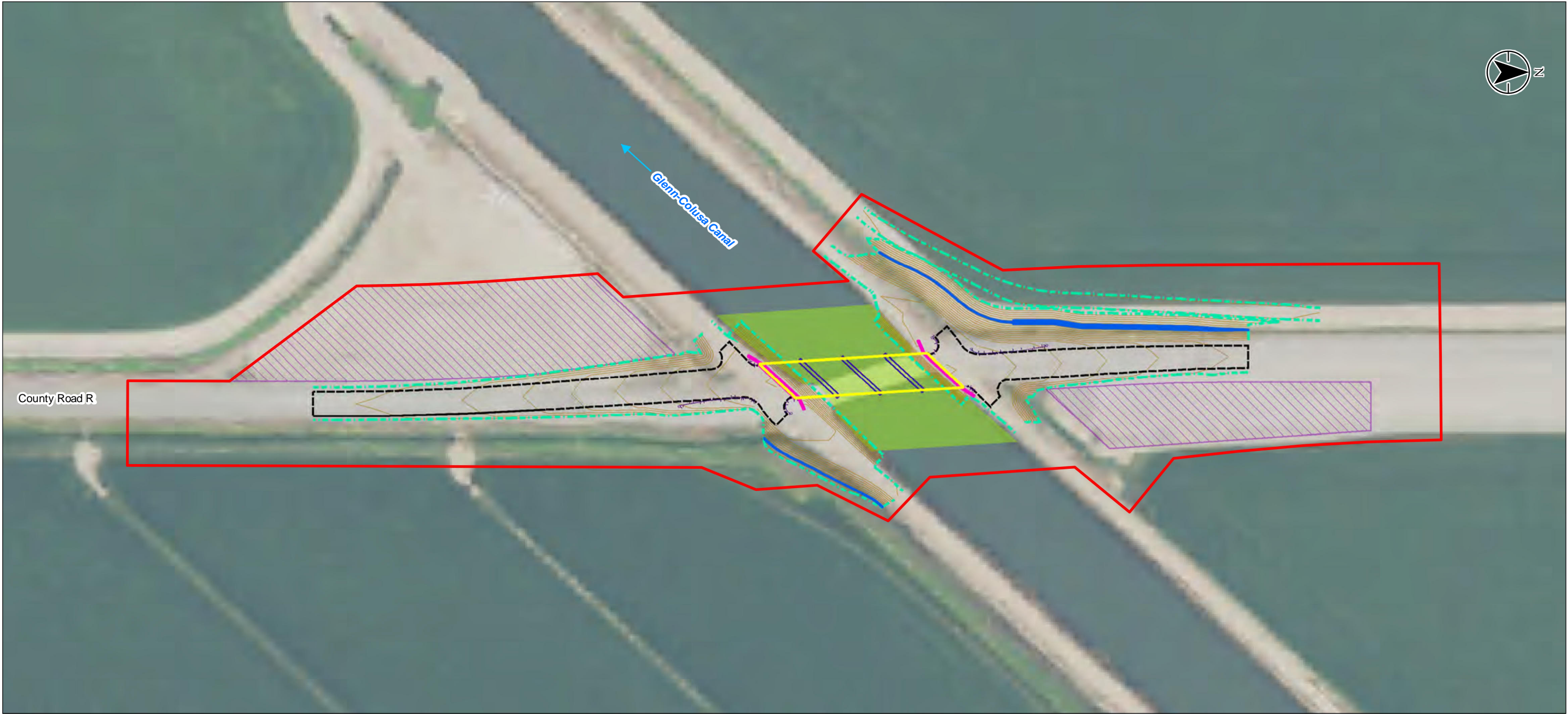
### **2.3.3. TEMPORARY CONSTRUCTION ACCESS AND STAGING AREAS**

Staging would occur along the road, where feasible, and may occur on adjacent private properties to the north and south of the existing bridge. Vegetation removal would be necessary in the proposed location of the new bridge and along the new road alignment. Pile driving is anticipated for the new piles.

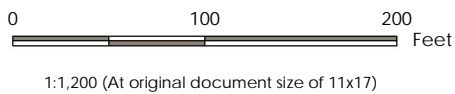
### **2.3.4. CONSTRUCTION EQUIPMENT**


The project would require the use of typical construction equipment. This may include, but is not limited to, truck-mounted crane, backhoe, excavator, loader, dump truck, bulldozer, bobcat, light truck, generator, air compressor, jackhammer, saw-cut machine chipping gun, cutting torch, and debris bin.





- Action Area (5.52 acres)
- New Bridge
- Abutments
- Bridge Supports
- Cut/Fill
- Edge of Pavement
- Guardrail
- Post Construction Contours
- Constructed Drainage
- Temporary In-Channel Work Area
- Potential Staging Area





Project Location  
T20N, R2E, S17 and 18  
Glenn County, CA

Client/Project  
Glenn County Public Works Agency  
County Road R over Glenn-Colusa Canal  
Bridge Replacement Project

Figure No.  
**2**

Title  
Action Area and Project Design

2272004900

Prepared by TH on 2018-11-27  
Technical Review by CF on 2018-11-27

Notes  
1. Coordinate System: NAD 1983 UTM Zone 10N  
2. Orthoimagery: NAIP, 2016.

Figure 2

### **2.3.5. SITE CONSIDERATIONS**

During construction, the area of vegetation clearing will be minimized and will be confined to the project footprint, including grading locations, construction access roads and staging areas. No tree removal will be required.

### **2.3.6. UTILITIES**

Utility relocations are anticipated.

### **2.3.7. SEQUENCING AND SCHEDULE**

Construction is expected to start in 2023 or later, once all required approvals and funding have been obtained. The overall construction period would encompass up to one year. County Road R near the bridge would remain closed to through traffic until construction of the new bridge is complete. Construction within the canal would generally take place between January and February when the Glenn-Colusa canal is not transporting water for agricultural purposes. Work performed in and around the Glenn-Colusa canal (e.g., demolition, diversion dam, and abutment construction) would be scheduled during these off-peak months. Other work (e.g., pile driving, precast concrete element assembly, paving and striping the road) outside of the canal may be scheduled at any time.

## **2.4. Conservation Measures**

Conservation measures #1 through #5 below will be incorporated into the proposed action to minimize the potential for adverse effects on GGS and other sensitive biological resources.

### **2.4.1. CONSERVATION MEASURE #1 - EROSION AND SEDIMENTATION CONTROL**

Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the appropriate erosions/sedimentation control provisions contained in the Caltrans Standard Specifications (which are in force at the time the construction contract is awarded) and the special provisions included in the contract for the project. Such provisions shall include the preparation of a Storm Water Pollution Prevention Plan or Water Pollution Control Plan, which will describe and illustrate best management practices (BMPs).

Erosion control measures to be included in the Storm Water Pollution Prevention Plan or Water Pollution Control Plan include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period (i.e., June–September) to minimize the potential for rainfall to transport sediment to surface water features. If these activities must take place during the late fall, winter, or



spring, temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and shall be maintained until permanent erosion control structures are in place.

- Vegetation clearing and ground-disturbing activities shall be limited to the minimum area necessary for project implementation.
- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent probability of rain within the next 24 hours as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas at the completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs shall be implemented, such as placing silt fences, straw wattles, or catch basins below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.
- If spoil sites are used, they shall be placed where they do not drain directly into a surface water feature, if possible. If a spoil site would drain into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.
- Erosion control blankets and other erosion control measures that employ monofilament netting shall be prohibited within the project area.
- Sediment control measures shall be in place prior to the onset of the rainy season and shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

#### **2.4.2. CONSERVATION MEASURE #2 - PREVENTION OF ACCIDENTAL SPILLS**

Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):

- A site-specific spill prevention plan shall be implemented if any potentially hazardous materials will be used during construction. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary,

containment berms shall be constructed to prevent spilled materials from reaching surface water features.

- Equipment and hazardous materials shall be stored a minimum of 50 feet away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of potentially hazardous materials. Maintenance and fueling shall be conducted in an area at least 50 feet away from surface water features or within an adequate fueling containment area.

#### **2.4.3. CONSERVATION MEASURE #3 - AIR QUALITY/DUST CONTROL**

The County-approved construction bid documents shall include provisions that the contractor shall implement a dust control program to limit fugitive dust emissions. The dust control program shall include, but not be limited to, the following elements, as appropriate:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- All loose materials transported to and from the construction site shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.
- Any topsoil removed during construction shall be stored on-site in piles no higher than 4 feet to allow development of microorganisms prior to replacing the soil in the construction area. The topsoil piles shall be clearly marked and flagged. Topsoil piles that will not immediately be used in the construction area shall be revegetated with a non-persistent erosion control mixture.
- Soil piles for backfill shall be marked and flagged separately from native topsoil stockpiles. These soil piles shall also be surrounded by silt fencing, straw wattles, or other sediment barriers or covered unless they are to be used immediately.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of

fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

#### **2.4.4. CONSERVATION MEASURE #4 - PREVENTION OF SPREAD OF INVASIVE SPECIES**

- All equipment used for off-road construction activities shall be weed-free prior to entering or leaving the project area.
- Any mulches or fill used shall be weed free.
- Any seed mixes or other vegetative material used for revegetation of disturbed sites shall consist of locally adapted native plant materials to the extent practicable.

#### **2.4.5. CONSERVATION MEASURE #5 – GENERAL MEASURES FOR PROTECTION OF SPECIAL-STATUS WILDLIFE SPECIES**

The County will implement the following general conservation measures to avoid or minimize the potential for adverse effects on special-status wildlife species:

- Construction access and equipment will be located on existing roads or previously disturbed parking areas.
- Disturbance of soil, vegetation, naturally occurring debris piles (including fallen trees or dead tree snags), rocky outcrops, and wildlife burrows will be avoided or minimized to the extent practicable.
- To the extent practicable, all holes or trenches will be covered at the end of each workday to prevent wildlife from becoming trapped. All holes and trenches will be inspected before each workday to facilitate the release of any trapped wildlife. A qualified biologist will be consulted if work crews are unable to safely assist in the release of trapped wildlife.
- To minimize attractants to wildlife, trash will be stored in containers that can be closed and latched or locked to prevent access by wildlife. All loose trash will be cleaned up daily.

#### **2.4.6. SPECIES-SPECIFIC CONSERVATION MEASURES**

- Glenn County will implement the following measures to minimize construction impacts on GGS and its habitat:
  - Construction personnel shall participate in a USFWS- and CDFW-approved worker environmental awareness program. Under this program, workers shall be informed about the potential presence of GGS and habitat associated with the species and that unlawful take of the animal or destruction of its habitat is a violation of the ESA. Prior to

construction activities, a qualified biologist approved by the USFWS and CDFW shall instruct all construction personnel about: (1) the life history of the GGS; (2) the importance of irrigation canals, marshes/wetland, and seasonally flooded areas, such as rice fields, to the GGS; and (3) the terms and conditions of the biological opinion.

- Within 24 hours prior to commencement of construction activities, the site shall be inspected by a qualified biologist who is approved by the USFWS and CDFW. The biologist will provide the USFWS and CDFW with a field report form documenting the monitoring efforts within 24 hours of commencement of construction activities.
  - Vegetation clearing will be limited to the minimum area necessary.
  - If water will be obtained from any suitable GGS aquatic habitat, intake hoses will be screened with mesh no larger than ¼ inch.
  - Tightly woven fiber netting (mesh size less than 0.25 inch), coconut coir matting, or similar material will be used for erosion control or other purposes. Plastic monofilament or wire mesh in the straw waddles or erosion control mats will not be used. Only erosion control materials (blankets, rolls, mats, etc.) with natural coir fibers or other netting approved by the USFWS and CDFW will be used. The edge of the material will be buried in the ground to prevent GGS from crawling underneath the material.
  - All project personnel will look beneath parked vehicles and equipment for snakes prior to their movement.
  - Prior to any project activities that could incidentally take GGS, the County will provide CDFW with written documentation that the County has allocated sufficient funds, acceptable to and approved by CDFW, in the Expenditure Authorization for the proposed project to ensure implementation of all measures to minimize and fully mitigate the incidental take of GGS resulting from construction of the project. The documentation provided by the County will identify specific minimization and mitigation components and the costs associated with each component.
- If work must be performed during the GGS dormant period, (i.e., between October 2 and April 30), the County will implement the following protective measures:
    - A full-time USFWS- and CDFW-approved biological monitor will be onsite for the duration of any ground-disturbing activities (e.g., vegetation clearing, grubbing, grading, and other earth-moving activities) after October 1. If a snake is encountered during construction activities, the monitoring biologist shall have the authority

to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. GGS encountered during construction activities should be allowed to move away from construction activities on their own. The project shall be re-inspected whenever a lapse in construction activity of two weeks or greater has occurred.

- All vegetation within 200 feet of aquatic habitat will be cleared prior to the GGS hibernation period (i.e., vegetation clearing must be completed by October 1 for work the following winter).
- A fencing plan will be prepared and provided to the USFWS and CDFW for comments prior to the start of construction. The exclusion and construction barrier fencing will be installed during the active period for GGS (May 1–October 1) to reduce the potential for injury and mortality during this activity. Exclusion fencing will be installed before ground-disturbing activities begin.
- The County will prepare a GGS relocation plan in the event that a snake is injured or trapped during construction. The plan will outline the biological monitor qualifications and responsibilities, and the steps to be taken if a GGS is encountered during construction. The plan will identify the names and contact information for one or more USFWS- and CDFW-approved biologists that will be responsible for handling snakes. The location (if known) where trapped GGS would be relocated to will be included in the plan or the plan will specify that trapped individuals will be relocated to the nearest suitable habitat that is outside of the construction area. The plan will describe the steps that will be taken in the notification process and documentation required for submission to the USFWS and CDFW. The plan will be approved by the USFWS and CDFW.

## **2.5. Compensation**

To compensate for the permanent loss of 0.209 acre of GGS habitat (0.129 acre of aquatic habitat and 0.08 acre of upland habitat), the County will purchase 0.627 acre (a 3:1 ratio) of GGS credits at a USFWS- and CDFW-approved conservation bank.

## **Chapter 3. Environmental Baseline**

Environmental baseline refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area; the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation; and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR §402.02).

### **3.1. Summary of Environmental Baseline**

The 5.52-acre action area consists primarily of barren/ruderal, riverine, and agricultural habitats. The barren/ruderal habitat is present along County Road R, as well as adjacent to the Glenn-Colusa canal on both north and south sides. Riverine habitat is present in Glenn-Colusa canal as well as the vegetated ditches that parallel County Road R and the Glenn-Colusa canal. Outside of the action area, fresh emergent wetland continues in agricultural ditches, as do agricultural rice and grain crops (i.e., alfalfa) which surround the action area. County Road R is a rural road in an unincorporated area of Glenn County that serves several nearby farmlands. The dominant land use in the vicinity of the action area is primarily agricultural (e.g., machine harvested rice and alfalfa). Representative photographs of the action area are provided in Appendix C.

### **3.2. Description of the Action Area**

#### **3.2.1. PHYSICAL CONDITIONS**

Below are the descriptions of the physical conditions found in the action area.

#### **Topography**

The topography of the action area immediately adjacent to the Glenn-Colusa canal is nearly level. The action area generally runs perpendicular to the Glenn-Colusa canal and occurs at an elevation of approximately 130 feet. The topography around the existing bridge is nearly level, with slight topographical relief associated with Glenn-Colusa canal's embankments. The landscape surrounding the action area consists primarily of rice fields.

#### **Climate**

The climate is Mediterranean with cool, wet winters and hot, dry summers. Precipitation in the action area primarily falls as rain, and the average annual rainfall



is approximately 18 inches. Air temperatures range from an average January high of 55 Fahrenheit (°F) to an average July high of 95 °F. The year-round average high temperature is approximately 75 °F (Western Regional Climate Center 2021).

## Hydrological Resources

Hydrology of the action area is driven primarily by precipitation, runoff, and groundwater. Glenn-Colusa canal is the primary drainage feature in the action area and is the GCID's main delivery canal for agricultural water in the region. In addition, the canal also serves a complex of wildlife refuges in the area.

## Soils

Soil map units in the vicinity of the action area are described in the Soil Survey Geographic Database for Glenn County, California (U.S. Department of Agriculture and Natural Resources Conservation Service 2007). Two soil types have been mapped in the action area:

- **Plaza silt loam (Pf):** This is a non-hydric, moderately well to imperfectly drained soil formed in alluvium. These soils occur in rice producing areas and consequently water tables persist for longer periods than would be expected under natural conditions. The depth to a restrictive layer is 60 inches.
- **Plaza silty clay loam:** This is a non-hydric, moderately well to imperfectly drained soil formed in alluvium. These soils occur in rice producing areas and consequently water tables persist for longer periods than would be expected under natural conditions. The depth to a restrictive layer is 60 inches.

### 3.2.2. BIOLOGICAL CONDITIONS

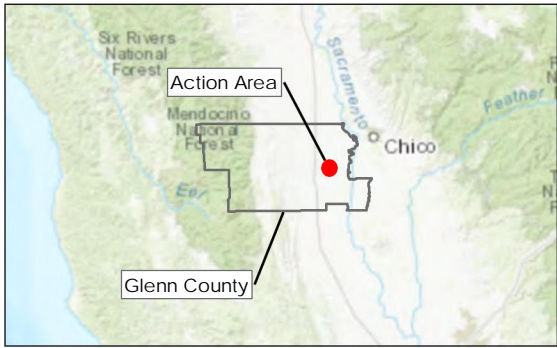
Below are descriptions of the biological conditions in the action area.

#### Habitat Communities

Habitat types were classified based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Four vegetation communities or other habitats occur in the action area: agriculture (rice), barren/ruderal, riverine, and vegetated ditch (Figure 3). These habitat types are described below.

#### Agriculture (Rice)

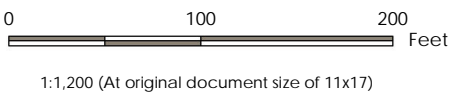
Agriculture, in the form of machine harvested rice, surrounds the action area on all sides. This habitat is generally flooded with water in the spring when rice is planted and continues to be inundated until fall when the rice is harvested. After harvest, some fields are left fallow for the winter with no water or crops growing. The two fields to the west and the one field to the north east of the action area were fallow



- Action Area (5.52 acres)
- Habitat Communities
- Agriculture (Rice)
  - Barren/Ruderal
  - Riverine
  - Vegetated Ditch

Notes

1. Coordinate System: NAD 1983 UTM Zone 10N
2. Orthoimagery: NAIP, 2016.



Project Location  
T20N, R2E, S17 and 18  
Glenn County, CA

2272004900  
Prepared by TH on 2018-11-27  
Technical Review by CF on 2018-11-27

Client/Project  
Glenn County Public Works Agency  
County Road R over Glenn-Colusa Canal  
Bridge Replacement Project

Figure No.  
**3**

Title  
**Habitat Communities**

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure 3

during the November 30, 2017 field assessment. Some rice fields are re-inundated after the rice harvest and provide habitat for migrating and over-wintering waterfowl during the winter months. The rice fields located south of the Glenn-Colusa canal and east of the action area were flooded for this purpose during the November 30, 2017 field assessment.

### **Barren/Ruderal**

Barren/ruderal habitat occurs as dirt and paved roads and their associated road shoulders. Vegetation is usually not present, although sparse opportunistic grasses and forbs or weedy species may occur.

### **Riverine**

Riverine habitat consists of the Glenn-Colusa canal and associated irrigation ditches. The canal is characterized by rock and mud substrates with very little vegetation within the canal. It flows westerly through the action area and is typically flooded year-round to convey water to agricultural crops.

### **Vegetated Ditch**

Vegetated ditches are located throughout the action area. They are excavated ditches that convey water from the irrigation canal to the adjacent rice fields. The irrigation ditches are characterized by mud substrates and dominated by obligate wetland species such as broad-leaved cattail (*Typha latifolia*) and water primrose (*Ludwigia* sp.). During the November 30, 2017 survey, there was evidence that the vegetation in two of the ditches had recently been excavated with remnants of hydrophytic vegetation such as cattails and flat sedge (*Cyperus difformis*) seedlings present.

## **3.2.3. HABITAT CONDITIONS IN THE ACTION AREA**

As previously described in Section 3.2.2, Biological Conditions, the action area supports both aquatic and upland GGS habitat. The riverine (Glenn-Colusa Canal), agriculture (rice) and vegetated ditches provide suitable aquatic habitat for GGS. Suitable upland habitat is located in the adjacent barren/ruderal habitat adjacent to the water features and road.

## **3.3. Status of Federally Listed/Proposed Species**

The species that may be affected by the project action is the federally listed as threatened GGS. This section presents life history and occurrence information for GGS. The potential for the project to affect GGS is discussed in Chapter 4.

### **3.3.1. DISCUSSION OF GIANT GARTER SNAKE**

#### **Life History**

Historically, GGS had a broad geographic range and was endemic to the wetlands of the Central Valley of California. Specifically, the range of the species included the upper Sacramento Valley from Butte County southward to Kern County in the central San Joaquin Valley, and in the Central Valley eastward from the foothills along the Sierra Nevada westward to the foothills along the Coast Range; however, less than five percent of wetland habitat within its historical range remains (USFWS 2017).

GGS is a member of the family Colubridae, and is one of the largest of its genus, *Thamnophis*, with average recorded lengths between approximately 23 to 27 inches for males and 27 to 31 inches for females (Wylie et al. 2010, USFWS 2017). GGS can be distinguished from other garter snakes by color pattern, number and size of scales and head size (Hansen 1980, USFWS 2017). GGS ventral surface, or background coloration, varies from brown to olive with a cream/yellow/orange dorsal stripe and two light lateral stripes (Hansen 1980).

The GGS tends to inhabit marshes, sloughs, ponds, small lakes, small streams and agricultural rice fields, drainages and canals, and is, typically, absent from fast-moving, water bodies such as high gradient streams, and large lakes which often lack vegetative cover (USFWS 2020, USFWS 2017). Essential components of GGS habitat include: (1) adequate fresh water with protective emergent vegetative cover allowing for foraging from early spring through fall; (2) adequate upland emergent herbaceous habitat (e.g., bulrush, cattails) during the summer that can be used for thermoregulation (i.e., basking) and provide cover; and (3) upland refugia for retreat during winter hibernacula (Hansen 2003, Wylie et al. 2010, USFWS 2017).

Like all snakes, the GGS is an ectothermic animal which relies on external sources of heat and cooling to regulate its body temperature (e.g., basking on rocks to warm their bodies or resting under water/vegetation/burrows to cool down). GGS inhabits small mammal burrows or soil crevices during its winter dormancy period, or hibernacula, (i.e., October/November to mid-March) in which foraging and other activities are largely suspended due to weather conditions. GGS begin emerging from dormancy around April, and are most active through mid-fall, with the peak of activity in April and May (Hansen and Brode 1993). GGS breeding season begins during this time, following emergence from burrows (i.e., from March through April or May) (Coates et al. 2009). After 2–3 months of pregnancy, the GGS female gives birth to an average of 17 to 23 young in summer to early fall (Hansen and Hansen 1990, Halstead et al. 2011). Activity is reduced again in the mid-to late summer months as weather conditions change (Hansen and Bode 1993). Based on the average age to reach sexual maturity, approximately 3 years for males and 5 years for females, a GGS generation is estimated at five years (USFWS 2017). The GGS primarily feeds on small fish, tadpoles, and frogs (Hansen 1980, U.S. USFWS 2017).

## **Nearby Occurrences**

The action area is in the current known range of GGS. The nearest CNDDDB occurrence of the species is approximately 3.75 miles southeast of the action area near County Road 46 and Road V. This CNDDDB occurrence from 2011 denotes that the snake was stretched out in a void between two concrete slabs in an area surrounded by rice fields. Other CNDDDB occurrences documented GGS in nearby freshwater marshes within low gradient streams and near irrigation ditches and canals.

## **Survey Results**

A reconnaissance-level survey was conducted within the action area to determine presence of potential habitat for GGS on November 30, 2017. The survey identified suitable aquatic and upland habitats for GGS in the action area, which consists of Glenn-Colusa Canal (i.e., aquatic habitat); upland emergent herbaceous habitat in the vegetated ditches throughout the action area; and potential upland refugia habitat consisting of small mammal burrows within the barren/ruderal habitat and RSP around the existing bridge. No GGS were observed in the action area during the field visit on November 30, 2017. However, given the proximity and recency of the CNDDDB occurrences and the presence of suitable aquatic and upland habitat, it is anticipated that GGS may be present in the action area.

## **Avoidance and Minimization Efforts**

The project was designed to minimize effects on natural resources by locating the new bridge in the same location as the existing bridge and minimizing disturbance outside the existing roadway. Conservation Measures #1–5 (Section 2.4) incorporate standard practices that minimize effects on wildlife species by minimizing the area of disturbance, ensuring temporarily disturbed areas are restored, preventing pollutants from entering the creek and habitat outside the work area, and training construction crews on special-status species that may be encountered in the work area.

## **Status of Designated Critical Habitat in the Action Area for Giant Garter Snake**

Critical habitat has not been designated for GGS. However, the GGS range has been divided into nine corresponding genetically and geographically distinct recovery units: Butte Basin, Colusa Basin, Sutter Basin, American Basin, Yolo Basin, Cosumnes-Mokelumne Basin, Delta Basin, San Joaquin Basin, and Tulare Basin (USFWS 2017). The action area is located within the Colusa Basin Recovery Unit which contains almost 700,000 acres. Three management units have been established for this basin, including Willows, Colusa, and Delevan (USFWS 2017).

## **Chapter 4. Effects of the Action**

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including consequences of other activities that are caused by the proposed action. The analysis of effects of the action first identifies stressors from project actions, then exposure to stressors, and finally the response to exposure to stressors to determine consequences. The effects of the action are used to make determinations for each listed species and critical habitat.

### **4.1. Stressors from the Action**

Stressors induce an adverse response in an organism by any physical, chemical, or biological alteration of the environment (or resource) that can lead to a response from the individual. Stressors can act directly on an individual, or indirectly through effects to a resource. Stressors from the proposed action on GGS may include:

- Vegetation clearing, grading, and grubbing of the action area for site preparation
- The placement and removal of temporary fill for the temporary access ramp into the canal
- The mobilization/staging of heavy equipment in potential habitat
- Temporary dewatering of the work area within the canal
- On-site refueling of construction equipment to support construction activities

These activities could result in increased predation or lowered reproductive success by limiting the amount and quality of habitat present in the action area.

### **4.2. Exposure to Stressors from the Action**

Exposures are defined as the interaction of the species, their resources, and the stressors that result from the project action. If present in the action area, GGS could be exposed to the stressors of the proposed action activities through direct interactions including crushing or dismemberment which could result in mortality or serious injury to individuals. The removal of potential habitat utilized by the species for cover, feeding, and reproduction also represents a direct interaction the proposed action could have on GGS and may expose individuals (if present) to an increase in predation and a lack of required resources. The use of heavy equipment and machinery for the proposed action could expose GGS to oils, fuels, and other contaminants and have direct deleterious effects on GGS and may result in injury. The release of oils, fuels, and other contaminants could also directly adversely affect potential habitat for GGS and may result in increased predation or lowered reproduction by limiting the amount and quality of habitat in the action area.

### 4.3. Response to the Exposure

Some construction activities within the canal will be timed during the inactive period for GGS (October 2–April 30). As such, responses to the exposure of potential stressors from the proposed action on GGS may include disturbance to hibernacula, displacement of individuals from the action area, and behavioral changes (e.g., reduced breeding activities) as a result of stressors introduced by the proposed action. These responses may lead to an increase in predation, individual mortality, and a reduction in breeding success.

### 4.4. Effects of the Action

Effect is a description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effect (50 CFR 402.02). The effect of the action is the consequence (behavioral, physical, or physiological) of a response to a stressor.

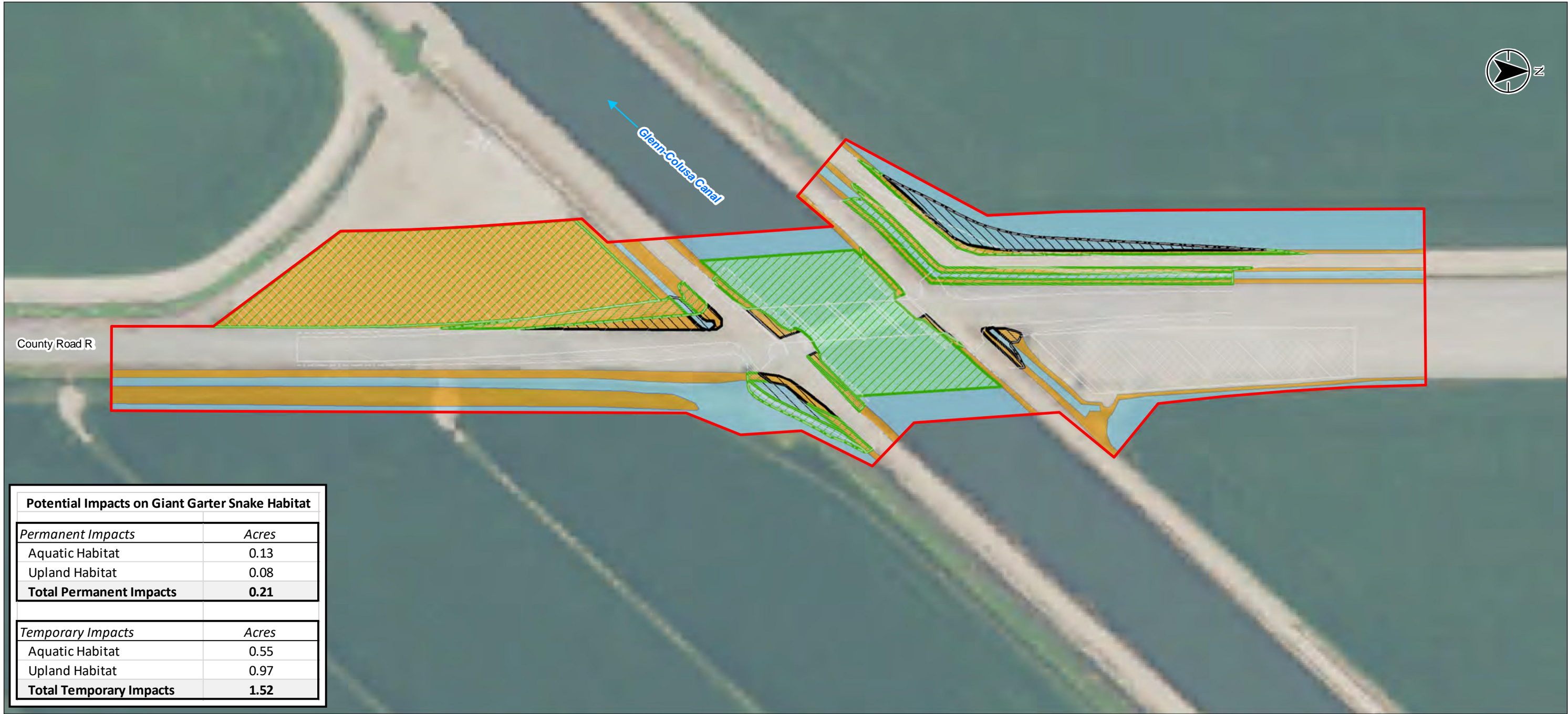
#### 4.4.1. DIRECT EFFECTS

Direct effects on GGS may occur when ground-disturbing activities result in the disturbance of potential aquatic and upland habitats within the action area. Minimal permanent habitat impacts will occur because the proposed action will largely be limited to existing paved surfaces (i.e., County Road R). Approximately 0.129 acre of potential aquatic habitat (i.e., vegetated ditches and rice field/managed wetlands) will be permanently affected by the placement of RSP and road re-alignment. Approximately 0.552 acre of aquatic habitat will be temporarily affected by placement of the cofferdams, dewatering, and work within the channel of the canal. The proposed action will also permanently affect approximately 0.08 acre and temporarily affect 0.97 acre of potential upland refugia habitat. Table 2 provides a summary of permanent and temporary impacts on potential GGS habitat in the action area as a result of project implementation. Figure 4 illustrates the potential permanent and temporary impacts as a result of the proposed action.

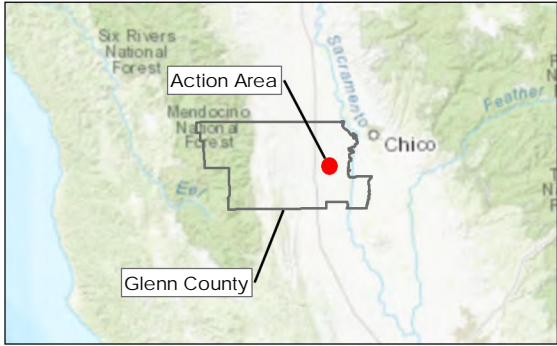
**Table 2. Summary of Anticipated Giant Garter Snake Habitat Impacts**

Habitat Type	Acres
<b>Permanent Impacts</b>	
Upland Refugia Habitat	0.08
Aquatic Habitat (Rice Field/Managed Wetland)	0.094
Aquatic Habitat (Vegetated Ditches)	0.035
<b>Total Permanent Impacts</b>	<b>0.209</b>
<b>Temporary Impacts</b>	
Upland Refugia Habitat	0.97
Aquatic Habitat (Glenn-Colusa Canal)	0.468
Aquatic Habitat (Vegetated Ditches)	0.084
<b>Total Temporary Impacts</b>	<b>1.522</b>





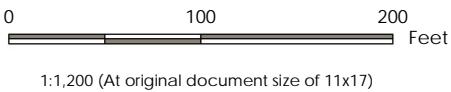
Potential Impacts on Giant Garter Snake Habitat	
<i>Permanent Impacts</i>	<i>Acres</i>
Aquatic Habitat	0.13
Upland Habitat	0.08
<b>Total Permanent Impacts</b>	<b>0.21</b>
<i>Temporary Impacts</i>	<i>Acres</i>
Aquatic Habitat	0.55
Upland Habitat	0.97
<b>Total Temporary Impacts</b>	<b>1.52</b>



Notes

- Coordinate System: NAD 1983 UTM Zone 10N
- Orthoimagery: NAIP, 2016.

- Action Area (5.52 acres)
- Project Design Features
- Giant Garter Snake Habitat
  - Aquatic (1.70 acres)
  - Upland (1.63 acres)
- Potential Impacts on Giant Garter Snake Habitat
  - Permanent (0.21 acre)
  - Temporary (1.52 acres)



Project Location 2272004900  
T20N, R2E, S17 and 18  
Glenn County, CA Prepared by TH on 2018-11-27  
Technical Review by CF on 2018-11-27

Client/Project  
Glenn County Public Works Agency  
County Road R over Glenn-Colusa Canal  
Bridge Replacement Project

Figure No.  
4

Title  
Project Impacts



Construction activities that would temporarily disturb potential GGS habitat would include: (1) vegetation clearing, grading, and grubbing of the action area for site preparation; (2) the placement and removal of temporary fill for the temporary access ramp into the canal; and (3) the mobilization/staging of heavy equipment in potential habitat. If GGS is present during construction, potential direct effects include mortality, increased risk of predation, and increased stress resulting from removal of hibernacula while snakes are present; temporary reduction in available aquatic habitat and prey base as a result of dewatering and other construction disturbance; displacement from the action area due to the presence of people and equipment; obstruction of movement corridors due to the presence of people and equipment in the creek channel and on the banks; and crushing, dismemberment, and other injuries resulting from contact with vehicles and other construction equipment.

The proposed action will require on-site refueling of construction equipment to support construction activities. As a result, minor fuel and oil spills may occur, with a risk of larger releases. Without rapid containment and clean up, these materials could be potentially toxic to aquatic and terrestrial plants, wildlife, and fish species, depending on the location of the spill in proximity to these resources. Oils, fuels, and other contaminants could have deleterious effects on all biota present within close proximity to construction activities. Additionally, habitat and species composition of both plants and animals could be affected by accidental spills. These effects may result in increased predation or lowered reproductive success by limiting the amount and quality of habitat in the action area.

To minimize the potential for direct effects on GGS, the proposed action will implement the avoidance and minimization, and conservation measures identified in Section 2.4. Further, the avoidance and minimization, and conservation measures which are incorporated into the proposed action will minimize disturbance of potential GGS aquatic and upland habitats; and thereby minimize the potential for direct take of the species as a result of habitat removal/disturbances. Implementation of Conservation Measure #2 would limit the potential for these effects by requiring that the contractor maintain spill containment booms at the site and maintain construction equipment to avoid mechanical breakdown and potential for fluid leaks. Since the proposed action activities could disturb or injure GGS, the proposed action may affect, and is likely to adversely affect GGS.

#### **4.4.2. INDIRECT EFFECTS**

Indirect effects are caused by or are a result of the proposed action and are reasonably certain to occur later in time. The proposed action would not result in indirect effects on GGS. The proposed action entails replacing the existing County Road R bridge over Glenn-Colusa canal. Upon completion of construction activities, the work area will be restored to approximate pre-project conditions and topography. The future day-to-day operation of County Road R at Glenn-Colusa canal will not differ substantially from pre-project conditions. The avoidance and minimization, and

conservation measures will also avoid indirect effects (e.g., spread of non-native species) on GGS.

#### **4.5. Cumulative Effects**

Cumulative effects are those impacts of future state, local, and private actions affecting endangered and threatened species that are reasonably certain to occur in the action area. Future projects that result in a federal action would be subject to the consultation requirements established in Section 7 of the ESA and, therefore, are not considered cumulative to the proposed action.

The proposed action would not result in cumulative effects on GGS. The proposed action consists of replacing an existing bridge. The future day-to-day operation of County Road R at Glenn-Colusa canal will not differ substantially from pre-project conditions.

#### **4.6. Discussion Supporting Determination**

The proposed action may affect and likely to adversely affect determination for GGS is based on the following information: 1) reconnaissance-level surveys of suitable habitat in the action area; 2) the potential presence of GGS in the action area; 3) the type of project activities (e.g., vegetation clearing, dewatering, ground disturbance); and 4) adherence to mitigation and conservation measures to be implemented as part of the proposed action.

#### **4.7. Determination**

Caltrans has made the following effect determinations.

##### **4.7.1. NO EFFECT**

A no effect determination was made for the following species and designated critical habitat. No consultation is required:

- Delta smelt
- Valley elderberry longhorn beetle
- Conservancy fairy shrimp
- Vernal pool fairy shrimp
- Vernal pool tadpole shrimp
- California red-legged frog
- Yellow-billed cuckoo (Western U.S. DPS)

#### **4.7.2. MAY AFFECT-NOT LIKELY TO ADVERSELY AFFECT**

A may affect-not likely to adversely affect determination was made for the following species and designated critical habitat. Information consultation is required:

- None

#### **4.7.3. MAY AFFECT- LIKELY TO ADVERSELY AFFECT:**

A may affect-likely to adversely affect determination was made for the following species. Formal consultation is required:

- Giant garter snake

## Chapter 5. References

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- U.S. Fish and Wildlife Service. 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. vii + 71 pp. Available at <https://www.fws.gov/endangered/species/recovery-plans.html>.
- U.S. Fish and Wildlife Service. 2020. Giant Garter Snake (*Thamnophis gigas*) 5-Year Review: Summary and Evaluation. Sacramento, California. Available at, [https://ecos.fws.gov/docs/five\\_year\\_review/doc6423.pdf](https://ecos.fws.gov/docs/five_year_review/doc6423.pdf).
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# Appendix A U.S.Fish and Wildlife Service Official Species List

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## 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:

February 25, 2021

Consultation Code: 08ESMF00-2019-SLI-0499

Event Code: 08ESMF00-2021-E-03284

Project Name: County Road R over Glenn-Colusa Canal Bridge Replacement Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location 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](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](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

[www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html).

[http://](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

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## Project Summary

Consultation Code: 08ESMF00-2019-SLI-0499

Event Code: 08ESMF00-2021-E-03284

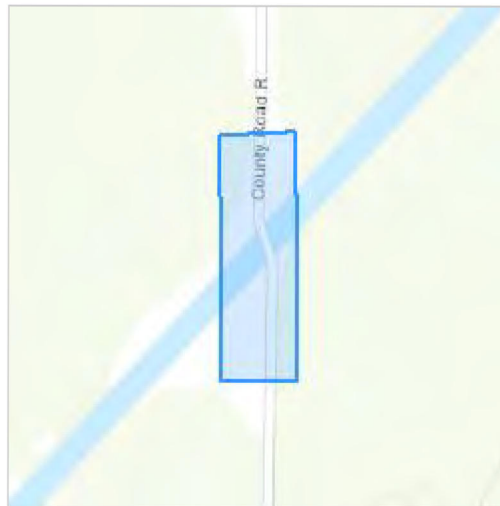
Project Name: County Road R over Glenn-Colusa Canal Bridge Replacement Project

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Glenn County Public Works Agency (County) is proposing to replace the existing bridge on County Road R spanning the Glenn-Colusa Irrigation District (GCID) Canal. Located in rural Glenn County, approximately 8.5 miles northeast of Willows, the action area is 5.52 acres along County Road R. Construction is anticipated to begin in 2021 or later.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.58674396465203,-122.11701757610666,14z>



Counties: Glenn County, California

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## Endangered Species Act Species

There is a total of 8 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 Fisheries<sup>1</sup>, 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 <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a>	Threatened

## Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4482">https://ecos.fws.gov/ecp/species/4482</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

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## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a>	Threatened

## Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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## Appendix B Plant and Wildlife Species Tables

## Appendix B

### Review of Regionally Occurring Federally Listed Species

#### County Road R Over Glenn-Colusa Canal Bridge (11C0011) Replacement Project Biological Assessment

**Table B-1. Review of Regionally Occurring Federally Listed Plant Species**

Common Name Scientific Name	Status <sup>1</sup>	General Habitat Description	Habitat Assessment <sup>2</sup>	Rationale
palmate-bracted salty bird's-beak ( <i>Chloropyron palmatum</i> )	FE	This annual hemiparasitic herb occurs in vernal pools. This species prefers stony loam to loamy clay. Elevation: 160–2470 ft. Bloom: April–May	A	The action area does not contain suitable habitat for this species.
Hoover's spurge <i>Euphorbia hooveri</i> ( <i>Chamaesyce hooveri</i> )	FT	This annual herb occurs in Northern Hardpan and Northern Claypan vernal pools. This species prefers deeper pools or pool margins. This species prefers pools that are devoid of other vegetation. May occur in sandy loam to clay. Elevation: 80–830 ft. Bloom: Jul–Oct	A	The action area does not contain suitable habitat for this species.
Colusa grass <i>Neostapfia colusana</i>	FT	This annual herb occurs in Northern Claypan and Northern Hardpan vernal pools. Prefers adobe clay soil. Typically grows in the deepest part of the pool but may also occur in pool margins. Elevation: 15–660 ft. Bloom: May–Aug	A	The action area does not contain suitable habitat for this species.
hairy Orcutt grass <i>Orcuttia pilosa</i>	FE	This annual herb occurs in vernal pools. Elevation: 100–330 feet. Blooms: Apr–Sep	A	The action area does not contain suitable habitat for this species.
Greene's tuctoria <i>Tuctoria greenei</i>	FE	This annual herb occurs in three types of vernal pools: Northern Hardpan, Northern Basalt Flow, and Northern Claypan. Vernal pools are underlain by iron-silica cemented hardpan, tuffaceous alluvium or claypan. Elevation: 100–3530 ft. Bloom: May–Sep	A	The action area does not contain suitable habitat for this species.

1 Status Codes: Federal Threatened (FT); Federal Endangered (FE).

2 Assessment Codes. Absent (A): No habitat present and no further work needed.

## Appendix B

### Review of Regionally Occurring Federally Listed Species

#### County Road R Over Glenn-Colusa Canal Bridge (11C0011) Replacement Biological Assessment

**Table B-2. Review of Regionally Occurring Federally Listed Wildlife Species**

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT ASSESSMENT <sup>2</sup>	RATIONALE
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE	Vernal and intermittent freshwater pools with turbidity.	A	Vernal pools and seasonal wetlands that may support the species are absent in the action area and surrounding vicinity
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	A	Vernal pools and seasonal wetlands that may support the species are absent in the action area and surrounding vicinity.
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	Vernal pools, swales, and ephemeral freshwater habitats.	A	Vernal pools and seasonal wetlands that may support the species are absent in the action area and surrounding vicinity.
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	Elderberry shrubs having stems with a basal diameter equal to or greater than 1 inch. Typically associated with riparian habitat.	A	No elderberry shrubs are present within the action area or the surrounding vicinity.
Delta smelt <i>Hypomesus transpacificus</i>	FT	Inhabit the Sacramento-San Joaquin Delta estuary in open, shallow, low-salinity (<10%) waters. Spawns in middle and upper reaches of the Delta from late winter to spring.	A	The action area is not within the current known range of this species.
Central Valley steelhead DPS <i>Oncorhynchus mykiss irideus</i>	FT	Spawn and rear in Sacramento River and its tributaries. Require cool, swift, shallow water; clean, loose gravel for spawning; runs and suitable large pools in which to rear and over-summer.	A	The action area does not contain suitable rearing or migration habitat for this species.
giant garter snake <i>Thamnophis gigas</i>	FT	Freshwater marshes and low gradient streams with emergent vegetation; adapted to drainage canals and irrigation ditches with mud substrate.	HP	Fresh emergent vegetation and adjacent mammal burrows and rip-rap are present in the action area and provides potential aquatic and upland refugia habitat for the species, respectively (U.S Fish and Wildlife Service 2017).

## Appendix B

### Review of Regionally Occurring Federally Listed Species

#### County Road R Over Glenn-Colusa Canal Bridge (11C0011) Replacement Biological Assessment

**Table B-2. Review of Regionally Occurring Federally Listed Wildlife Species**

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT ASSESSMENT <sup>2</sup>	RATIONALE
California red- legged frog <i>Rana draytonii</i>	FT	Requires perennial or near-perennial aquatic habitats, especially for breeding: streams, freshwater pools and ponds over one foot deep with overhanging vegetation.	A	The action area is not within the current range of the species.
Bank swallow <i>Riparia riparia</i>	FT	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	A	The action area does not contain suitable habitat for this species.
Yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT	Breeds in wooded habitat with dense cover and nearby water sources, including cottonwood/willow riparian forests and dense thickets along streams and marshes.	A	The action area does not contain suitable wooded habitat for this species.

<sup>1</sup>Status Codes: FE = Federal Endangered; FT = Federal Threatened

<sup>2</sup>Assessment Codes. Absent (A): No habitat present and no further work needed. Habitat Present (HP): Habitat is or may be present. The species may be present.



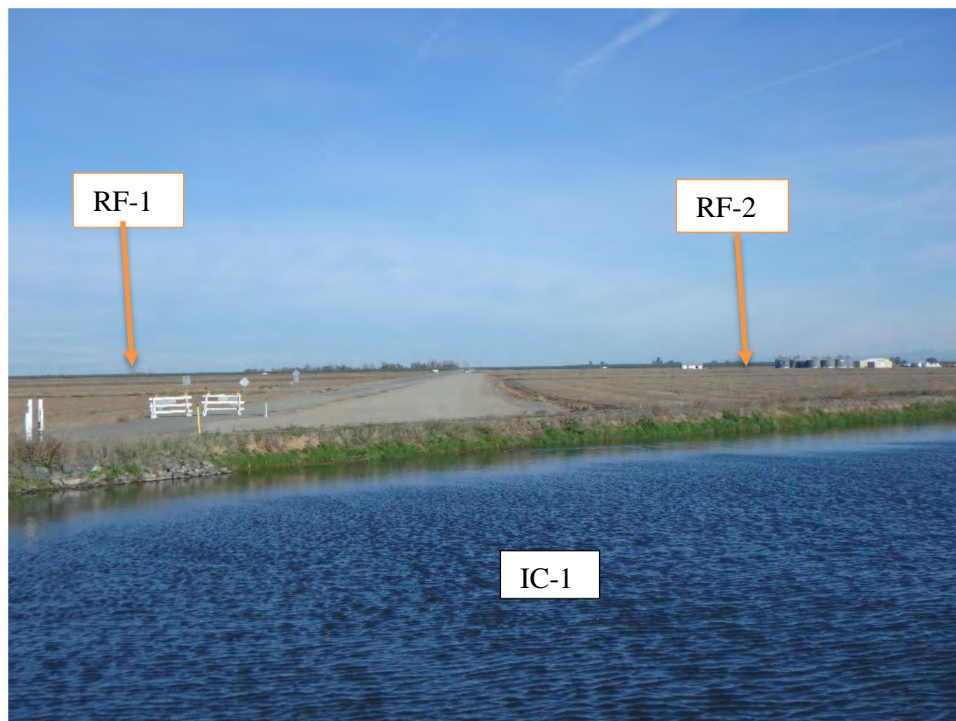
## Appendix C Representative Site Photographs

# County Road R Bridge (11C-0011) Over Glenn-Colusa Canal Replacement Project Site Photographs

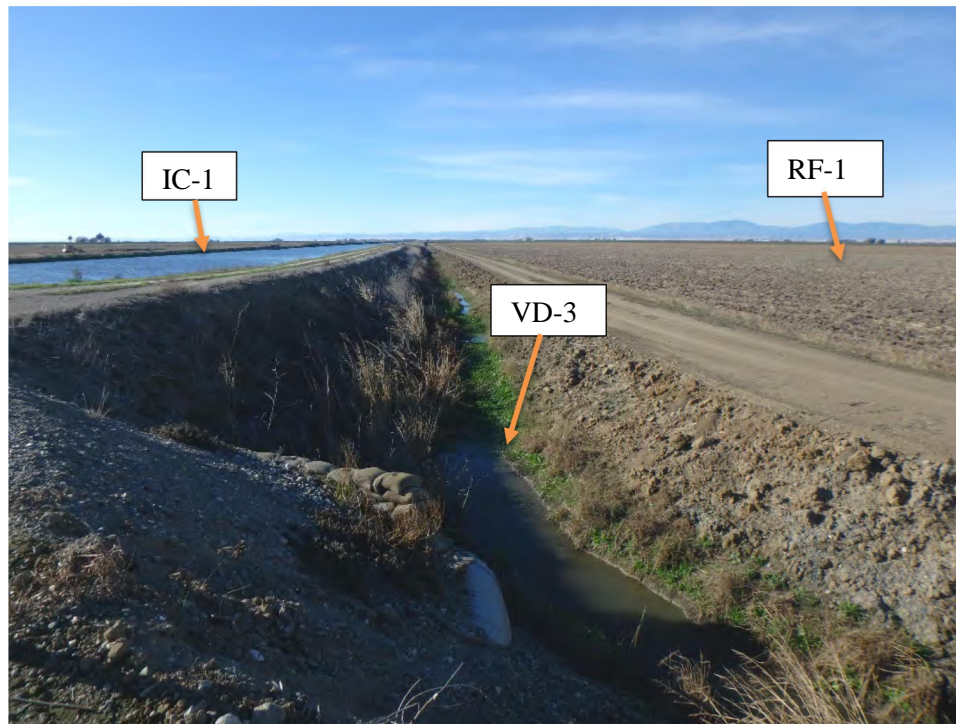
*Photographs Taken November 30, 2017*



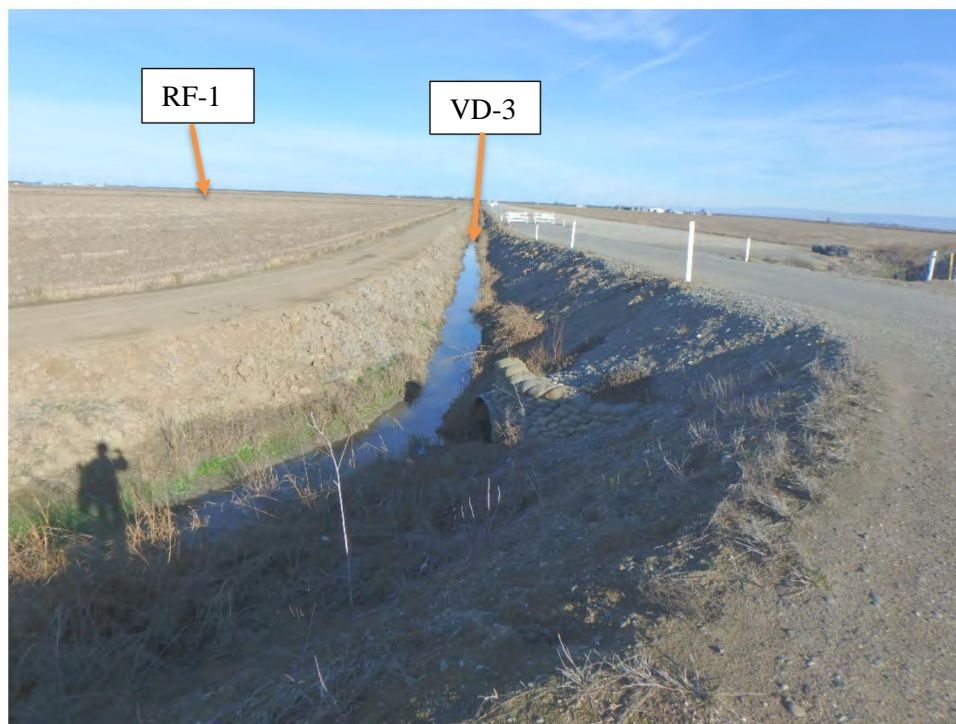
**Photograph 1.** Photograph of Glenn-Colusa canal (IC-1) bridge over County Road R.



**Photograph 2.** Photograph of irrigation canal (IC-1) and rice fields (RF-1 and RF-2) to the north of Glenn-Colusa Canal.

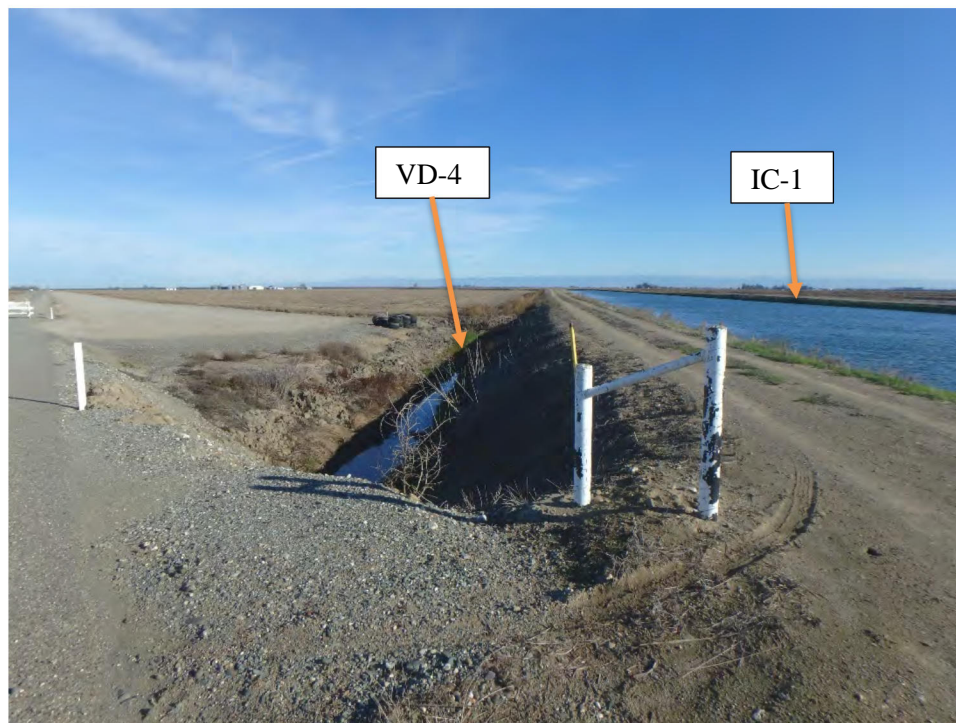


**Photograph 3.** Photograph of VD-3 on the north side of IC-1, looking west from County Road R.

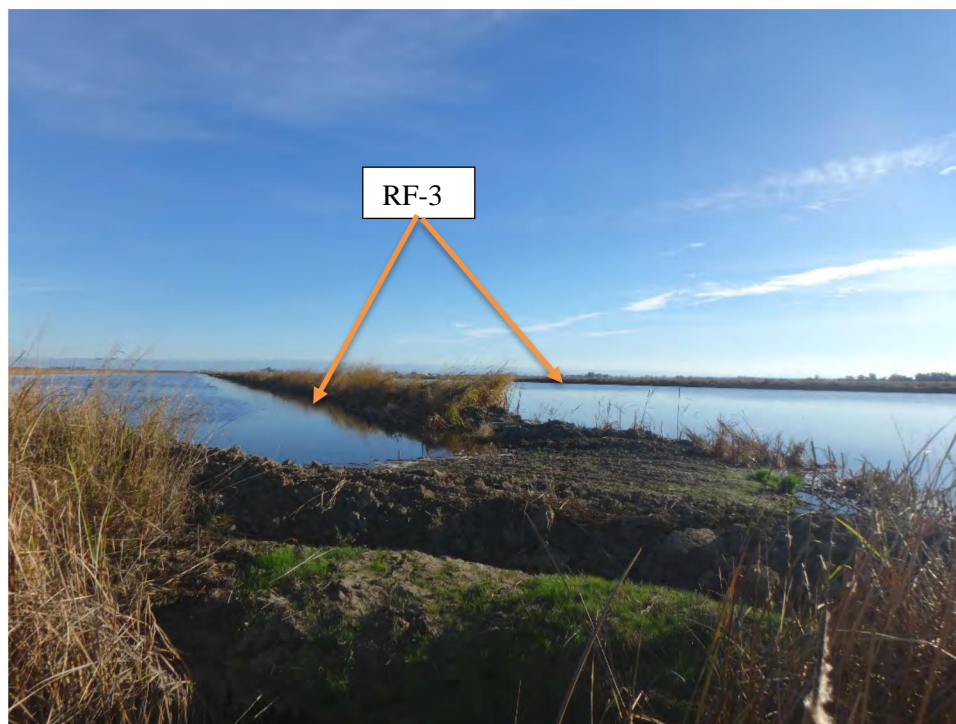


**Photograph 4.** Photograph of VD-3 on the north side of IC-1, looking south from access road.





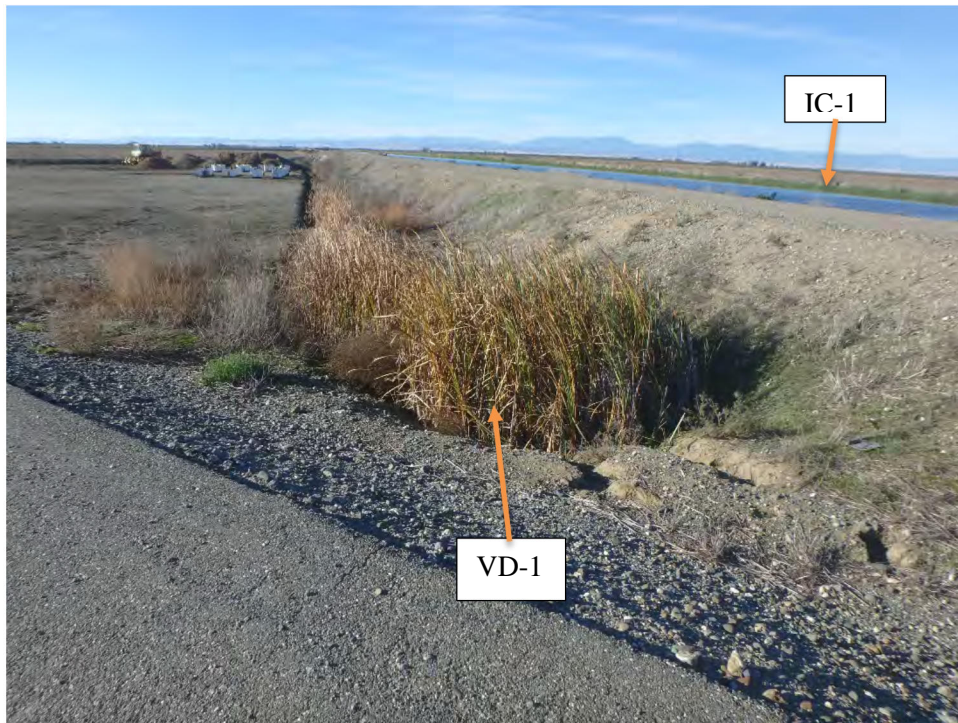
**Photograph 5.** Photograph of VD-4 on the north side of IC-1, looking east from County Road R.



**Photograph 6.** Photograph of RF-3 on the south side of IC-1, looking east from County Road R.



**Photograph 7.** Photograph of VD-1 on the south side of IC-1, looking east from western boundary of Action Area.

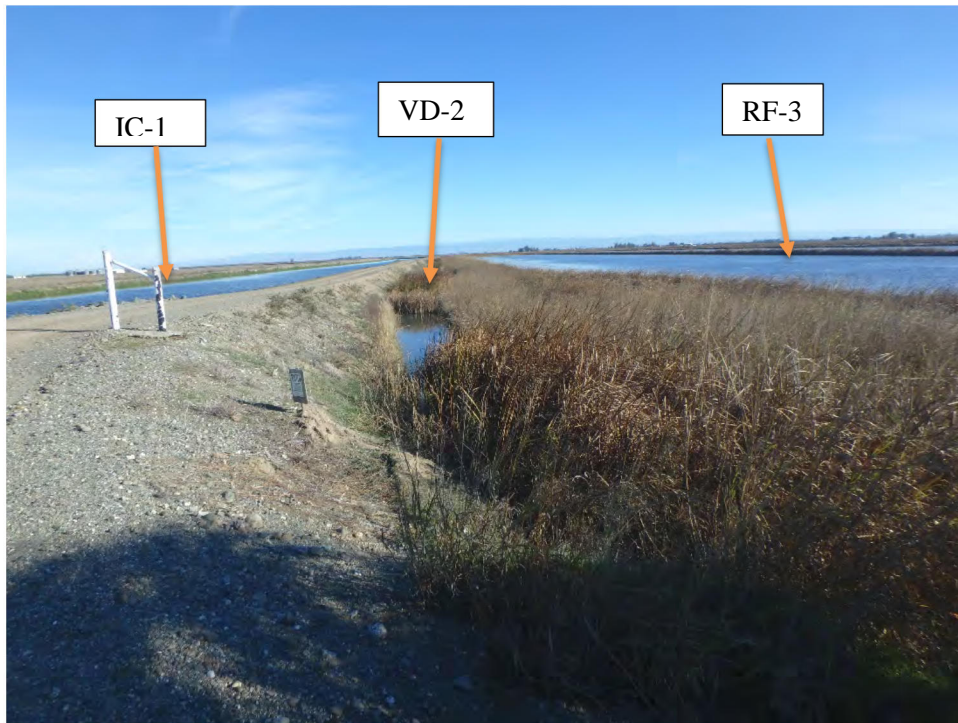


**Photograph 8.** Photograph of VD-1 on the south side of IC-1, looking east from County Road R.





**Photograph 9.** Photograph of VD-2 on the south side of IC-1, looking north near the southern boundary of the Action Area.

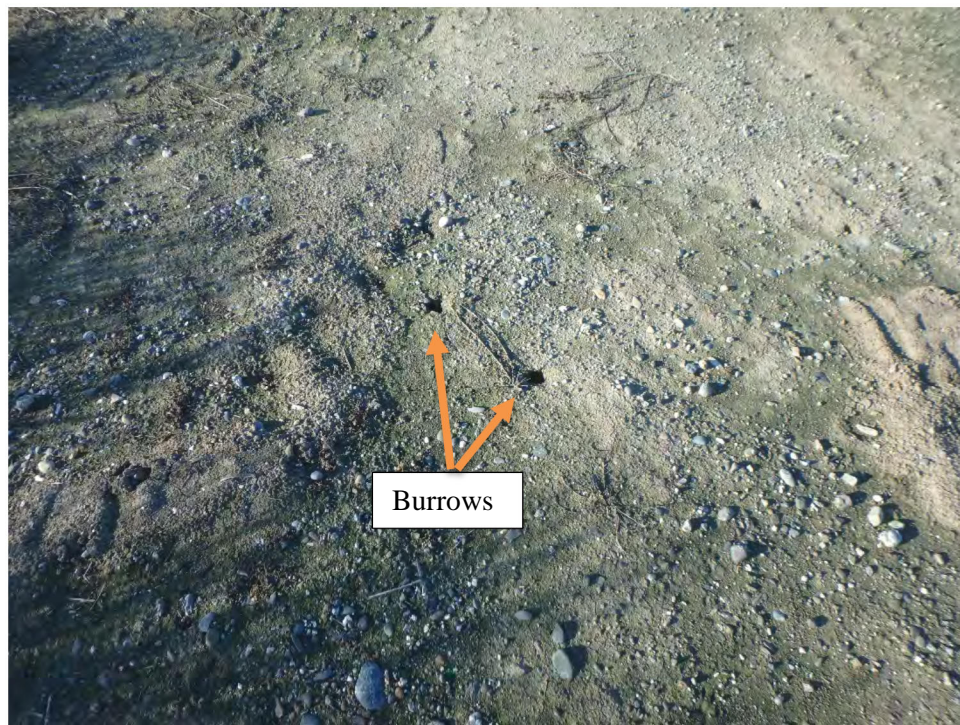


**Photograph 10.** Photograph of VD-2 on the south side of IC-1, looking east from County Road R.





**Photograph 11.** Photograph of burrows suitable for GGS adjacent to VD-1.



**Photograph 12.** Photograph of burrows suitable for GGS near the southwest portion of the Action Area.