

FINAL

**Biological Resources Letter Report for
the Santa Margarita River Fish Passage and Bridge
Replacement Project
San Diego County, California
Project ID: ID PDS2020-LDGRMJ-30309**

Prepared for:

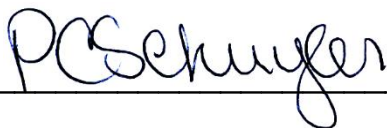
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ACRONYMS AND ABBREVIATIONS

Acronyms	Definitions
amsl	above mean sea level
BMP	best management practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
dBA	A-weighted decibel
FR	Federal Register
Leq	equivalent continuous sound level
M	Mitigation Measure
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NCMSCP	North County Multiple Species Conservation Program
OHWM	ordinary high water mark
PAMA	pre-approved mitigation area
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

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SUMMARY

This biological resources letter report was prepared to evaluate the proposed Santa Margarita River Fish Passage and Bridge Replacement Project (project). The total project area (study area), which consists of the proposed project's permanent and temporary impact area plus a 300-foot buffer, totals approximately 36.38 acres within the community of Fallbrook in unincorporated San Diego County. The study area is located within the draft North County Multiple Species Conservation Program (NCMSCP) Plan Area.

The proposed project consists of the replacement of the existing crossing structure of the Sandia Creek Drive Bridge with a span bridge and pier structure approximately 160 feet downstream. California Trout is proposing this replacement due to the impediment the current bridge has created for fish passage, and in particular, the federally listed as endangered steelhead of the Southern California steelhead Distinct Population Segment (*Oncorhynchus mykiss*) hereafter referred to as Southern California steelhead. The project positively contributes to conservation of a federally listed endangered species by addressing one of the most significant threats to Southern California steelhead recovery efforts. The project positively contributes to increased population of other native aquatic species such as arroyo chub by enhancing the natural river hydrology, and riparian species by restoring native habitat within the study area.

Vegetation mapping was conducted by Dudek in May 2018, concurrently with a wetlands delineation and an overall habitat assessment for special-status plant and animal species. Mapping was updated in July 2020. Dudek conducted focused wildlife surveys for arroyo toad (*Anaxyrus californicus*), least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii extimus*) in 2020. Rare plant surveys were also conducted in spring and summer 2020. This report documents the results of Dudek's fieldwork as well as an analysis of the impacts related to the proposed project.

Based on species composition and general physiognomy, eight plant communities and four land covers or unvegetated habitat types were identified in the approximately 36.38-acre study area. These plant communities and land cover types can be generalized to include scrub and chaparral (10.50 acres), valley and foothill grassland (1.40 acres), riparian and bottomland habitat (15.80 acres), woodland (2.60 acres), and non-natural land covers/unvegetated communities (6.12 acres).

Based on the jurisdictional delineation conducted in 2018 and mapping updated in 2020, the study area mainly supports the Santa Margarita River and smaller ephemeral drainages in the northeastern study area. The study area contains approximately 28.60 acres of jurisdictional resources which includes 6.10 acres of USACE/RWQCB jurisdictional non-wetland waters of the United States, 11.75 acres of USACE/RWQCB jurisdictional adjacent wetlands, and 10.75 acres of CDFW jurisdictional riparian area. The USACE jurisdiction overlaps and is a subset of the CDFW acreage.

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One special-status plant species, chaparral sand-verbena (*Abronia villosa* var. *aurita*) was observed within the study area but outside of the project impact area. The reconnaissance survey of the study area in 2018 and focused wildlife surveys in 2020 resulted in the detection of eleven special-status wildlife species: Cooper's hawk (*Accipiter cooperii*), southwestern pond turtle (*Actinemys pallida*), great blue heron (*Ardea herodias*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), yellow-breasted chat (*Icteria virens*), osprey (*Pandion haliaetus*), double-crested cormorant (*Phalacrocorax auritus*), yellow warbler (*Setophaga petechia*), least Bell's vireo (*Vireo bellii pusillus*), orange-throated whiptail (*Aspidoscelis hyperythra*), and southern California legless lizard (*Anniella stebbinsi*).

The proposed project would result in permanent direct impacts to 1.20 acres, composed of 0.60 acres of impacts to native vegetation, 0.02 acres of impacts to open water and non-vegetated channel, and 0.58 acres of impacts to non-native and non-natural communities and land covers. Additionally, temporary impacts would occur to 4.07 acres, composed of 1.43 acres of impacts to native vegetation, 0.28 acres of impacts to open water and non-vegetated channel, and 2.36 acres of impacts to non-native and non-natural communities and land covers. Potential significant impacts include direct and indirect effects to special-status vegetation communities, special-status plants, and special-status wildlife species. Mitigation to reduce this impact to a level that is less than significant includes biological monitoring, pre-construction surveys as necessary and appropriate for nesting birds and special status species, implementation of best management practices, and revegetation of areas subject to temporary impact during construction with genetically similar vegetation that was harvested prior to construction, and propagated in nearby sites by The Wildlands Conservancy until revegetation occurs. The project would ultimately have a positive impact on wildlife movement, as it would remove the currently existing obstruction and allow passage and further dispersal of aquatic species such as Southern California steelhead.

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1 INTRODUCTION

The purpose of this biological resources letter report prepared for the proposed Santa Margarita River Fish Passage and Bridge Replacement Project (project) is to (1) describe the existing conditions of biological resources within the study area (project impact area and a 300-foot buffer¹), including vegetation communities, jurisdictional resources, potential for special-status plants and wildlife, and wildlife movement; (2) discuss potential impacts to biological resources that would result from project construction and describe those impacts in terms of biological significance in view of federal, state, and local laws and policies; and (3) recommend mitigation measures for potential impacts to sensitive biological resources, if necessary. Recommendations follow federal, state, and local rules and regulations, including the California Environmental Quality Act (CEQA), the County of San Diego (County) Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010), the County Resource Protection Ordinance (County of San Diego 2012a), and the County's draft North County Multiple Species Conservation Program (NCMSCP) Plan (County of San Diego 2014).

1.1 Project Description

California Trout is proposing to replace the Sandia Creek Drive bridge due to the impediment it has created for fish passage, and in particular, the federally listed as endangered Southern California steelhead. Southern California steelhead in the Santa Margarita River are designated as a Core 1 population (high priority) within the National Marine Fisheries Service (NMFS) Southern California steelhead Recovery Plan (NMFS 2012). The NMFS Southern California steelhead Recovery Plan cites fish passage barriers as a high priority threat to steelhead recovery. Thus, the project positively contributes to conservation of a federally listed endangered species by remediating a high priority threat (steelhead migration barrier) in a high priority steelhead recovery river. As such, the proposed replacement of the existing crossing structure addresses one of the most significant threats to Southern California steelhead recovery efforts by removing the last remaining barrier for migration between the ocean and upstream freshwater spawning and rearing habitat at the limit of anadromy 12 miles upstream of the existing barrier known as Sandia Creek Drive.

The proposed project consists of the removal and replacement of an aging low-flow concrete box culvert river crossing that has created a significant fish passage barrier on the Santa Margarita River. The current river crossing will be removed and replaced with a new steel bridge that has two piers and three sections and spans 615 feet across the river. The bridge cross-section will be

¹ Buffer width may be slightly more or less than 300 feet in some areas due to small changes made to proposed impact areas in order to avoid impacting sensitive vegetation communities as much as possible.

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two 12-foot paved lanes with two 8-foot shoulders including a demarcated pedestrian walkway within a 68-foot right-of-way. The new steel bridge will be constructed about 160 feet downstream of the existing bridge and is designed to pass 100-year flows without overtopping. Construction is anticipated to occur over a 2.5-year period during which the existing Sandia Creek Drive will remain open for traffic until construction of the new structure is completed, at which time the old structure will be removed.

Temporary construction of an equestrian connector trail to route horse riders away from and around the construction zone will occur during January through March of 2022, ahead of the construction start, in an area that has existing significant disturbance. The trail will be approximately 8 feet wide and 600 feet long, and will be located on the east side of Sandia Creek Drive and south of the river. Trail construction will utilize hand tools including shovels, rakes, Mattock, Pulaski and limited chain saw use for trimming of vegetation. No large machinery will be involved in trail construction, and trimmed vegetation will be allowed to regrow following project completion.

The resulting new bridge will eliminate the sole remaining fish passage barrier on the Santa Margarita River mainstem to provide unimpeded passage from the ocean to the headwaters, 29 miles inland at the Santa Margarita Ecological Reserve. This project provides steelhead access to 12 miles of upstream historical spawning and rearing habitat. The project positively contributes to increased population of other native aquatic species such as arroyo chub by enhancing the natural river hydrology, and riparian species by restoring native habitat within the project area.

This multi-benefit project will improve trail user experience and safety for the Santa Margarita Trail Preserve owned by The Wildlands Conservancy; protect communities from recurring severe flood and fire events; provide uninterrupted passage of emergency responders across the river during fire and floods; re-establish the natural hydrology of the river in a major San Diego County floodplain; preserve a regional wildlife corridor; enhance riparian quality for threatened and endangered species; and increase access and safety for thousands of residents, commuters and recreational visitors that use this bridge daily.

1.2 Project Location

Dudek evaluated the proposed project's permanent and temporary impact location plus a 300-foot buffer, totaling approximately 36.38 acres (the study area). The study area is located within the northwestern portion of Section 7, Township 9 South, Range 3 West on the Temecula U.S. Geological Survey 7.5-minute quadrangle map (USGS 2018a), latitude 33°24'50.71"N and longitude 117°14'29.80"W. The study area is 100 feet southwest of the intersection of Rock Mountain Drive and Sandia Creek Drive within the community of Fallbrook in unincorporated San Diego County (Figure 1, Project Location).

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1.3 Project Setting

The study area is located within the Rainbow Creek-Santa Margarita River hydrologic area (USGS Hydrologic Unit Code 180703020503), which is located within the larger Santa Margarita River watershed (USGS Hydrologic Unit Code 1807030205).

The predominant soil type within the study area and associated with the Santa Margarita River is Riverwash (Rm); a hydric soil type (USDA 1973). Other hydric soils mapped within the study area include Steep gullied land and Tujunga sand, 0% to 5% slopes. According to the Soil Survey, San Diego Area, California (USDA 1973), five soil series occur within the study area: Cieneba soil series (Cieneba coarse sandy loam, 30% to 65% slopes, eroded; Cieneba very rocky coarse sandy loam, 30% to 75% slopes), Ramona soil series (Ramona sandy loam, 5% to 9% slopes), Tujunga soil series (Tujunga sand, 0% to 5% slopes), Visalia soil series (Visalia gravelly sandy loam, 2% to 5% slopes), and the Vista soil series (Vista rocky coarse sandy loam, 30% to 65% slopes). See Figure 2, Soils, for a visual representation of soils mapped within the study area.

The study area is located within the County of San Diego's Fallbrook Community Planning Area and has been designated as a Resource Conservation Area within surrounding areas zoned as Rural Lands (County of San Diego 2011).

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2 REGIONAL CONTEXT

2.1 Draft North County Multiple Species Conservation Program Subarea Plan

The County is currently working on a draft NCMSCP for the northern part of the unincorporated area that extends from the area around the incorporated cities of Oceanside, Encinitas, San Marcos, Vista, and Escondido, east to Cleveland National Forest and north to Riverside County. The draft NCMSCP encompasses approximately 489 square miles, including Bonsall, De Luz, Fallbrook, Harmony Grove, Lilac, Pala, Pauma Valley, Rainbow, Ramona, Rincon Springs, Twin Oaks Valley, and Valley Center. The draft NCMSCP is being prepared as a multiple species habitat conservation plan as well as a Natural Community Conservation Plan (NCCP). The draft NCMSCP's goals are to develop a preserve system that designates certain areas as draft future pre-approved mitigation areas (PAMAs), provide a regulatory process that allows for efficient permitting of developments and other projects, and to maintain the scenic beauty and diversity of natural and cultural resources for the community. As described in the draft NCMSCP, "[t]he PAMA represents areas that the County and the Wildlife Agencies recognize as important to preserve in order to meet the Plan's conservation goals." The PAMA area has been "pre-approved for mitigation because [it] had (1) high composite habitat value, (2) critical core and linkages, or (3) helped meet the conservation goals." An area designated as a PAMA contains high biological value in which conservation will be encouraged. Development in an area designated as a PAMA is possible; however, mitigation may be required. The MSCP provides coverage for 62 species, including 28 plant and 34 wildlife species (County of San Diego 2014).

While it is located within the Santa Margarita River Trail Preserve, the entire study area is located within an area presently designated as "Other Lands" (see Figure 3, Regional Context). The Santa Margarita River Trail Preserve is a nature preserve that is currently owned and managed by The Wildlands Conservancy, a nonprofit organization.

Projects within the NCMSCP planning area are subject to a Planning Agreement (2021) between the County, the CDFW, and USFWS for the NCMSCP. The Planning Agreement is intended to determine if project approval would have an effect on the preparation and approval of the future NCMSCP. The Planning Agreement outlines preliminary conservation objectives for the future NCMSCP. In addition to the preliminary conservation objectives, the Planning Agreement would identify an interim project review process.

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2.2 County Resource Protection Ordinance

The RPO, which is administered by the County, regulates biological and other natural resources within the County. These resources include wetlands, wetland buffers, floodways, floodplain fringe, steep slope lands, sensitive habitat lands, and lands containing significant prehistoric or historic sites. Generally, the ordinance stipulates that no impacts may occur to wetlands except for aquaculture, scientific research, removal of diseased or invasive exotic plant species, wetland creation and habitat restoration, revegetation and management projects, and crossings of wetlands for roads, driveways, or trails/pathways when certain conditions are met. The same exemptions apply to impacts to wetland buffer areas and improvements necessary to protect adjacent wetlands. Sensitive habitat lands are unique vegetation communities, or the habitats of rare or endangered species as defined by CEQA, including the area which is necessary to support a viable population of rare and endangered species in perpetuity, or lands essential to the healthy functioning of a balanced natural ecosystem, or lands functioning as wildlife corridors. Impacts to sensitive habitat lands are permitted when impacts have been reduced as much as possible and mitigation provides at least an equal benefit to the affected species (County of San Diego 2012a).

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3 SURVEY METHODS

Dudek biologists mapped vegetation communities and land covers, conducted a general biological survey of plants and wildlife, evaluated habitats for special-status plant and wildlife species, and conducted a formal jurisdictional delineation of the study area on May 4, 2018. Surveys were conducted on foot within the appropriate survey area for each survey type, as specified in the subsections below. Dudek conducted protocol-level wildlife surveys in 2020 for arroyo toad, least Bell's vireo (*Vireo bellii pusillus*; presence/absence surveys), and southwestern willow flycatcher (*Empidonax traillii extimus*; presence/absence surveys). Rare plant surveys were also conducted, and vegetation mapping was updated in 2020.

A summary of surveys that have been conducted in the study area is provided in Table 1. Surveys were conducted on foot and in accordance with focused survey guidelines or protocols where applicable.

Table 1
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
<i>Vegetation Mapping, Jurisdictional Delineation, Habitat Assessments, and Rare Plant Surveys</i>				
05/04/2018	0925–1300	RH, AC	Vegetation mapping, jurisdictional delineation, and habitat assessments	81°F–90°F; 0% cc; wind 1–4 mph
05/14/2020	1019 –1220	SM	Rare plant survey	70°F–80°F; 0–20% cc; wind 0–3 mph
07/27/2020	1000–1200	SM	Rare plant survey	NR
<i>Arroyo Toad Surveys</i>				
04/23/2020	1530 - 2217	JP, KS	Arroyo toad survey	65°F–88°F; 0% cc; wind 0–4 mph; water temp 72°F–74°F
05/14/2020	1630 - 2300	KS, SC	Arroyo toad survey	59°F–80°F; clear; water temp 74°F–75°F
05/21/2020	1630–2301	KS, SC	Arroyo toad survey	63°F–82°F; 0%cc; wind 0–5 mph; water temp 76°F–77°F
05/28/2020	1630–2300	BO, SC	Arroyo toad survey	64°F–80°F; 0–70% cc; wind 1–3 mph; water temp 78°F
06/19/2020	1730–0000	SC, JS	Arroyo toad survey	63°F–70°F; 30–100% cc; wind 0–3 mph; water temp 74°F–79°F
06/26/2020	1645–2315	BO, TO, CO	Arroyo toad survey	65°F–77°F; 20–50% cc; wind 0–5 mph; water temp 76°F–78°F
<i>Least Bell's Vireo and Southwestern Willow Flycatcher Presence/Absence Surveys</i>				
05/04/2020	0700 - 1015	OK	Least Bell's vireo presence/absence survey	55°F–73°F; 0% cc; wind 0–2 mph
05/15/2020	0715 - 1059	OK	Least Bell's vireo presence/absence survey; subsequent vegetation mapping	60°F–72°F; 0–90% cc; wind 0–3 mph

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Table 1
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
05/26/2020	0600 - 1000	PL	Least Bell's vireo and southwestern willow flycatcher presence/absence survey	61°F–77°F; 0-100% cc; wind 0–4 mph
06/08/2020	0600 - 0900	PL	Least Bell's vireo and southwestern willow flycatcher presence/absence survey	63°F–85°F; 0% cc; wind 0–4 mph
06/19/2020	0640 - 0930	PL	Least Bell's vireo and southwestern willow flycatcher presence/absence survey	63°F–71°F; 100%cc; wind 0–4 mph
06/30/2020	0640 - 0930	PL	Least Bell's vireo and southwestern willow flycatcher presence/absence survey	63°F–71°F; 5-100%cc; wind 0–2 mph
07/13/2020	0600 - 0920	PL	Least Bell's vireo and southwestern willow flycatcher presence/absence survey	67°F–81°F; 0-100%cc; wind 0–4 mph
07/24/2020	0710 - 1037	OK	Least Bell's vireo presence/absence survey	65°F–72°F; 0-100% cc; wind 1–3 mph

Personnel: AC = Anna Cassidy; BO = Brock Ortega; CO = Connor Ortega; KS = Kevin Shaw; JP = Jeff Priest; JS = Jeremy Sison; OK = Olivia Koziel; PL = Paul Lemons; RH = Ryan Henry; SC = Shana Carey; SM = Scott McMillan; TO = Tyge Ortega;

Notes: cc = cloud cover; NR = not recorded; mph = miles per hour.

3.1 Literature Review

Special-status plant and wildlife species present or potentially present within the proposed project footprint were identified through an extensive literature search using the following sources: U.S. Fish and Wildlife Service (USFWS) Critical Habitat and Occurrence Data (USFWS 2020a), CDFW's California Natural Diversity Database (CDFW 2020a), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants (CNPS 2020), the San Diego Plant Atlas (SDNHM 2020, the San Diego Mammal Atlas (SDNHM 2017), the San Diego Bird Atlas (Unitt 2004), the U.S. Geological Survey National Hydrography Dataset (USGS 2018b), the USFWS National Wetlands Inventory (USFWS 2020b), and the U.S. Department of Agriculture Web Soil Survey (USDA 2020a). The CNPS Inventory was queried based on the U.S. Geological Survey 7.5-minute quadrangle on which the study area is located (Temecula) and the eight surrounding quadrangles (Bachelor Mountain, Bonsall, Fallbrook, Morro Hill, Murrieta, Pala, Pechanga, and Wildomar) (i.e., nine-quad search). The remaining databases were queried using GIS software based on a 5-mile buffer around the study area. The literature review also included review of the list of plant and wildlife species proposed for coverage under the draft NCMSCP Plan (County of San Diego 2014) and species considered sensitive by the County of San Diego (County of San Diego 2010). The Soil Survey, San Diego Area, California Part 1

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(Bowman 1973) was also reviewed to identify potentially occurring special-status plants based on known soil associations. The Resource Management Plan for Santa Margarita Preserve San Diego County was also reviewed (County of San Diego 2012b).

The project study area is located within unincorporated San Diego County, in the community of Fallbrook. Since the study area is located within the County of San Diego, the County Resource Protection Ordinance (RPO; County of San Diego 2012a), Significance Guidelines and Format and Content Requirements (County of San Diego 2010), and the Planning Agreement between the County and the Agencies (County of San Diego 2021) are applicable to the proposed project. These documents were reviewed to ensure that the proposed project is consistent with relevant conservation goals and policies.

3.2 Vegetation Mapping

Native plant community classifications used in this report follow Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) as modified by the County and noted in the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Dudek conducted a general biological reconnaissance survey of the study area in 2018 to create a baseline biological resources map with vegetation mapping. Vegetation communities and land uses within the study area were mapped in the field directly onto a 1:2,400-scale (1 inch = 200 feet), aerial-photograph-based field map of the entire study area. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined. Vegetation communities in the study area were originally mapped in 2018 using CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2009) and List of Vegetation Alliances and Associations (CDFW 2020b), also referred to as the Natural Communities List, to map the entire study area. In 2020, vegetation mapping was updated and mapped communities were cross-walked to their corresponding designations according to the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008), in accordance with the County's Guidelines for Determining Significance and Report Format and Content (County of San Diego 2010). Additionally, a section of the study area previously designated as "burned-red willow-arroyo willow" in 2018 is now mapped as "southern willow scrub" and "non-native grassland" instead of its previously mapped "burned" status, to more accurately reflect current conditions.

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3.3 Special-Status Plant Surveys

Rare plant surveys were conducted by Dudek on May 14 and July 27, 2020 to determine the presence or absence of special-status plant species that are considered endangered, rare, or threatened under CEQA Guidelines Section 15380 (14 CCR 15000 et seq.). The area surveyed included the proposed impact area and immediately surrounding area and did not include the full extent of the 300-foot buffer. Plant species that were observed within the study area during field surveys were identified and are included in Appendix A, Plant Compendium. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the CNPS On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2020). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2020), and common names follow the U.S. Department of Agriculture's PLANTS Database (USDA 2020b).

3.4 Special-Status Wildlife Surveys

Dudek conducted protocol-level wildlife surveys in 2020 for arroyo toad, least Bell's vireo (presence/absence surveys), and southwestern willow flycatcher (presence/absence surveys). Incidental detections of wildlife species, either through sight, calls, tracks, scat, or other signs, were recorded and are included in Appendix B, Wildlife Compendium. Latin and common names of animals follow Crother (2012) for reptiles and amphibians, the American Ornithologists' Union for birds (AOU 2018), the North American Butterfly Association for butterflies (NABA 2016), and Wilson and Reeder (2005) for mammals.

3.4.1 Arroyo Toad

Surveys for arroyo toad, a federally endangered species and CDFW species of special concern (SSC), were conducted within one kilometer upstream and downstream of the project impact area where suitable, modeled habitat for the species was present. Survey methods were conducted pursuant to the survey guidelines outlined in the USFWS Survey Protocol for the Arroyo Toad (USFWS 1999). Dudek biologists conducted six surveys during the breeding season, which generally occurs between March 15 and July 1, with a minimum of one survey conducted per month during April, May, and June (USFWS 1999). Daytime surveys were conducted by walking slowly along stream margins and in adjacent riparian habitat visually searching for eggs, larvae, and juveniles as directed by the 1999 USFWS methods. Nighttime surveys were conducted by walking slowly along stream banks, with periodic stops at appropriate sites to wait for arroyo toads to begin calling (USFWS 1999). Surveys were conducted during appropriate weather conditions; see Table 1, for survey dates and details on survey conditions.

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3.4.2 Least Bell's Vireo and Southwestern Willow Flycatcher

Suitable habitat within the study area was surveyed eight times for least Bell's vireo and five times for southwestern willow flycatcher. Focused surveys for these species were initiated on May 4, 2020 and continued through July 24, 2020. Sequential surveys for southwestern willow flycatcher and least Bell's vireo were conducted by Dudek biologist Paul Lemons (Recovery Permit No. TE051248-6).

As directed by Stacey Love, the USFWS Recovery Permit Coordinator, surveys for vireo and flycatcher were not conducted concurrently. Due to differences in detectability, surveys were conducted sequentially, with surveys for the flycatcher first (i.e., first thing in the morning) and surveys for the vireo conducted afterward.

Surveys consisted of slowly walking a methodical, meandering transect within and adjacent to all riparian habitat within the study area. This route was arranged to cover all suitable habitat on site. Any least Bell's vireo, southwestern willow flycatcher, or other special status bird species detected were noted and mapped using the Collector app. Binoculars (8 millimeters x 32 millimeters to 10 millimeters x 50 millimeters power) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher [Sogge et al. 2010]), which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. The protocol recommends one survey between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Consistent with the protocol, surveys during the final period (June 25 and July 17) were separated by at least 5 days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. If flycatcher were detected, tape playback ceased immediately to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted Least Bell's Vireo Survey Guidelines (USFWS 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations was not used during the surveys. Surveys were conducted between dawn and noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

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3.5 Jurisdictional Delineation

Dudek biologists performed a formal (routine) wetlands delineation within the jurisdictional study area on May 4, 2018. All areas that were identified as being potentially subject to the jurisdiction of the USACE, RWQCB, and CDFW were field verified and mapped. The USACE wetlands delineation was performed in accordance with the Corps Wetlands Delineation Manual (USACE 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a), A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b), and recent changes to 33 CFR, Part 328 provided by the USACE and EPA on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA. Non-wetland waters of the United States were delineated based on the limits of an OHWM. During the jurisdictional delineation, drainage features were examined for evidence of an OHWM, saturation, permanence of surface water, wetland vegetation, and nexus to a traditional navigable water of the United States. If any of these criteria were met, transects were run to determine the extent of each regulatory agency's jurisdiction.

Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

Transects were taken approximately every 300 feet or greater if streambed conditions were unchanged. Data on transect widths, dominant vegetation present within the drainage and in the adjacent uplands, and channel morphology were recorded on field forms. In areas where USACE jurisdictional wetlands were suspected, data on vegetation, hydrology, and soils were collected along transects.

Areas regulated by the RWQCB are generally coincident with the USACE but include features isolated from navigable waters of the United States that have evidence of surface water inundation. The CDFW jurisdiction was defined to the bank of the stream/channels or to the limit of the adjacent riparian vegetation.

Drainage features were mapped during the field observation to obtain characteristic parameters and detailed descriptions using standard measurement tools. The location of transects, upstream and downstream extents of each feature, and sample points were collected in the field using a 1:2,400 scale (1 inch = 200 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy.

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Features that convey or hold water are regulated by multiple agencies. Federal, state, and local agencies have different definitions and terminology for these types of features. Water-dependent resources regulated by USACE, RWQCB, and CDFW are collectively referred to as jurisdictional aquatic resources herein. Terminology used in this document to distinguish each jurisdictional aquatic resource according to the agency that regulates the resource is as follows:

- **USACE and RWQCB:** “Wetland” and “non-wetland waters.” Wetland waters of the United States and non-wetland waters of the United States are subject to regulation by USACE and RWQCB, pursuant to the Clean Water Act. Within the study area, USACE waters of the United States and wetlands, and RWQCB waters of the United States and wetlands overlap. Therefore, the terms “non-wetland waters” or “wetlands” refer to both USACE and RWQCB jurisdictional areas.
- **CDFW:** “Riparian areas” and “streambeds.” Lakes, rivers, and streambeds, including any associated riparian habitat, are subject to regulation by CDFW pursuant to the California Fish and Game Code. The CDFW jurisdiction was defined to the bank of the stream/channels or to the limit of the adjacent riparian vegetation.

The County’s RPO (County of San Diego 2012a) identifies environmental resources, including wetlands, present within the County, and provides measures to preserve these resources. The RPO defines wetlands as lands that have one or more of the following attributes: (1) lands that at least periodically support a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) lands in which the substratum is predominantly undrained hydric soil; or (3) lands where an ephemeral or perennial stream is present and whose substratum is predominately non-soil, and where such lands contribute substantially to the biological functions or values of wetlands in the drainage system. County-regulated wetlands were identified where a predominance of hydrophytic vegetation was associated with a stream channel or where an area supported at least one of the three wetlands indicators (i.e., hydrology, hydric soils, or hydrophytic vegetation).

3.6 Survey Limitations

Direct observations of special-status plants and wildlife species were recorded during vegetation mapping and habitat assessments, jurisdictional delineation, rare plant surveys, and focused wildlife surveys. In addition to direct observations of wildlife species, signs such as tracks and scat were also recorded. Special-status species observed during these surveys were recorded and/or mapped.

Focused wildlife surveys for least Bell’s vireo, southwestern willow flycatcher, and arroyo toad were conducted per the appropriate protocols, which resulted in wildlife surveys being conducted during the day for birds and at night for arroyo toad. Although surveys were conducted during the

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day and night, allowing for detection of diurnally and nocturnally active species, many species of reptiles and amphibians are cryptic in their habits and may be difficult to observe using standard meandering transects.

To account for survey limitations, special-status wildlife species that could occur, based on pertinent distribution and habitat preference, literature and recorded off-site observations were analyzed based on their potential to occur (Appendices C-1, C-2, D-1, and D-2), and adequate measures to avoid and minimize impacts to these species are provided in this report.

Small mammal trapping was not conducted. Special-status small mammal species including Dulzura pocket mouse (*Chaetodipus californicus femoralis*) and northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) were determined to have a high potential to occur within the study area. Stephens' kangaroo rat (*Dipodomys stephensi*) is a federally listed endangered mammal species that occurs within the region. This species is not expected to occur within the study area due to minimal suitable habitat and a lack of connectivity with other suitable habitat and known occurrences. The study area is located outside of the USFWS Recommended Quino Survey Area (USFWS 2014); therefore, focused surveys for this federally endangered species were not conducted. Focused surveys for coastal California gnatcatcher (*Polioptila californica californica*) were not conducted, as suitable quality coastal sage scrub habitat is located outside of the project impact area aside from a very small, isolated patch of Diegan coastal sage scrub.

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4 HABITATS/VEGETATION COMMUNITIES

A total of eight natural vegetation communities were mapped within the study area based on general physiognomy and species composition, including coast live oak woodland, eucalyptus woodland, southern willow scrub, southern cottonwood-willow riparian forest, scrub oak chaparral, chamise chaparral (granitic), Diegan coastal sage scrub, and non-native grassland. Additionally, four non-natural or unvegetated land cover types were mapped within the study area, including non-vegetated channel or floodplain, fresh water, disturbed habitat, and urban/developed land. The vegetation communities and land cover types within the study area are described in detail below, their acreages are presented in Table 2, and their spatial distributions are presented in Figure 4, Vegetation Communities and Land Covers.

Table 2
Vegetation Communities and Land Cover Types within the Study Area

Vegetation Community or Land Cover Type	Numeric Code ^a	Map Symbol	Acres
<i>Scrub and Chaparral (30000)^a</i>			
Diegan coastal sage scrub ^b	32500	CSS	4.87
Chamise chaparral (granitic) ^b	37210	CC	1.05
Scrub oak chaparral ^b	37900	SOC	4.61
<i>Subtotal Scrub and Chaparral</i>			10.53
<i>Valley and Foothill Grassland (42000)^a</i>			
Non-native grassland ^b	42200	NNG	1.35
<i>Subtotal Valley and Foothill Grassland</i>			1.35
<i>Riparian and Bottomland Habitat (60000)^a</i>			
Southern cottonwood-willow riparian forest ^b	61330	SCWRF	5.55
Southern willow scrub ^b	63320	SWS	10.24
<i>Subtotal Riparian and Bottomland Habitat</i>			15.79
<i>Woodland (70000)^a</i>			
Coast live oak woodland ^b	71160	CLOW	2.32
Eucalyptus woodland	79100	EUC	0.28
<i>Subtotal Woodland</i>			2.60
<i>Non-natural Land Covers/Unvegetated Communities</i>			
Fresh water ^b	64140	OW	0.94
Non-vegetated channel or floodplain ^b	64200	NVC	1.50
Disturbed habitat	11300	DH	1.45
Urban/Developed	12000	DEV	2.24
<i>Subtotal Non-Natural Land Covers/Unvegetated Communities</i>			6.12
Total			36.38

^a Holland (1986) as modified by Oberbauer et al. (2008).

^b Considered sensitive (impacts require mitigation) per the County of San Diego (2010).

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4.1 Vegetation Community and Land Cover Descriptions

4.1.1 Scrub and Chaparral (30000)

Diegan Coastal Sage Scrub (32500)

Diegan coastal sage scrub is the widespread coastal sage scrub in coastal Southern California from Los Angeles into Baja California (Oberbauer et al. 2008). Diegan coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species. Diegan coastal sage scrub is characterized by subshrubs with relatively shallow root systems and open canopies. On site, the Diegan coastal sage scrub is composed primarily of four shrub species: black sage (*Salvia mellifera*), California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and laurel sumac (*Malosma laurina*). This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

South of the parking lot and east of Sandia Creek Drive on north-facing slopes in the southern portion of the study area, the Diegan coastal sage scrub is dominated by California sagebrush, but also includes deer weed and the herbaceous layer comprised of non-native grasses such as red brome, ripgut brome, and short podded mustard. In the northeastern section of the study area on the north side of Rock Mountain Drive, this vegetation community is co-dominated by both California sagebrush and California buckwheat and also a high cover of deer weed. The herbaceous layer is comprised of red brome, ripgut brome, and wild oat (*Avena fatua*). Approximately 4.87 acres of Diegan coastal sage scrub occurs within the study area.

Chamise Chaparral (Granitic) (37210)

Chamise chaparral contains shrubs, overwhelmingly dominated by chamise (*Adenostoma fasciculatum*), from 3 to 10 feet tall, with little cover provided by other species. Mature stands of granitic chamise are densely interwoven and contain few herbaceous species within the understory (Oberbauer et al. 2008). Stump sprouting allows this vegetation to adapt to repeated fires. Chamise chaparral typically occurs on dry slopes and ridges (Holland 1986). This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this community is located in the northeastern hillsides north of Rock Mountain Drive. The area is dominated by chamise with a low cover of California buckwheat. Approximately 1.05 acres of granitic chamise chaparral occur within the study area.

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Scrub Oak Chaparral (37900)

Scrub oak chaparral contains a dense, evergreen chaparral up to 20 feet tall, dominated by coastal sage scrub oak (*Quercus dumosa*) with considerable mountain mahogany (*Cercocarpus betuloides*). In San Diego County, inland scrub oak (*Quercus berberidifolia*) is often the dominant (over 50% cover) and usually occurs in small patches within a variety of other vegetation communities (Oberbauer et al. 2008). Somewhat more mesic than many chaparrals, and often occurring at slightly higher elevations (to ~ 5,000 feet). These more favorable sites recover from fire more quickly than other chaparrals. Substantial leaf litter accumulates. In San Diego County, this usually on north-facing or otherwise mesic slopes and can occur at various elevations (Oberbauer et al. 2008). This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this community encompasses the southern hills and is dominated by scrub oak, but also includes a high cover of laurel sumac (*Malosma laurina*). The study area contains approximately 4.61 acres of scrub oak chaparral.

4.1.2 Valley and Foothill Grassland (42000)

Non-Native Grassland (42200)

Non-native grassland consists of dense to sparse cover of annual grasses with flowering culms between 0.5 to 3 feet in height (Oberbauer et al. 2008). In San Diego County, the presence of wild oat, bromes, stork's bill, and mustard are common indicators. In some areas, depending on past disturbance and annual rainfall, annual forbs may be the dominant species; however, it is presumed that grasses will dominate. Impacts to non-native grassland require mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010). Mitigation is required at a ratio of 0.5:1 in locations where this habitat is not expected to support species such as burrowing owl or Stephen's kangaroo rat.

Within the study area, this community occurs in areas surrounding walking trails northwest of Sandia Creek Drive, and a small portion of the northwestern side of the study area which has been recovering from a fire in 2018. Approximately 1.35 acres of non-native grassland were mapped within the study area.

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4.1.3 Riparian and Bottomland Habitat (60000)

Southern Cottonwood-Willow Riparian Forest (61330)

Southern cottonwood-willow riparian forest is dominated by deciduous trees species: Fremont cottonwood (*Populus fremontii*) or balsam poplar (*Populus trichocarpa*), and various willow trees (*Salix* spp.) (Holland 1986). The shrub layer typically includes various willow species (Holland 1986). This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this community is located on the banks and the less-frequently flooded areas of the Santa Margarita River. Tall, mature trees including red willow, arroyo willow, Fremont cottonwood, and California sycamore comprise these areas of riparian forest within the study area. Smaller willows are present in the understory. The study area contains approximately 5.55 acres of southern cottonwood-willow riparian forest.

Southern Willow Scrub (63320)

Southern riparian woodland is moderate density riparian woodlands that is dominated by small trees or shrubs and has scattered taller riparian trees. Southern riparian woodland occurs within major river systems where flood scour occurs and smaller major tributaries. Characteristic species that are typically found in southern riparian woodland include broom baccharis (*Baccharis sarothroides*), western sycamore (*Platanus racemosa*), western cottonwood (*Populus* spp.), willow species (*Salix* spp.) and elderberry species (*Sambucus* spp.) (Oberbauer et al. 2008). This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this community is located on the banks of the Santa Margarita River. Red willow and arroyo willow co-dominate the community and comprise a close-cover canopy within the study area. Other associated tree species include California sycamore and Fremont cottonwood. The understory is comprised of annual yellow sweetclover (*Melilotus indicus*), Cucamonga manroot (*Marah macrocarpa*), mulefat (*Baccharis salicifolia*), sandbar willow (*Salix exigua*), and western ragweed (*Ambrosia psilostachya*). Approximately 10.24 acres of southern willow scrub occur within the study area.

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4.1.4 Woodland (70000)

Coast Live Oak Woodland (71160)

Coast live oak woodland is dominated by a single evergreen species: coast live oak (*Quercus agrifolia* var. *oxyadenia*), with a canopy height reaching 32.8 to 82.0 feet (10 to 25 meters). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), or laurel sumac (*Malosma laurina*). The herb component is continuous, dominated by a variety of introduced species (Oberbauer et al. 2008). This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this community is located in the uplands directly south of the Santa Margarita River. This community is dominated by coast live oak and has an understory comprised of poison oak (*Toxicodendron diversilobum*), short podded mustard (*Hirschfeldia incana*), and red brome (*Bromus madritensis* ssp. *rubens*). In addition, this community is located on a small, terraced island within the western portion of the study area along the bank of the Santa Margarita River. Within this region, this vegetation community is located alongside a hill with rock outcrops dominated by coast live oak, but also contains cover of laurel sumac, California sycamore, and some willow species. The understory is comprised of rocks and non-native grasses such as red brome and ripgut brome (*Bromus diandrus*). Approximately 2.32 acres of coast live oak woodland occur within the study area. The oak root zone is a 50-foot buffer from the coast live oak woodland. This buffer is shown in Figure 4.

Eucalyptus Woodland (79100)

According to Oberbauer et al. (2008), eucalyptus woodland is a “naturalized” vegetation community that is fairly widespread in Southern California. It typically consists of monotypic stands of Australian-introduced trees from the genus *Eucalyptus* that might consist of a variety of subspecies. The understory is either depauperate or absent due to high leaf litter, which restricts growth in understory as a result of high levels of allelochemicals. Although eucalyptus woodlands are of limited value to most native plants and animals, they frequently provide nesting and perching sites for several raptor species. Per the Guidelines for Determining Significance and Report Format and Contents Requirements, mitigation is not required for impacts to this vegetation community (County of San Diego 2010).

Eucalyptus woodland occupies 0.28 acres within the study area and is mapped within the western portion of the project’s temporary impact area. Eucalyptus species present include lemonscented gum (*Eucalyptus citriodora*) and red ironbark (*Eucalyptus sideroxylon*), with non-native grasses present in the understory.

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4.1.5 Non-Natural and Unvegetated Communities

Fresh Water (64140)

The fresh water land cover refers to freshwater lakes, streams, ponds or rivers which are not ephemeral and have very low salinity. This is used to describe areas with less than 10% vegetative cover and describes areas of water that are usually inundated (Oberbauer et al. 2008). Impacts to freshwater require mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this land cover encompasses the sections of the Santa Margarita River that are not beneath the riparian canopy. Approximately 0.94 acres of fresh water occurs within the study area.

Non-Vegetated Channel or Floodplain (64200)

Non-vegetated channel or floodplain is not recognized by Holland (1986) but is recognized by Oberbauer et al. (2008). According to Oberbauer et al. (2008), non-vegetated floodplain or channel is the sandy, gravelly, or rocky fringe of waterways or flood channels that is unvegetated on a relatively permanent basis. Vegetation may be present but is usually less than 10% total cover and grows on the outer edge of the channel. This vegetation community requires mitigation per the Guidelines for Determining Significance and Report Format and Contents Requirements (County of San Diego 2010).

Within the study area, this land cover encompasses sections within the floodplain of the Santa Margarita River that are absent of vegetation, typically consisting of sandy soils only. The study area contains approximately 1.50 acres of non-vegetated channel or floodplain.

Disturbed Habitat (11300)

Disturbed habitats are areas that have been physically disturbed and no longer recognizable as native or naturalized vegetation association (Oberbauer et al. 2008). These areas may continue to retain soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Examples of these areas may include graded landscapes or areas, graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, areas repeatedly cleared for fuel management, or repeatedly used areas that prevent revegetation (e.g., parking lots, trails that have persisted for years). No mitigation is required for this land cover type per the County of San Diego (2010).

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Within the study area, disturbed habitat encompasses the heavily maintained areas or frequently used dirt trails. This land cover is mapped surrounding the trailhead parking lot in the southeastern section of the study area, north of Sandia Creek Drive where multiple small trails are interwoven, and along roadsides. Approximately 1.45 acres of disturbed habitat occur within the study area.

Urban/Developed (12000)

Urban/developed refers to areas that have been constructed on or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). No mitigation is required for this land cover type per the County of San Diego (2010).

Within the study area, this land cover encompasses Sandia Creek Drive, Rock Mountain Drive, and the paved trailhead parking lot, consisting of 2.24 acres.

4.2 Diversity

A total of 110 species of native or naturalized plants, 76 native (69%) and 34 non-native (31%), were recorded within the study area (see Appendix A). Of the total number of plant species observed, one species that is considered special status according to the County guidelines occurs within the study area and is discussed in further detail in Section 5.1, Special-Status Plants. Appendix A includes a cumulative list of plant species observed within the project study area.

The study area supports habitat for common upland wildlife species as well as riparian and aquatic species. Chaparral and coastal scrub, woodland, and riparian habitats within the study area provide foraging and breeding habitat for migratory and resident birds and a variety of other wildlife species. There were 82 wildlife species observed in the study area during the 2020 focused surveys (see Appendix B). Of the total species observed, 78 native species (95%) and 4 non-native species (5%) were recorded, 11 of which are considered special status according to the County guidelines and are discussed further in Section 5.2, Special-Status Wildlife Species. These totals consider American beaver (*Castor Canadensis*) to be a native species, although it is considered by some biologists to be non-native to the region in which the study area is located (Tremor 2017). Appendix B includes a full list of wildlife including special-status species observed within the project study area. Expected wildlife use of the study area was determined based on known habitat preferences of local species and knowledge of their relative distributions in the area, as well as current and previous surveys conducted for the study area.

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5 SPECIAL-STATUS SPECIES

Special-status, or sensitive, biological resources are those defined by the County or other regulatory agency as (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; or (4) wildlife corridors and habitat linkages.

5.1 Special-Status Plants

Endangered, rare, or threatened plant species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as “special-status plant species” in this report and include (1) endangered or threatened plant species recognized in the context of California Endangered Species Act and federal Endangered Species Act, (2) plant species with a CRPR 1 through 4 (CDFW 2020a; CNPS 2020), and (3) plant species considered “sensitive” by the County of San Diego (Table 2 in County of San Diego 2010).

Special-status plant species directly observed during the updated focused surveys or with a potential to occur in the project area are discussed in Appendix C-1, Special-Status Plant Species Detected or with Moderate or High Potential to Occur within the Study Area, which describes their known occurrences or potential to occur within the study area based on their general biology (primary habitat associations, life form, blooming period, and known elevation range). Appendix C-2, Special-Status Plant Species with Low Potential or Not Expected to Occur within the Study Area, discusses special-status plants that are not expected to occur or with a low potential to occur within the study area based on a lack of suitable habitat, preferred soil type, known geographic range, or other reasons as described in the attached document. These appendices include all County Lists A–D species (County of San Diego 2010), as well as species recorded in the Temecula quadrangle and the surrounding eight quadrangles (CDFW 2020a; CNPS 2020; SDNHM 2017; USFWS 2020a).

One special-status plant species, chaparral sand-verbena (*Abronia villosa* var. *aurita*, San Diego County List A), was observed within the study area, just outside of the proposed temporary impact (staging) area. One individual was observed in 2020.

Special-status plant species with moderate potential to occur within the study area (but outside of the impact area which was surveyed in 2020) include California adolphia (*Adolphia californica*), San Diego ambrosia (*Ambrosia pumila*), rainbow manzanita (*Arctostaphylos rainbowensis*), Encinitas baccharis (*Baccharis vanessae*), San Diego County viguiera (*Bahiopsis laciniata*),

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Nevin's barberry (*Berberis nevinii*), Brewer's calandrinia (*Calandrinia breweri*), Lewis' evening primrose (*Camissoniopsis lewisii*), Payson's jewelflower (*Caulanthus simulans*), San Miguel savory (*Clinopodium chandleri*), paniculate summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), paniculate tarplant (*Deinandra paniculata*), western dichondra (*Dichondra occidentalis*), sticky dudleya (*Dudleya viscida*), chocolate lily (*Fritillaria biflora*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), mesa horkelia (*Horkelia cuneata* var. *puberula*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), Southern California black walnut (*Juglans californica*), pride-of-California (*Lathyrus splendens*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*), felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*), California spineflower (*Mucronea californica*), chaparral nolina (*Nolina cismontana*), golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*), Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), chaparral rein orchid (*Piperia cooperi*), Fish's milkwort (*Polygala cornuta* var. *fishiae*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*), Nuttall's scrub oak (*Quercus dumosa*), chaparral ragwort (*Senecio aphanactis*), salt spring checkerbloom (*Sidalcea neomexicana*), bottle liverwort (*Sphaerocarpos drewei*), and Parry's tetracoccus (*Tetracoccus dioicus*).

All of the plant species mentioned above as having a moderate potential to occur would only be expected to occur within the project buffer area, and have a low potential to occur or are not expected to occur within the proposed impact area as they would have likely been observed during rare plant surveys if present within the impact area.

5.2 Special-Status Wildlife Species

The County of San Diego divides sensitive wildlife species into County Group 1 and County Group 2 based on the species' rarity and known threats (County of San Diego 2010). County Group 1 species include those that have a high level of sensitivity, are listed as threatened or endangered, or have a natural history requirement that increases their sensitivity. County Group 2 species include those that are becoming less common, although not so rare that extinction is imminent without immediate action. CDFW assigns Species of Special Concern (SSC) status to species whose population levels are declining, have limited ranges, and/or are vulnerable to extinction due to continuing threats (CDFW 2020c). In addition, fully protected species are protected by CDFW, and Watch List species are candidates for higher sensitive status. USFWS provides the Birds of Conservation Concern status to migratory and non-migratory bird species that adhere to the 1988 amendment to the Fish and Wildlife Conservation Act that mandates USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973" (USFWS 2008). County Group 1 and/or SSC species, as well as County Group 2 species that have been observed in the project area, or those that have a moderate to high potential to occur,

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are discussed in this section and included in Appendix D-1, Special-Status Wildlife Species Occurring or with Moderate to High Potential to Occur within the Study Area. Species that have been observed or have potential to occur, but not during the life history phase that is considered “special status” (e.g., nesting), and those with low potential to occur or that are not expected to occur in the study area are described in Appendix D-2, Special-Status Wildlife Species with Low Potential or Not Expected to Occur within the Study Area.

The following special-status species were observed within and in the direct vicinity of the study area: Cooper's hawk (*Accipiter cooperii*; CDFW Watch List [WL]; San Diego County Group 1), southwestern pond turtle (*Actinemys pallida*; SSC; County Group 1, in compendium as *A. marmorata*), great blue heron (*Ardea Herodias*; County Group 2), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*; SSC; County Group 2), yellow-breasted chat (*Icteria virens*; SSC; County Group 1), osprey (*Pandion haliaetus*; WL; County Group 1 [breeding]), double-crested cormorant (*Phalacrocorax auratus*; WL; County Group 2 [foraging]), yellow warbler (*Setophaga petechia*; SSC; County Group 2), least Bell's vireo (*Vireo bellii pusillus*; Federally and State Endangered; County Group 1), orange-throated whiptail (*Aspidoscelis hyperythra*; WL; County Group 2), and southern California legless lizard (*Anniella stebbinsi*; SSC; County Group 2). On two occasions, a Cooper's hawk was seen northwest of the proposed impact area. One southwestern pond turtle was recorded during one survey near the southern bank of the river, near a northwestern boundary of the proposed impact area. One great blue heron was observed during a riparian bird survey on May 4, 2020. One San Diego tiger whiptail was observed during biological surveys conducted in 2020. Multiple yellow-breasted chats were observed during surveys within the study area in riparian vegetation north and south of the river (see Figure 6). One osprey was observed circling and soaring above the study area on July 24, 2020. One double-crested cormorant was observed along the river to the south of the study area. Several yellow warblers and least Bell's vireos were observed throughout riparian habitat within and near the study area (see Figure 6). An orange-throated whiptail was recorded within the study area during riparian bird surveys on May 26, 2020, and on June 9, 2020. One legless lizard was recorded during surveys of the area conducted in 2018. The study area and adjacent land supports suitable foraging and nesting habitat for migratory birds and raptors.

Additional special-status wildlife species with a high potential to occur or forage within the project area include western spadefoot (*Spea hammondi*), coast range newt (*Taricha torosa torosa*), red diamondback rattlesnake (*Crotalus ruber*), San Diego ringneck snake (*Diadophis punctatus similis*), Blainville's horned lizard (*Phrynosoma blainvillii*), two-striped gartersnake (*Thamnophis hammondi*), Southern California steelhead (anadromous form) or rainbow trout (resident form) (*Oncorhynchus mykiss*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), western small-footed myotis

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(*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), mule deer (*Odocoileus hemionus*), and cougar (*Puma concolor*) (see Appendix D-1).

Further, special-status species with a moderate potential to occur or forage within the study area include arroyo toad, rosy boa (*Lichanura trivirgata*), Coronado skink (*Plestiodon skiltonianus interparietalis*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), arroyo chub (*Gila orcuttii*), Bell's sage sparrow (*Artemisiospiza belli belli*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), golden eagle (*Aquila chrysaetos*), long-eared owl (*Asio otus*), Canada goose (*Branta canadensis*), white-tailed kite (*Elanus leucurus*), southwestern willow flycatcher (*Empidonax traillii extimus*), merlin (*Falco columbarius*), coastal California gnatcatcher, western bluebird (*Sialia mexicana*), pallid bat (*Antrozous pallidus*), ringtail (*Bassariscus astutus*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), western red bat (*Lasiurus blossevillei*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), San Diego desert woodrat (*Neotoma lepida intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), and American badger (*Taxidea taxus*). Some species, such as Bell's sage sparrow, coastal California gnatcatcher, San Diego black-tailed jackrabbit, and San Diego desert woodrat have moderate potential to use habitat within the project buffer and have lower potential to occur within the impact area. American badger is not expected to occur within the impact area where there are frequently humans present. Arroyo chub were previously documented in the area (Warburton et al. 2000), but are now rarely sighted in the Santa Margarita River, likely due to the presence of non-native aquatic species such as bass, sunfish, crayfish, bullfrogs, and bullhead.

The study area contains USFWS-designated Critical Habitat for four species which are further discussed below: arroyo toad, least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher. Southern California steelhead is also discussed in detail below.

5.2.1 Arroyo Toad

Status and Range

Arroyo toad is a federally listed endangered species, a California Species of Special Concern, a County Group 1 species, and a proposed Covered Species under the draft NCMSCP Plan. Arroyo toad is found along low-gradient streams in coastal and desert drainages as well as high-elevation valleys in southern California and northern Baja California, Mexico.

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Life History

Arroyo toad uses aquatic, riparian, and upland habitats to different degrees depending on an individual's stage of development, the time of year, and the weather. Breeding and larval development occur within aquatic habitats; foraging may occur within drying streambeds, terraces adjacent to breeding sites, and nearby uplands, where aestivation and overwintering also occur. Breeding habitat for the arroyo toad is created and maintained by the fluctuating hydrologic, geological, and ecological processes operating in riparian ecosystems and the adjacent uplands. Periodic flooding that modifies stream channels, redistributes channel sediments, and alters pool location and form, coupled with upper terrace stabilization by vegetation, is required to keep a stream segment suitable for all life stages of the arroyo toad (66 FR 9413–9474). During the day and other periods of inactivity, arroyo toads seek shelter by burrowing into sand (Sweet 1992). Thus, areas of sandy or friable (readily crumbled) soils are the most important habitat for the species, and these soils can be interspersed with gravel or cobble deposits (70 FR 19562–19633). Breeding generally occurs from late March until mid-June (Sweet 1992). Eggs are deposited in shallow aquatic habitats characterized by sandy and/or gravelly substrates and where silt deposition is minimal. The filter-feeding arroyo toad tadpoles require algal mats for development. Breeding sites are typically located adjacent to sandy terraces (59 FR 64589–64866); at or near the edge of shallow pools, low-flow stream channels, and ox-bows; and along in-stream sand bars with minimal current, and little or no emergent vegetation.

Habitat and Occurrence within the Study Area

Surveys for arroyo toad were conducted within one kilometer upstream and downstream of the project impact area where suitable, modeled habitat for the species was present. No arroyo toads were detected during the focused surveys. There are approximately 32.69 acres of modeled habitat for this species within the study area, which includes breeding habitat (i.e., aquatic habitat) and suitable upland foraging and aestivation habitat.

A total of 34.22 acres of the study area are within USFWS-designated Critical Habitat for arroyo toad, as shown in Figure 5, Critical Habitats Within the Study Area (76 FR 7245–7467).

There is moderate potential for arroyo toad to occur within the study area. There are documented occurrences downstream approximately 3 kilometers from the study area in 2008 and 2014 (CDFW 2020a) as well as one occurrence approximately 1 kilometer upstream of the existing bridge in 2015 (USFWS 2020a); however, arroyo toads were not detected during the six protocol surveys conducted by Dudek in 2020. This moderate potential to occur considers the mobility of the species and the potential for the species to colonize the study area or move up or down the river system in certain years if, for example, rainfall changes existing habitat conditions within the study

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area to be more suitable for arroyo toad. Some potential reasons for a lack of arroyo toads within the study area include presence of detrimental and non-native species such as bullfrogs, presence of beavers potentially causing ponded areas of deep water that support bullfrogs, and frequent use of the creek by humans in suitable arroyo toad habitat.

5.2.2 Least Bell's Vireo and Southwestern Willow Flycatcher

Status, Habitat, and Range

Least Bell's vireo and southwestern willow flycatcher are both federally and state listed endangered species, County Group 1 species, and proposed Covered Species under the draft NCMSCP Plan.

Least Bell's vireo inhabits low, dense valley foothill riparian habitat, including willows, and desert riparian habitat (Zeiner et al. 1990). This species is endemic to California and northern Baja California, common in coastal southern California from Santa Barbara County south. Least Bell's vireo is a rare, summer resident found in elevations below 2,000 feet, inhabiting willow thickets adjacent to water or along dry parts of intermittent streams.

Willow flycatcher inhabits wet meadow and montane riparian habitats (Zeiner et al. 1990). This species occurs between 2,000 feet and 8,000 feet in elevation in the Sierra Nevada and Cascade Range. Willow flycatcher nests and roots in dense willow thickets, and builds an open, cup nests in an upright fork of the willow or other shrub (Stein 1963).

Habitat and Occurrence within the Study Area

Approximately 36.38 acres of the study area are within USFWS-designated Critical Habitat for least Bell's vireo, and 22.75 acres for southwestern willow flycatcher, as shown in Figure 5 (59 FR 4845–4867; 78 FR 343–534).

Several least Bell's vireos were detected during each focused survey pass during the 2020 focused survey effort. Some vireos were observed directly but most were detected by hearing males singing, indicating that breeding territories were being established over the course of the survey effort. Vireos were most often observed in the survey area within suitable riparian habitat, and occasionally in adjacent oak woodland. No vireo nests were detected during focused surveys; however, nesting is expected to occur within the study area. Based on review of the mapped results, it is estimated that there are 8 to 10 vireo males attempting to establish breeding territories within the focused survey area. See Figure 6, Biological Resources: Special-Status Species, for locations of least Bell's vireo observations within the study area. See also Appendix E, 2020 Focused

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Southwestern Willow Flycatcher and Least Bell's Vireo Survey Report for the Santa Margarita River Bridge Replacement Project, San Diego County, California.

There is a moderate potential for southwestern willow flycatcher to occur within the study area. Although the species was not detected within the study area during the surveys conducted by Dudek, the study area supports dense and multi-tiered native riparian habitat with open water which is highly suitable for southwestern willow flycatcher. Although this species is exceedingly rare within Southern California and San Diego County, a moderate potential to occur considers that the species is migratory so could recolonize the study area.

5.2.3 Coastal California Gnatcatcher (*Poliioptila californica californica*)

Status and Range

Coastal California gnatcatcher is a federally listed threatened species, a County Group 1 species, and a proposed Covered Species under the draft NCMSCP Plan. This species occurs in coastal Southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. California gnatcatcher occurs mainly on cismontane slopes (coastal side of the mountains) in Southern California, ranging from Ventura and northern Los Angeles Counties south through the Palos Verdes Peninsula to Orange, Riverside, San Bernardino, and San Diego Counties. The species' range continues south to El Rosario, Mexico. Initially it was reported that 99% of all coastal California gnatcatcher locality records occurred at or below an elevation of 984 feet above mean sea level (amsl) (Atwood 1993; Atwood and Bolsinger 1992). Since that time, data collected at higher elevations show that the species may occur as high as 3,000 feet amsl, but that more than 99% of the known coastal California gnatcatcher locations occur below 2,500 feet amsl (65 FR 63680–63743). Because of the natural topography of the Southern California hills and mountain ranges, most of the higher-elevation locations are more inland, where population densities tend to be much lower than coastal populations.

Life History

Coastal California gnatcatcher typically occurs in or near coastal scrub vegetation that is composed of relatively low-growing, dry-season deciduous and succulent plants. Characteristic plants of this community include coastal sagebrush, various species of sage, California buckwheat, lemonade sumac (*Rhus integrifolia*), California brittle bush (*Encelia californica*), and cactus (e.g., *Opuntia* spp.). Coastal California gnatcatcher also occurs in chaparral, grassland, and riparian vegetation communities where the coastal scrub community is close (Bontrager 1991). Use of these vegetation communities appears to be most frequent during late summer, autumn, and winter, with smaller numbers of birds using such areas during the nesting season. Coastal California

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gnatcatcher tends to occur most frequently in the coastal sagebrush–dominated stands on mesas, gently sloping areas, and along the lower slopes of the Coast Ranges (Atwood 1990). Coastal California gnatcatcher occurs in high frequencies and densities in coastal scrub communities with an open or broken canopy, but it is absent from coastal scrub dominated by tall shrubs and occurs in low frequencies and densities in low coastal scrub with a closed canopy (Weaver 1998).

Coastal California gnatcatcher gleans insects and spiders from foliage of shrubs, primarily California buckwheat and coastal sagebrush (Atwood 1993). Its diet is primarily composed of spiders, but is also composed of wasps, bees, and ants (Burger et al. 1999). Coastal California gnatcatcher habitat use has been positively associated with insect abundance and diversity (Redak et al. 1996, as cited in Diffendorfer et al. 2002).

Coastal California gnatcatcher nests usually are located in a small shrub or cactus 1 to 3 feet above the ground. Territory size varies and is influenced by season and locale (Preston et al. 1998) but is unrelated to vegetation structure (Braden et al. 1997). During the breeding/nesting season, territories in coastal areas are often smaller—averaging 5.7 acres (Atwood et al. 1998)—than those in more inland regions, which average 8.4 acres (Braden et al. 1997).

Habitat and Occurrence in the Study Area

The study area supports approximately 36.38 acres of USFWS-designated Critical Habitat for coastal California gnatcatcher, as shown in Figure 5 (65 FR 63680–63743). Approximately 4.87 acres of this area is Diegan coastal sage scrub suitable for nesting and foraging, and 18.11 acres is riparian vegetation which is potentially suitable foraging habitat for coastal California gnatcatcher.

Coastal California gnatcatcher typically only nests within the sage scrub vegetation community. Thus, the species has moderate potential to occur (nest and forage) within the study area, however, within the impact area it only has the potential to forage within the small amount of riparian vegetation that will be impacted, and thus is not expected to be significantly impacted by implementation of the proposed project. The most recent documented occurrence of this species is from 2001, 4 miles south of the study area (CDFW 2020a). The nearest known occurrence is roughly 3.5 miles southwest of the study area, from 1998 (CDFW 2020a). Coastal California gnatcatcher was not detected within the study area during any of the field surveys conducted by Dudek.

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5.2.4 Southern California Steelhead

Status and Range

The Southern California steelhead DPS (distinct population segment) was federally listed as endangered in 1997 in the Southern California ESU that extends from the Santa Maria River in the north southward to Malibu Creek without critical habitat (62 FR 43937–43954). In 2002 the range of the Southern California ESU was extended south to the United States–Mexico Border (67 FR 21586–21598). On January 5, 2006, the federally endangered status of the Southern California steelhead was re-affirmed for 10 Distinct Population Segments (DPS) of West Coast Steelhead (71 FR 834).

The range of the Southern California steelhead is from the Santa Maria River along the San Luis Obispo–Santa Barbara County line in the north to the Tijuana River just north of the United States–Mexico border in the south. The 2012 Southern California steelhead Recovery Plan cites historic usage of coastal Southern California waters by steelhead especially prior to the mid-1900s, which informed the extent of the current Recovery Planning Area (NMFS 2012):

The Southern California steelhead (SCS) Recovery Planning Area extends from the Santa Maria River to the Tijuana River at the U.S.-Mexico border. It includes both those portions of coastal watersheds that are at least seasonally accessible to steelhead entering from the ocean, and the upstream portions of watersheds that are currently inaccessible to steelhead due to man-made barriers but were historically used by steelhead. Major steelhead watersheds in the northern portion of the SCS Recovery Planning Area include the Santa Maria, Santa Ynez, Ventura, and Santa Clara Rivers, and Malibu and Topanga Creeks. Major steelhead watersheds in the southern portion of the SCS Recovery Planning Area include the San Gabriel, Santa Margarita, San Luis Rey, San Dieguito, and Sweetwater Rivers, and San Juan and San Mateo Creeks.

There is significant documentation of steelhead runs in coastal California, of inland resident rainbow trout populations, and of historic usage of steelhead along coastal Southern California (Abadia-Cardoso et al. 2016; NMFS 2016). The distribution of Southern California steelhead within the ocean is not well known, but some evidence indicates that they stay relatively close to the coast and even near the mouths of their natal streams, in contrast to other Pacific salmonid species that range widely in the ocean (NMFS 2007).

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Critical Habitat and Recovery Planning

The NMFS designated final critical habitat for five steelhead ESUs on September 2, 2005 (70 FR 52488–52586). The NMFS identified the following primary constituent elements (PCEs) in designating steelhead critical habitat (70 FR 52521):

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.
2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
3. Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
4. Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.
5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.
6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

The Santa Margarita River is not designated Critical Habitat for the Southern California steelhead DPS. The NMFS Southern California steelhead Recovery Plan required by the federal ESA was published in January 2012 (NMFS 2012). The Santa Margarita River is included in the Southern California steelhead Recovery Planning Area and is designated as a high priority Southern California steelhead recovery river according to an intrinsic potential analysis (NMFS 2012).

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Life History

Oncorhynchus mykiss historically populated all coastal streams of Southern California with permanent flows, as either resident or anadromous trout, or both. In streams with access to the ocean, anadromous forms are present, which have a complex relationship with the resident forms. Southern California steelhead occurring below artificial or natural barriers were distinguished from resident trout in the Endangered Species Act (ESA) listing and are under different jurisdictions for purposes of fisheries management although the two forms typically constitute one interbreeding population. Genetic analyses indicate that Southern California steelhead and upstream resident trout form a cluster of related fish from the Santa Maria River south to Baja California (Abadia-Cardoso et al. 2016). Their distinctiveness presumably relates to their adaptations to the unique environment of Southern California (California Trout 2017).

Distinctive life history patterns of Southern California steelhead mainly relate to the variable environment in which they evolved and to their opportunistic life history strategies (Kendall et al. 2015; Sloat and Reeves 2014). Southern steelhead are dependent on winter rains to provide upstream passage through seasonally opened estuaries and mainstem river flows providing hydrologic connectivity to upstream tributaries. The reliance on rainstorms for permitting passage through lower portions of watersheds suggests a restricted spawning period for steelhead, with considerable flexibility in timing. Spawning typically occurs between January and May, with a peak in February through mid-April (NMFS 2012), although variation may occur across diverse geographies.

Three predominant life history patterns have been described for south-central coastal steelhead which are also likely important for southern steelhead: fluvial anadromous, freshwater resident, and lagoon-anadromous (Boughton et al. 2007; Kendall et al. 2015). Juvenile steelhead usually remain in freshwater for one to three years before emigrating to the ocean (Moore 1980; Quinn 2005; Shapovalov and Taft 1954). Southern steelhead, however, probably spend less time in freshwater during migrations because of inhospitable conditions (low flows, warm temperatures, poor water quality) in the lower reaches of their streams.

Juvenile and adult life history plasticity is characteristic of southern steelhead populations (Kendall et al. 2015). In fluvial anadromous life history, southern steelhead outmigration is dictated by the breaching of lagoon sandbars (physical barriers of sand at the mouth of lagoons), typically between January and June, with a peak from late March through mid-May (NMFS 2012). Ocean swells and high tides can lead to temporary bar breaching during the summer and fall, draining lagoons and allowing juvenile trout to emigrate to the ocean. While barriers may limit access to upstream areas, out-migrating juveniles often originate upstream of such barriers. In below-barrier reaches they can mature and interbreed with anadromous individuals. Perennial habitats are limited in lowland reaches, however, amplifying the significance of lagoons as rearing habitat (Hayes and Kocik

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2014; Kelley 2008). Channel connectivity is critical for steelhead to access spawning areas. It is likely that during dry years the largest steelhead populations historically occurred in streams where upstream spawning and rearing habitats were close to the ocean (USFWS 1998).

Southern steelhead require cool, clear, well-oxygenated water with sufficient food, but they have adapted to living under highly variable environmental conditions. Thus, their physiological tolerances may be broader than other steelhead. In general, southern steelhead seem to tolerate warmer water temperatures than their northern counterparts. Their body temperature and metabolic rate fluctuate with the temperature of the surrounding environment. As temperature increases, their metabolic and feeding rate increases until the temperature approaches an upper threshold of about 25°C where they stop feeding and/or move to a refuge area, but this response depends on proximity of refuge areas, cover and food availability (Boughton, et al. 2015; Sloat and Osterback 2013; Sloat and Reeves 2013). Important aquatic environmental factors for steelhead include temperature, dissolved oxygen, salinity, and water depth.

Southern steelhead have been either significantly depleted or extirpated from rivers and streams in which they historically occurred. There are still remnants of self-sustaining populations in the Santa Ynez, Ventura, Santa Maria, and Santa Clara rivers and Topanga Creek. Episodic runs occur in some watersheds of all BPGs, including Gaviota, Arroyo Honda, Goleta Slough Complex, Mission, Malibu, San Gabriel, and San Mateo creeks and Santa Margarita and San Luis Rey Rivers. Historical runs in this DPS that numbered in the thousands are now reduced to single digits over the past 20 years for the Santa Clara, Ventura, and Santa Ynez rivers and Malibu and Topanga creeks (Dagit et al 2020; NMFS 2016).

Habitat and Occurrence in the Study Area

The Santa Margarita River is the longest free-flowing river on the Southern California coast and has unique characteristics for a southern California stream due to perennial water flow and relatively undeveloped state (River Focus 2020). Within the study area, the Santa Margarita River has a mixture of flow regimes. Substrate is homogenous, dominated by small substrates (sand, silt, clay), with a small gravel, cobble, and bedrock component. Terrestrial riparian vegetation provides some instream shelter on the margins, but overall instream cover is very low. In general, this stretch of river is expected to act as a migration corridor.

Habitat quality for steelhead within the Santa Margarita River varies greatly within the watershed. Within the study area the habitat quality transitions from low quality downstream of the barrier, to good quality habitat upstream of the barrier, in which the Sandia Creek Drive bridge presents a barrier to steelhead migration (Cardno ENTRIX 2013) (Figure 5). The reach upstream of the Sandia Creek Drive bridge was determined to have the best rearing pool habitat in the middle Santa

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Margarita watershed due to long, deep pools, and the most suitable spawning habitat even though potential spawning areas were embedded with fines (Cardno ENTRIX 2013). Habitat improvements are currently ongoing upstream of the study area in the Santa Margarita Ecological Reserve in anticipation of the removal of barriers including the Sandia Creek Drive Bridge which will allow steelhead to access spawning and rearing habitat higher in the watershed.

Steelhead have occupied the Santa Margarita River historically, and recent observations indicate that steelhead may return periodically. In the 1940s CDFW reports indicate that steelhead were observed near Temecula, the Fallbrook area, and De Luz Creek (Cardno ENTRIX 2013). In 2009, three steelhead juveniles were captured and photographed just downstream of the Sandia Creek Drive barrier near the confluence with Sandia Creek. DNA analysis conducted on one of the fish by NOAA demonstrated that it was of native steelhead lineage with no hatchery introgression (Cardno ENTRIX 2013). One *Oncorhynchus mykiss* individual was incidentally observed within the study area in 2020 during a focused survey for least Bell's vireo and southwestern willow flycatcher, but positive identification was not confirmed by a fisheries biologist and this is therefore considered a possible (unconfirmed) occurrence. The origin of these fish is unknown. *O. mykiss* are not known to currently reside as stable populations in the Santa Margarita River.

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6 JURISDICTIONAL WETLANDS AND WATERWAYS

6.1 Jurisdictional Resources

Based on the jurisdictional delineation conducted in 2018 and mapping updated in 2020, the study area mainly supports one perennial drainage which is the Santa Margarita River, and smaller ephemeral drainages present within the northeastern project buffer area. The study area contains approximately 28.60 acres of jurisdictional resources which includes 6.10 acres of USACE/RWQCB jurisdictional non-wetland waters of the United States, 11.75 acres of USACE/RWQCB jurisdictional adjacent wetlands, and 10.75 acres of CDFW jurisdictional riparian area (Table 3). The USACE jurisdiction overlaps and is a subset of the CDFW acreage (Figure 7, Jurisdictional Aquatic Resources). These aquatic resources originate outside of the jurisdictional study area in undeveloped areas of the Gavilan Mountains and near Temecula to the north and east. Construction of the Sandia Creek Road bridge has altered the hydrologic and biological setting of the Santa Margarita River. Other disturbances within the study area include routine, ongoing sediment and vegetation clearing around the bridge to maintain existing roads and facilities, and the parking area for the 18-mile trail system of the Santa Margarita Trail Preserve owned and managed by The Wildlands Conservancy.

Table 3
Jurisdictional Resources within the Study Area

Jurisdictional Resources	Acres^a
USACE/RWQCB/CDFW Non-Wetland Waters	6.10
USACE/RWQCB/CDFW Wetlands	11.75
CDFW-Only Riparian	10.75
Total Acres	28.60

^a Totals may not sum due to rounding.

See Appendix F, 2018 Jurisdictional Delineation Report, for a full report describing jurisdictional resources mapped in 2018 within the project impact area plus a 500-foot buffer.

6.2 Resource Protection Ordinance

RPO wetlands occur within the study area and are shown in Figure 7. The RPO wetlands correspond to the limits of the Santa Margarita River and adjacent riparian areas and include the southern cottonwood-willow riparian forest, southern willow scrub, portions of coast live oak woodland mapped as CDFW riparian vegetation, non-vegetated channel, and open water.

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7 OTHER UNIQUE FEATURES/RESOURCES

The entire study area is located within the Santa Margarita River Trail Preserve, owned and managed by The Wildlands Conservancy, and is designated as “Other Lands” in the draft NCMSCP (see Figure 3). The on-site elevation ranges between 320 and 513 feet amsl. The study area consists of the Santa Margarita River and associated riparian habitat and tributary, and hills vegetated with native scrub and chaparral surround the riparian habitat and are included in the northeastern and southern sections of the study area. Two paved public roads (Sandia Creek Drive and Rock Mountain Drive), a parking lot at the trailhead of the Preserve hiking area, and the Santa Margarita River hiking trail system run through the study area. Aside from the paved roads, the land immediately adjacent to the study area is largely undeveloped. Low density residential communities and agriculture occur outside the study area to the north, a County of San Diego Park is located to the south, and U.S. Marine Corps Base Camp Pendleton is located to the west of the study area.

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability by ensuring the continual exchange of genes between populations, which helps maintain genetic diversity; providing access to adjacent habitat areas, representing additional territory for foraging and mating; allowing for a greater carrying capacity; and providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires).

Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. The linkage represents a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat islands that function as steppingstones for dispersal.

The Santa Margarita River and the study area within this watershed are part of the Santa-Ana – Palomar Mountains Linkage for wildlife. This Linkage is one of only two remaining natural areas in southern coastal California that provides connections between protected coastal and inland habitats. It is listed by the South Coast Missing Linkages Project as one of the 15 priority linkages needed to establish an ecologically viable network of wildlands in the South Coast Ecoregion (Luke et al. 2004). The associated habitat provides an opportunity for wildlife movement for a wide variety of animal species. The majority of the study area including the proposed impact area has either high or very high habitat value according to Figure 3-1 in the Draft NCMSCP Habitat Evaluation Model (County of San Diego 2009), given that it supports or contains suitable habitat for a wide variety of wildlife (e.g., birds, reptiles, fish, large

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mammals such as cougars [*Puma concolor*] and coyote [*Canis latrans*]), and including special-status species. These wildlife species would be expected to use the habitat that is located within the study area and adjacent land for both year-round habitat as well as dispersal corridors during migration or dispersal to new territories. The bridge replacement will facilitate wildlife movement within the Santa-Ana – Palomar Mountains Linkage by virtue of its elevated structure above the river to minimize negative land impacts, maximize native riparian area, and provide safe passage for wildlife beneath the bridge. Near its southern and northeastern boundaries, the study area also contains moderate and low habitat value according to the draft NCMSCP Habitat Evaluation Model (County of San Diego 2009).

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8 SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

This section addresses direct, indirect, and cumulative impacts to biological resources that would result from implementation of the proposed project. A number of mitigation measures are included as part of the proposed project to avoid, minimize, and/or mitigate potential impacts to less-than-significant levels.

As described in Section 1.1, Project Description, California Trout will remove an existing river crossing that is currently an impediment to Southern California steelhead movement downstream. This structure will then be replaced approximately 160 feet downstream with a steel bridge that has two pier structures and three sections and spans 615 feet across the river. Due to the difficult terrain within the project vicinity, a perimeter work area and a staging area will be used within the immediate vicinity of the proposed project. Following project completion, the perimeter work area and staging area will be restored to their pre-existing condition and revegetated to restore habitat functionality. The creation of the new bridge will consist of permanent and temporary impacts. The footprint of pier structures and any areas which are graded for bridge construction which cannot be revegetated following project completion will be considered permanent impacts, and the perimeter work area/staging area and existing road/structure removal area will be considered a temporary impact.

Direct impacts refer to complete loss of a biological resource. For purposes of this report, it refers to the area where built structures, such as piers, displace or replace natural habitat, and where vegetation clearing, grubbing, or grading replaces biological resources. Direct impacts were quantified by overlaying the proposed impact limits on the biological resources map of the study area.

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct disturbance zone. Indirect impacts may affect areas outside the disturbance zone, including open space and other land within the study area. Indirect impacts may be short-term and construction-related, or long-term in nature and associated with development in proximity to biological resources.

Cumulative impacts refer to the combined environmental effects of the proposed project and other relevant projects.

The evaluation of proposed project impacts using the thresholds of significance presented above is organized by the resource potentially affected: special-status species, riparian and sensitive vegetation communities (special-status vegetation communities), and wildlife movement.

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8.1 Sensitive Vegetation Communities

8.1.1 Direct Impacts to Sensitive Vegetation Communities

The proposed project includes a steel bridge that spans 615 feet across the Santa Margarita River, a perimeter work area, and a staging area which will result in a total of 1.20 acres of permanent impacts and 4.07 acres of temporary impacts to vegetation communities and land cover types (Table 4 and Table 5) (Figure 8, Impacts). The project will permanently impact approximately 0.76 acres of sensitive habitat, or habitat for which impacts require mitigation per the County guidelines (i.e., scrub oak chaparral, non-native grassland, southern cottonwood-willow riparian forest, southern willow scrub, coast live oak woodland, fresh water, and non-vegetated channel), and will include temporary impacts to 2.72 acres of sensitive vegetation communities and land covers (**Impact V-1**) (Table 4 and Table 5) (Figure 8). Thus, impacts to eucalyptus woodland, disturbed habitat, and urban/developed land will not require mitigation, while impacts to all remaining natural communities and land cover types mentioned above will require mitigation.

Mitigation to reduce this impact to a level below significant includes habitat restoration following ratios recommended by the County's Guidelines for Determining Significance for Biological Resources (2010) as displayed in Table 4 and Table 5, including habitat restoration within temporary impact areas associated with bridge construction and the removal of the existing road to mitigate for permanent impacts to approximately 0.55 acres of riparian vegetation (i.e., southern cottonwood-willow riparian forest, southern willow scrub, and coast live oak woodland), and temporary impacts to 1.43 acres of riparian vegetation. Restoration within temporary impact areas will include restoration of natural unvegetated habitat to previous contours where appropriate, as well as planting of native vegetation which will be approved by The Wildlands Conservancy and implemented through funding for the bridge construction project.

Table 4
Permanent Impacts and Mitigation for the Santa Margarita River Fish Passage and Bridge Replacement Project

Vegetation Community/ Land Cover Type	Study Area (Acres)	Permanent Impacts (Acres)	County Mitigation Ratio^a
<i>Scrub and Chaparral (30000)</i>			
Diegan coastal sage scrub (32500)	4.87	None	1:1 to 3:1
Chamise chaparral (granitic) (37210)	1.05	None	0.5:1
Scrub oak chaparral (37900)	4.61	0.05	1:1
<i>Valley and Foothill Grassland (42000)</i>			
Non-native grassland (42200)	1.35	0.14	0.5:1

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Table 4
Permanent Impacts and Mitigation for the Santa Margarita River Fish Passage and Bridge Replacement Project

Vegetation Community/ Land Cover Type	Study Area (Acres)	Permanent Impacts (Acres)	County Mitigation Ratio ^a
<i>Riparian and Bottomland Habitat (60000)</i>			
Southern cottonwood-willow riparian forest (61330)	5.55	0.17	3:1
Southern willow scrub (63320)	10.24	0.16	3:1
<i>Woodland (70000)</i>			
Coast live oak woodland (71160)	2.32	0.23	3:1
Eucalyptus woodland (79100)	0.28	0.08	None
<i>Non-Natural Land Covers and Unvegetated Communities</i>			
Fresh water (64140)	0.94	None	3:1 ^b
Non-vegetated channel or floodplain (64200)	1.5	0.02	3:1 ^b
Disturbed habitat (11300)	1.45	0.12	None
Urban/developed (12000)	2.24	0.24	None
Total^c	36.38	1.20	--
<i>Oak Root Zone – 50 Foot Buffer Surrounding Coast Live Oak Woodland</i>			
Oak Root Zone	3.32	0.26	3:1

^a County of San Diego 2010.

^b Wetland mitigation shall include a minimum 1:1 creation component, while restoration/enhancement of existing wetlands may be used to make up the remaining requirements for a total 3:1 ratio (County of San Diego 2010).

^c Totals may not sum due to rounding.

Table 5
Temporary Impacts and Mitigation for the Santa Margarita River Fish Passage and Bridge Replacement Project

Vegetation Community/ Land Cover Type	Study Area (Acres)	Temporary Impacts (Acres)	Mitigation Ratio
<i>Scrub and Chaparral (30000)</i>			
Diegan coastal sage scrub (32500)	4.87	None	N/A
Chamise chaparral (granitic) (37210)	1.05	None	N/A
Scrub oak chaparral (37900)	4.61	None	N/A
<i>Valley and Foothill Grassland (42000)</i>			
Non-native grassland (42200)	1.35	1.00	0.5:1
<i>Riparian and Bottomland Habitat (60000)</i>			
Southern cottonwood-willow riparian forest (61330)	5.55	0.72	1:1 ^b
Southern willow scrub (63320)	10.24	0.68	1:1 ^b

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Table 5
Temporary Impacts and Mitigation for the Santa Margarita River Fish Passage and Bridge Replacement Project

Vegetation Community/ Land Cover Type	Study Area (Acres)	Temporary Impacts (Acres)	Mitigation Ratio
<i>Woodland (70000)</i>			
Coast live oak woodland (71160)	2.32	0.04	1:1 ^b
Eucalyptus woodland (79100)	0.28	0.20	None
<i>Non-Natural Land Covers and Unvegetated Communities</i>			
Fresh water (64140)	0.94	0.17	1:1
Non-vegetated channel or floodplain (64200)	1.5	0.11	1:1
Disturbed habitat (11300)	1.45	0.33	None
Urban/developed (12000)	2.24	0.83	None
Total^b	36.38	4.07	--

^a Totals may not sum due to rounding.

^b Mitigation ratios are less than the County mitigation ratios because these areas of temporary impacts will be restored following project construction.

8.1.2 Indirect Impacts to Sensitive Vegetation Communities

Potential short-term indirect impacts to sensitive vegetation communities in the study area at the boundary of the construction limits would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; increased human activity during construction; and the introduction of chemical pollutants. (**Impact V-2a**). Long-term indirect impacts to sensitive vegetation communities would be those occurring after construction and would include changes in hydrology resulting from construction, including sedimentation and erosion (**Impact V-2b**). These potential impacts are described below.

Generation of Fugitive Dust. Excessive dust can decrease the vigor and productivity of vegetation through effects on light penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

Increased Human Activity. Increased human activity could result in the potential for trampling of vegetation outside of the directly impacted areas, as well as soil compaction, and could affect the viability of plant communities. Trampling can alter the ecosystem, creating gaps in vegetation and allowing non-native plant species to become established, and may lead to soil erosion. Trampling may also affect the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion.

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Chemical Pollutants. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect special-status vegetation communities. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

Changes in Hydrology. Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. Hydrologic alterations include changes in flow rates and patterns in streams, which may affect adjacent and downstream vegetation communities. The river is currently trapped in a non-natural configuration due to the low-flow box culvert structure. Upon removal of the existing Sandia Creek Drive concrete crossing, the river is anticipated to restore to a more natural hydrologic state and channel movement. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

8.1.3 Significant Impacts to Sensitive Vegetation

Impact V-1: Direct Impacts to Sensitive Vegetation Communities within the Study Area

Direct permanent impacts to 0.74 acres of sensitive vegetation communities (i.e., scrub oak chaparral, non-native grassland, southern cottonwood-willow riparian forest, southern willow scrub, and coast live oak woodland) would result from construction of the two pier structures and associated features of the project design such as riprap, which cannot be revegetated following completion of construction. Direct temporary impacts to 2.44 acres of sensitive vegetation communities (i.e., scrub oak chaparral, non-native grassland, southern cottonwood-willow riparian forest, southern willow scrub, and coast live oak woodland) within the study area would result from the associated staging and access areas and existing road/crossing structure removal area (**Impact V-1**). Additionally, 0.02 acres of non-vegetated channel would be permanently impacted, and 0.28 acres of non-vegetated channel and fresh water would be temporarily impacted (**Impact V-1**). Consistent with the County's Section 4(d) and the RPO, mitigation will consist of habitat restoration within the temporary impact area to accomplish the required acreage of restoration of functional habitat that is suitable for the sensitive species known to occur within the study area. Natural unvegetated habitat (i.e., non-vegetated channel) that is temporarily impacted will be returned to original contours and conditions, when appropriate. Direct temporary impacts could occur along the interface between construction and non-impacted areas. Clearing, trampling, or grading impacts to vegetation communities outside of the designated construction zone could create gaps in vegetation that allow non-native plant species to become established. Potential direct

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impacts to sensitive vegetation communities would be significant absent mitigation. However, these permanent and temporary direct impacts would be mitigated to less than significant through implementation of **M-BI-1** (biological monitoring), **M-BI-2** (temporary construction fencing or flagging), and **M-BI-12** (revegetation plan). These measures are further described in Section 8.7, Mitigation Measures and Design Considerations; with implementation of these measures, potentially significant impacts to sensitive vegetation communities within the study area would be mitigated to **less than significant**.

Impact V-2: Indirect Impacts to Sensitive Vegetation Communities within the Study Area

Potential short-term and long-term indirect impacts to sensitive vegetation communities in the study area would primarily result from construction activities, and include impacts related to or resulting from the generation of fugitive dust, altered hydrology, increased human activity, and the introduction of chemical pollutants (**Impact V-2a; Impact V-2b**). Absent mitigation, potential short-term and long-term indirect impacts to special-status vegetation communities that occur within the study area would be significant. Potential short-term indirect impacts to sensitive vegetation communities and land covers would be mitigated to **less than significant** through implementation of **M-BI-1** (biological monitoring), which would prevent work from occurring outside the development footprint during construction; **M-BI-2** (temporary construction fencing or flagging), which would prevent trampling during construction and also prevent work from occurring outside of the limits of work; and **M-BI-13** (best management practices) and **M-BI-14** (specific channel protection measures), which would prevent fugitive dust, chemical pollutants, and changes in hydrology through implementation of best management practices. Potential long-term indirect impacts to sensitive vegetation communities and land covers which could include changes in hydrology as a result of project implementation would be mitigated to **less than significant** through implementation of **M-BI-14**, which would ensure that unintended negative impacts to the channel (i.e., river) are avoided. The full text of these mitigation measures is presented in Section 8.7.

8.2 Special-Status Plant Species

8.2.1 Direct Impacts to Special-Status Plant Species

The proposed project would not result in direct impacts to special-status plant species. The special-status plant species observed within the study area, chaparral sand-verbena, was observed outside of the impact area (staging area) and consisted of one individual detected in 2020.

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8.2.2 Indirect Impacts to Special-Status Plant Species

Most of the indirect impacts to vegetation communities described in Section 8.1.2, Indirect Impacts to Sensitive Vegetation Communities, can also affect special-status plant species described in Section 5.1 as having moderate potential to occur within the study area or occurring within the study area (i.e., chaparral sand-verbena). These potential impacts would be short-term in nature and would include the following (**Impact SP-1**): generation of fugitive dust, changes in hydrology, increased human activity, introduction of non-native species, and introduction of chemical pollutants. Clearing, trampling, or grading impacts to special-status plants outside of designated construction zones could occur in the absence of proper avoidance and mitigation measures. These potential effects could damage individual plants and alter their ecosystem, creating gaps in vegetation that allow non-native plant species to become established, thus increasing soil compaction and leading to soil erosion. Any special-status plant species near the limits of construction could be affected by potential indirect impacts, such as those listed in Section 8.1.2. Indirect impacts to special-status plant species would be considered significant, absent mitigation.

8.2.3 Significant Impacts to Special-Status Plant Species

Impact SP-1: Indirect Impacts to Special-Status Plant Species

Most of the indirect impacts to vegetation communities described in Section 8.1.2 can also affect sensitive plants. Additionally, clearing, trampling, or grading impacts to special-status plants outside of designated construction limits could occur in the absence of avoidance and mitigation measures. Potential short-term or long-term indirect impacts to special-status plant species observed or determined to have potential to occur in the study area would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust, changes in hydrology, increased human activity, introduction of non-native species, and introduction of chemical pollutants (**Impact SP-1**). Absent mitigation, these indirect impacts would be significant. These indirect impacts would be mitigated to **less than significant** through implementation of **M-BI-1** (biological monitoring), **M-BI-2** (temporary construction fencing or flagging), **M-BI-3** (ESA for special-status plants), and **M-BI-13** (best management practices). The full text of these mitigation measures is presented in Section 8.7.

8.3 Special-Status Wildlife Species

8.3.1 Direct Impacts to Special-Status Wildlife Species

Direct impacts to special-status wildlife species listed as occurring within the study area or with moderate or high potential to occur in Section 5.2 and Appendix D-1 were quantified by comparing the project footprint with suitable habitat for wildlife species. Implementation of the proposed

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project would result in the temporary and permanent direct loss of habitat, including foraging habitat, for County of San Diego Group 1, Group 2, and SSC wildlife species that are present or have a high or moderate potential to occur within the study area. Specifically, the proposed project would result in the permanent direct impacts to approximately 0.76 acres of habitat for special-status wildlife. There will be no direct impacts to coastal sage scrub as a result of this project, which is the vegetation community that coastal California gnatcatchers are mostly associated with utilizing. There is a small, isolated patch of coastal sage scrub adjacent to the temporary impact area (staging area). There will be some direct impacts to riparian habitat which has the potential to serve as foraging habitat for coastal California gnatcatcher. There are temporary impacts to habitat suitable for special-status wildlife from the perimeter work area and road removal area which will be restored. Direct impacts could occur along the interface between construction and non-impacted areas. Clearing, trampling, or grading impacts to vegetation communities outside of the designated construction zone could occur in the absence of avoidance and mitigation measures. These potential impacts could reduce suitable habitat for wildlife species and alter their ecosystem, thus creating gaps in vegetation that allow non-native plant species to become established (**Impact W-1**).

The proposed project impacts would occur within federally designated critical habitat for the following special-status wildlife species: arroyo toad, least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher; therefore, there will be direct impacts to critical habitat (**Impact W-2**) (Figure 5). Permanent impacts would occur to approximately 1.20 acres of USFWS-designated critical habitat for arroyo toad, 1.20 acres of critical habitat for least Bell's vireo, 0.78 acres of critical habitat for southwestern willow flycatcher, and 1.20 acres of critical habitat for coastal California gnatcatcher. There are temporary impacts to critical habitat from the perimeter work area and road removal area which will be restored.

Construction activities would result in the permanent loss of suitable habitat for least Bell's vireo and the temporary removal of suitable habitat. These impacts could result in "take" of least Bell's vireo since they are documented within the study area (**Impact W-3**). Additionally, southwestern willow flycatcher, arroyo toad, and Southern California steelhead have moderate potential to occur within the study area and impacts could result in take of these species if they are present within the impact area during construction activities (**Impact W-3**). Coastal California gnatcatcher has moderate potential to occur in the study area, but is not expected to nest within the impact area due to a lack of suitable habitat, and thus direct impacts to this species are not expected to occur.

Construction activities could result in direct impacts to special-status wildlife species individuals if present within the impact area during construction activities (**Impact W-4**). Several special-status wildlife species, as discussed in Section 5.2 and Appendix D-1, were recorded within, or have a high or moderate potential to occur within the study area. Direct impacts could occur to

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special-status bat individuals with moderate or high potential to occur, as they could be present within the impact area and can be very difficult to detect. Additionally, construction activities that are conducted during the avian breeding season (January 1 through September 15) may result in direct impacts to nesting birds. Under the Migratory Bird Treaty Act (MBTA; 66 FR 3853–3856) and California Fish and Game Code, direct impacts to individual special-status wildlife, active nests, or the young of nesting special-status bird species would be significant.

8.3.2 Indirect Impacts to Special-Status Wildlife Species

Short-term and long-term indirect impacts to special-status wildlife species associated with construction activities are not likely to have significant effects on special-status wildlife populations because the project will improve the habitat for all of these species. Presence of construction crews may temporarily displace animals that regularly forage or nest in the area.

Disturbance impacts have been fairly well documented for a number of species including deer, small mammals, reptiles, and nesting and perching birds. Most species exhibit a “flight” response to disturbance, resulting in temporary displacement, or if disturbance is constant, permanent displacement. Flight responses and/or disturbances can negatively affect animal health by requiring increased energy expenditures. Some terrestrial species, such as salamanders, lizards, snakes, and burrowing rodents may be negatively affected by nearby use of heavy equipment, overland crew travel, and use of hand tools. Any wildlife that might occur in the study area would have sufficient time to move away from project implementation activities. The amount of direct mortality or injury is expected to be limited due to the relatively small impact area.

This project is small-scale relative to the surrounding Santa Margarita Trail Preserve landscape. This project will not create additional fragmentation of the habitat or create barriers to movement for animal species. In general, this project may have short-term negative impacts to wildlife species within the study area but would not have any long-term negative impacts. The goal of the project is to have a long-term positive impact by removing the last significant barrier for migration of Southern California steelhead along the Santa Margarita River.

However, noise generated by construction activities that are conducted during the breeding season (January 1 through September 15), could result in short-term indirect impacts to nesting birds (**Impact W-5**). Noise related to these activities has the potential to disrupt reproductive and feeding activities. Under the MBTA and the California Fish and Game Code, take of active nests or the young of nesting bird species protected under these regulations would be significant, absent mitigation.

Other indirect impacts to avian foraging and nesting and wildlife access to foraging could result from construction activities (**Impact W-6**). Species potentially affected by such activities include

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those described in Section 5.2 and Appendix D-1. Potential indirect impacts to these wildlife species may include the following: generation of fugitive dust, introduction of chemical pollutants, changes in hydrology, introduction of non-native species, noise, increased human activity, and unnatural lighting. The potential impacts are described in detail below.

Generation of Fugitive Dust/Chemical Pollutants/Altered Hydrology. The effects of the indirect impacts listed above on special-status wildlife are similar to what is described in Section 8.1.2 for sensitive vegetation communities. Construction activities could impact the water quality within and downstream of the proposed impact area. Runoff, sedimentation, or chemical pollution could reduce the water quality for aquatic species such as Southern California steelhead or arroyo chub without the implementation of mitigation measures.

Non-Native, Invasive Plant and Animal Species. Trash from construction-related activities could attract a higher-than-normal number of predators to the project area such as common ravens (*Corvus corax*) and coyotes that could impact the sensitive wildlife species in the study area.

Noise/Increased Human Activity. Construction-related noise and vibration could occur from equipment used during site preparation and grading, including vegetation clearing, destruction of the existing bridge, and construction of the new bridge. Construction-related noise generators could have an indirect impact on wildlife species. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, as cited in Lovich and Ennen 2011).

Increased human activity due to the presence of a crew while construction occurs can temporarily deter wildlife from using habitat areas in and near the construction area. Implementation of this bridge replacement project would not be expected to increase the amount of human activity within the study area in the long term, since the project consists of the replacement of an existing bridge. The location of some human activity and vehicular traffic would be shifted spatially approximately 160 feet downstream of the existing bridge location, but the frequency and amount of human presence in the area is not expected to increase significantly.

Lighting. Some localized security-related lighting may be required during construction. Lighting would conform to County of San Diego outdoor lighting requirements. These impacts would be short term. Construction would occur during the day; no construction is proposed to take place at night.

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8.3.3 Significant Impacts to Special-Status Wildlife Species

The project applicant has been working closely with the USFWS, CDFW and the NMFS on the proposed project. The project applicant will comply with any and all conditions that the USFWS and NMFS may require for take of listed species pursuant to the FESA.

Impact W-1: Direct Impacts to Habitat for Special-Status Wildlife Species

Permanent direct impacts to approximately 0.76 acres of suitable habitat and temporary impacts to 2.72 acres of suitable habitat for special-status wildlife species (County Group 1, Group 2, or SSC), including all those listed as occurring or with moderate or high potential to occur in Section 5.2 and Appendix D-1, would result from construction-related activities and would be significant absent mitigation (**Impact W-1**). The proposed project would include biological monitoring (**M-BI-1**) to ensure avoidance of unnecessary direct impacts to habitat as well as ensure avoidance of direct impacts to wildlife. Other mitigation measures include temporary construction fencing or flagging (**M-BI-2**) to avoid and minimize impacts to habitat outside of work limits, and mitigation for impacts to habitat including revegetation of temporary impact areas following construction (**M-BI-12**). With implementation of mitigation measures mentioned above, and implementation of **M-BI-13** (best management practices), direct impacts to habitat of County Group 1 or Group 2 or SSC wildlife species would be **less than significant**. The full text of these mitigation measures is presented in Section 8.7.

Impact W-2: Direct Impacts to USFWS-Designated Critical Habitat

Direct impacts to USFWS-designated Critical Habitat for arroyo toad, least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher (**Impact W-2**) would be minimized and mitigated through implementation of **M-BI-1**, which includes biological monitoring to ensure avoidance of unnecessary direct impacts to habitat, **M-BI-2**, which includes the use of temporary construction fencing or flagging to avoid and minimize impacts to habitat outside of work limits, and through habitat restoration following project construction (**M-BI-12**). Habitat restoration would include revegetation of temporary impact areas following completion of construction activities. Any natural unvegetated areas which are temporarily impacted will be returned to previous contours following construction, when appropriate (i.e., when returning the area to previous contours does not negate the effort being made to improve habitat conditions for other special-status species such as Southern California steelhead). Implementation of mitigation measures including the same measures as described above for **Impact W-1** would serve the same purpose to minimize impacts to critical habitat. Therefore, with the mitigation proposed, direct impacts to Critical Habitat for arroyo toad, least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher would be **less than significant**.

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Impact W-3: Direct Impacts to Wildlife Species with USFWS-Designated Critical Habitat

Implementation of the proposed project would result in direct permanent and temporary impacts to USFWS-designated critical habitat for least Bell's vireo, southwestern willow flycatcher, arroyo toad, and coastal California gnatcatcher (**Impact W-3**). The project applicant has been working closely with the USFWS, CDFW and the NMFS on the proposed project. Impacts to listed-species and critical habitat for those species would require consultation with these agencies and would be addressed through implementation of **M-BI-3**, which states that the project applicant will comply with any and all conditions that the USFWS and NMFS may require for take of listed species pursuant to the FESA.

Impact W-4: Direct Impacts to Special-Status Wildlife and Nesting Birds Protected Under the MBTA

If any active nests or the young of nesting bird species are impacted through removal of the existing bridge or direct grading, these impacts would be significant absent mitigation, based on the MBTA (**Impact W-4**). Direct impacts to other special-status wildlife species that occur or may occur within the work area as discussed in Section 5.2 would also be significant absent mitigation. It is recommended that initiation of construction activities and clearing of vegetation occur outside of the typical nesting period for most bird species and raptors (i.e., outside the period of February 1 through September 15 and as early as January 1 for some raptor species) to limit impacts to nesting birds and raptors. If construction or vegetation clearing is required within the nesting period, a pre-construction nesting bird survey or surveys would be conducted, as described in **M-BI-4** for all nesting birds, and **M-BI-5** during the riparian bird nesting season.

The proposed project could also result in direct impacts to special-status wildlife species during initial grading or clearing and grubbing of vegetation, and during removal and replacement of the bridge (**Impact W-4**). It is anticipated that de-watering of Santa Margarita Creek would occur at times during construction; direct impacts to aquatic species such as Southern California steelhead or arroyo chub, could occur during rescue and relocation activities. Southern California steelhead has a high potential to occur in the study area, while arroyo chub has a moderate potential to occur. Although salmonids typically respond well to handling, there could be incidental injury and death to individuals as a result of handling; it is also possible that the rescue program may not capture and release every individual fish. A biological monitor would be required to be on site to flush wildlife from occupied habitat areas immediately prior to brush-clearing and ground-disturbing activities, thus avoiding and minimizing the potential for direct impacts to protected birds and other special-status wildlife (**M-BI-1**). Additional mitigation measures would be implemented to ensure avoidance and minimization of impacts to special-status reptiles (**M-BI-6**), arroyo toad (**M-BI-7**), Southern California steelhead (**M-BI-8**), arroyo chub (**M-BI-9**), special-status bats (**M-BI-10**), and special-status rodents (**M-BI-11**). **M-BI-13** includes prevention of wildlife entrapment

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within trenches or other potential pitfalls in the work area by ensuring that escape routes are created for use in case wildlife should become trapped. With implementation of these mitigation measures, direct impacts to nesting birds including raptors, and to other special-status wildlife species would be **less than significant**.

Impact W-5 and W-6: Indirect Impacts to Special-Status Wildlife and Nesting Birds

Potential short-term indirect impacts to special-status wildlife species and nesting birds include temporary impacts to avian foraging and nesting and wildlife access to foraging within the impact area, as well as generation of fugitive dust, introduction of chemical pollutants, changes in hydrology, introduction of non-native species and attraction of a higher-than-normal amount of predators to the project area, noise disturbance, increased human activity, and artificial lighting (**Impact W-5; Impact W-6**). These indirect impacts would be mitigated to **less than significant** through implementation of the following measures. Per **M-BI-1**, a biological monitor would ensure implementation of relevant measures to minimize indirect impacts caused by construction activities. A biological monitor will be present during work activities that are expected to generate excessive noise, in order to monitor for biological concerns and ensure that work activities are conducted in such a way that potentially disruptive noise is minimized to the extent possible. Installation and presence of physical noise barriers would be more detrimental than beneficial as it could impact wildlife movement through the area and would require direct impacts to habitat in order to install. Additional measures include **M-BI-2**, which would minimize human disturbance outside of the work limits during construction by installing temporary construction fencing or flagging, **M-BI-5**, which would incorporate appropriate buffers around active nests to avoid disturbance during construction or alternatively construction would be curtailed during the breeding/nesting season of migratory bird species, and **M-BI-13** and **M-BI-14**, which would prevent fugitive dust, limit trash and chemical pollutants during construction and would prevent unwanted changes in hydrology through implementation of best management practices. Indirect impacts to Southern California steelhead include construction-related erosion or disturbance of sediments and soils may occur which could temporarily increase downstream turbidity and sedimentation in the vicinity of the construction activities if soils were transported downstream via creek flow or stormwater runoff. These indirect impacts would be mitigated to **less than significant** through implementation of **M-BI-13**, best management practices, and **M-BI-14**, which includes specific channel protection measures.

8.4 Jurisdictional Aquatic Resources and RPO

The proposed project would result in direct permanent impacts to approximately 0.54 acres of jurisdictional resources and direct temporary impacts to 1.79 acres of jurisdictional resources, including CDFW riparian habitat adjacent to jurisdictional waters as summarized in Table 6

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(Impact J-1). These areas are also considered RPO wetlands. The purpose of the project is to replace the existing Sandia Creek Drive bridge, which has trapped the river in a static configuration and is negatively impacting passage of Southern California steelhead between the ocean and freshwater spawning and rearing areas, and mobility of other aquatic species. Therefore, impacts to jurisdictional resources are necessary due to the nature of this project and to benefit special-status wildlife species, such as Southern California steelhead. Unintended impacts such as water contamination and changes to hydrology which could result from construction activities would be avoided and minimized with implementation of **M-BI-13**, best management practices, and **M-BI-14**, which includes specific channel protection measures. Considering these factors, and that temporarily impacted jurisdictional areas would be restored to pre-construction conditions and contours where appropriate (**M-BI-12**, post-construction revegetation), negative impacts to jurisdictional aquatic resources would be **less than significant**.

Any proposal that involves impacting jurisdictional drainages within the study area through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, maintenance, or any other modification would require permits from the USACE or the CDFW programmatic 404 permit through RGP78 for Southern California, the RWQCB, and the CDFW before any earth-moving activities could commence. Both permanent and temporary impacts are regulated and would trigger the need for these permits (**M-BI-15**).

This project is exempt from the Resource Protection Ordinance (RPO) of San Diego County (2007) pursuant to Section 86.604 (5). According to Section 86.604, crossings of wetlands for roads, driveways, or pathways necessary to access adjacent lands, and which are dedicated and improved to the limitations and standards under the County Trails Program, shall be allowed provided criteria (aa) through (ff) are met. Section 86.604 states that if no reasonable use of the sensitive land would be permitted by the RPO regulations, then an encroachment may be allowed to the minimum extent necessary (County 2007). The project meets conditions (aa) through (ff) for the permitted uses of wetlands as summarized below.

(aa) There is no feasible alternative that avoids the wetland. The purpose of the project is to remove the existing wetland crossing and install a better alternative. Thus, the wetland cannot be avoided if the goals of the project are to be accomplished.

(bb) The crossings are limited to the minimum number feasible. The bridge design takes the surrounding sensitive habitat into consideration and is designed to minimize impacts to sensitive species and resources.

(cc) The crossings are located and designed in such a way as to cause the least impact to environmental resources, minimize impacts to sensitive species and prevent

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barriers to wildlife movement (e.g., crossing widths shall be the minimum feasible and wetlands shall be bridged where feasible). The bridge design takes the surrounding sensitive habitat into consideration and is designed to minimize impacts to sensitive species and resources. The area currently floods due to the constricted nature of the existing roadway. The current road is a barrier for fish passage and as such, the proposed replacement of the existing crossing structure addresses one of the most significant threats to Southern California steelhead recovery efforts by removing the last remaining barrier for migration between the ocean and upstream freshwater spawning and rearing habitat at the limit of anadromy 12 miles upstream of the existing barrier known as Sandia Creek Drive.

(dd) The least-damaging construction methods are utilized (e.g., staging areas shall be located outside of sensitive areas, work shall not be performed during the sensitive avian breeding season, noise attenuation measures shall be included and hours of operation shall be limited so as to comply with all applicable ordinances and to avoid impacts to sensitive resources). Staging areas will be located outside of sensitive habitat, and the least-damaging construction methods will be used in order to minimize impacts. Work is scheduled to occur during daylight hours only, and outside of the avian breeding season to the extent feasible. A biological monitor will be present during work activities that are expected to generate excessive noise, in order to monitor for biological concerns and ensure that work activities are conducted in such a way that potentially disruptive noise is minimized to the extent possible.

(ee) The applicant shall prepare an analysis of whether the crossing could feasibly serve adjoining properties and thereby result in minimizing the number of additional crossings required by adjacent development. The Sandia Creek Drive crossing is widely used by local residents to travel between the north and south sides of the Santa Margarita River.

(ff) There must be no net loss of wetlands and any impacts to wetlands shall be mitigated at a minimum ratio of 3:1 (this shall include a minimum 1:1 creation component, while restoration/enhancement of existing wetlands may be used to make up the remaining requirements for a total 3:1 ratio). These mitigation requirements will be met, as is discussed further in this report. There will be no net loss of wetlands.

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Table 6
Jurisdictional Resources Impacts for the Santa Margarita River Fish Passage and Bridge Replacement Project (Acres)

Jurisdictional Resources	Acres Present within Study Area	Permanent Impacts (Acres)	Temporary Impacts (Acres)
USACE/RWQCB/CDFW Non-Wetland Waters	6.10	0.03	0.59
USACE/RWQCB/CDFW Wetlands	11.75	0.16	0.65
CDFW-Only Riparian	10.75	0.34	0.55
Total^a	28.60	0.54	1.79

^a Totals may not sum due to rounding.

8.5 Habitat Connectivity and Wildlife Corridors

8.5.1 Direct Impacts

Implementation of the proposed project is expected to improve wildlife movement through the study area. The existing concrete box culvert structure beneath Sandia Creek Drive acts as a major impediment to Southern California steelhead movement along the Santa Margarita River. The improved steel bridge structure will enable Southern California steelhead migration between the ocean and upstream freshwater spawning and rearing habitats. No significant negative direct temporary or permanent impacts would occur to wildlife movement or use of native wildlife nursery sites associated with the implementation of the proposed project. The existing habitat linkage and wildlife corridor functions would remain intact while construction activities are conducted. Following completion of the project, habitat linkages and wildlife corridor functions will have been enhanced for aquatic and terrestrial species. As the existing crossing structure will be replaced with a structure larger in size and higher above the ground, less fragmentation of riparian habitat along the river and improved water flow will allow for unimpeded wildlife movement on the ground and in the water.

8.5.2 Indirect Impacts

There would be no permanent indirect impacts to wildlife movement as a result of construction activities. Some indirect temporary impacts to localized wildlife movement could occur due to construction-related noise and presence of construction crew within the project area; however, these impacts would be temporary and would not be expected to significantly disrupt wildlife movement due to the small project footprint in relation to the surrounding habitat, and the ability for wildlife to avoid the impact area.

Any impacts to wildlife species present within or with the potential to move through the study area are discussed in Section 8.3, Special-Status Wildlife Species.

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8.6 Impacts to Regional Resource Planning

The study area is within the Santa Margarita River Trail Preserve, owned by The Wildlands Conservancy. Thus, while it is within a preserve, the study area is not presently designated by the draft NCMSCP as PAMA land, preserve area, or land outside of the PAMA, but rather in the catch-all “Other Lands” category (Figure 3). The preserve design principles described in the draft NCMSCP, which are intended to be considered for the development of PAMA lands, state that target special-status species should be conserved and should be well-distributed within their natural range (County of San Diego 2009). Implementation of the proposed project would remove the last remaining barrier for Southern California steelhead migration up and downstream, thus allowing Southern California steelhead and other native aquatic species such as arroyo chub to be more widely distributed within their natural range and therefore less vulnerable to extinction. An additional preserve design principle states that to support a greater amount of native biodiversity, natural processes should not be disrupted within preserves (County of San Diego 2009). The existing bridge structure impedes what would be the natural flow of water in the Santa Margarita River, and the replacement bridge was designed to allow more natural water flow. Therefore, implementation of the proposed project would align with this principle of preserve design.

Furthermore, all potentially significant impacts will be fully mitigated through revegetation and habitat restoration which will be approved by The Wildlands Conservancy and the long-term land management plan. Therefore, project implementation would not conflict with the Draft NCMSCP or preclude it from being implemented.

Impacts to all sensitive vegetation communities or land covers (Tier I, II, or III) will be mitigated through habitat restoration and revegetation, providing an equal or greater benefit to species such as arroyo toad, least Bell’s vireo, and southwestern willow flycatcher, thus implementation of the proposed project would not conflict with the RPO (County of San Diego 2012a).

8.7 Equestrian Trail

Temporary trail construction for an equestrian connector trail to route horse riders away from and around the construction zone will utilize hand tools including shovels, rakes, Mattock, Pulaski and limited chain saw use for trimming of vegetation. Trail construction will occur during January through March of 2022, ahead of the construction start, in an area that has existing significant disturbance from informal trail use. No large machinery will be involved in trail construction, and trimmed vegetation will be allowed to regrow following project completion. The trail will be approximately 8 ft wide and 600 ft long on the east side of Sandia Creek Drive and south of the river. The temporary impact of trail construction and use is negligible compared to the bridge construction footprint. The trail path does not include riparian or stream channel impact. The

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anticipated construction timing is outside of the nesting bird season which would minimize the likelihood of encounters or disturbance.

8.8 Mitigation Measures and Design Considerations

M-BI-1 Biological Monitoring. A qualified biologist shall monitor construction for compliance with avoidance and minimization measures. Considering the nature of the work area and proximity of protected resources to the work limits, monitoring shall be continuous during the initial preparation and excavation phases. Once work transitions to placement in-channel work and placement of riprap, the frequency of monitoring may be reduced, as recommended by the monitoring biologist (taking into consideration the nature of the proposed work and time of year). Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits the proposed project applicant or its designee shall provide written confirmation that a biological monitor approved by the County of San Diego has been retained and shall be present during clearing, grubbing, and/or grading activities. A qualified biologist is defined as a biologist approved by the County of San Diego to conduct the biological monitoring activities being described.

Biological monitoring shall include the following:

- a. Attend the preconstruction meeting with the contractor and other key construction personnel prior to ground disturbance, clearing, grubbing, or grading to reduce conflict between the timing and location of construction activities with other mitigation requirements (e.g., seasonal surveys for nesting birds).
- b. Conduct a worker awareness training with the contractor and construction personnel describing the importance of restricting work to designated areas prior to clearing, grubbing, grading, or ground disturbance. Discuss procedures for minimizing harm to or harassment of wildlife. The biologist shall also provide the construction contractor field supervisor with a worker education pamphlet to be provided to all construction personnel prior to personnel initiating ground-disturbance activities. The pamphlet will include a discussion of the importance of the stream and associated riparian habitat, limits of work, a discussion of special-status species occurring and with the potential to occur, and education on not harassing native wildlife.
- c. Conduct a preconstruction survey sweep immediately prior to the start of daily work activities and monitor ground-disturbing activities within areas

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of suitable habitat for special-status species. The biological monitor shall look for special-status species that may be located within or immediately adjacent to the work area. If special-status species are detected, the biological monitor shall identify and, when applicable, flag the location for avoidance. If avoidance of wildlife is not possible, a qualified biologist shall flush or move them out of harm's way to avoid direct impacts to these species. Any special-status plant individuals will be flagged for avoidance and shall not be directly impacted without Agency consultation.

- d. Verify that the construction site is implementing best management practices (BMPs). The BMPs are described in further detail in M-BI-13 and M-BI-14
- e. Supervise and monitor vegetation clearing, grubbing, grading, and ground-disturbing activities to ensure against direct and indirect impacts to biological resources that are intended to be protected and preserved.
- f. During periods when biological monitoring is necessary for any other reason described in M-BI-1 through M-BI-14, monitor the construction site daily to see that fugitive dust is minimized.
- g. Oversee the construction site so that cover and/or escape routes for wildlife from excavated areas are provided on a daily basis, and ensure pipes are covered or capped. See M-BI-13 (2) for details on avoiding wildlife entrapment. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and prior to sealing the exposed area) by a qualified biologist to monitor for wildlife entrapment.
- h. Be present during work activities that are expected to generate excessive noise, in order to monitor for biological concerns and ensure that work activities are conducted in such a way that potentially disruptive noise is minimized to the extent possible.

M-BI-2 Temporary Construction Fencing or Flagging. Prior to issuance of permits, including clearing, grubbing, grading, and/or construction permits, the project applicant or its designee shall install fencing or flagging wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the Project Biologist. Fencing or flagging shall remain in place during all construction activities. All temporary fencing or flagging shall be shown on plans. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence to the satisfaction of the Director of the San Diego County Department of Planning and Development Services (or his/her

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designee) that work was conducted as authorized under the approved permits and associated plans.

M-BI-3 Take Authorization for Listed Species If necessary, direct temporary impacts to federally or state-listed species' habitat shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal Endangered Species Act of 1973, as amended, or under the state 2081 or 2080.1 ITP process. If such take authorization is required, the project applicant or its designee shall demonstrate, to the satisfaction of the Director of Planning & Development Services (or his/her designee) and prior to the issuance of the first grading permit that impacts to habitat for listed species, that it has secured from any necessary take authorization. Take authorization may be obtained through the Section 7 Consultation or Section 10 incidental take permit requirements. The applicant will comply with any and all conditions that the USFWS and NMFS may require for take of listed species pursuant to the FESA.

M-BI-4 Avoid and Minimize Impacts to Nesting Birds. To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act (16 USC 703 et seq.) and Fish and Game Code (3503 and 3503.5), removal of habitat that supports active nests on the proposed area of disturbance shall occur outside of the nesting season for these species (i.e., outside of January 1 through September 15, annually). If, however, removal of habitat on the proposed area of disturbance must occur during the nesting period of January 1 through September 15, the proposed project applicant or its designee shall retain a biologist approved by the County of San Diego (County) to conduct a pre-construction survey to determine the presence or absence of nesting birds in the proposed area of disturbance. The pre-construction survey must be conducted within 72 hours prior to the start of construction. Surveys shall be conducted in suitable nesting habitat in and adjacent to the construction area to determine the location of any active nests in the area and within 500 feet of the limits of work.

Impacts to active nests are typically avoided as follows. Clearing and construction shall be postponed or halted within the following buffers to be established by the biologist: (1) no work within 50 feet of a non-listed and non-raptor avifauna nest; (2) no work within 500 feet of a federally or state-listed species, such as least Bell's vireo; and (3) no work within 500 feet of a raptor nest. The construction avoidance area shall be clearly demarcated in the field with highly visible construction fencing or flagging, and construction personnel shall be instructed on the sensitivity of nest areas. To the extent possible, the no-construction buffer zones shall be avoided until

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the nesting cycle is complete. However, it may be reasonable for the County to reduce these buffer widths depending on site conditions (e.g., the width and type of screening vegetation). If construction-related activities must take place within an active nest buffer area, the proposed project applicant or its designee shall present a plan the County with measures to monitor and minimize impacts to nesting birds. No ground-disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.

M-BI-5 Special Considerations for Least Bell's Vireo, Southwestern Willow Flycatcher, and other Special-Status Riparian Bird Species. Ground-disturbance activities shall be avoided during the riparian bird nesting season, from approximately March 15 through September 15. If ground-disturbing activities cannot be completed outside the nesting bird season, the following measures shall be implemented:

- a. If construction activities begin between March 15 and September 15, two preconstruction surveys shall be conducted within riparian habitat found in and within 500 feet of the disturbance areas. One survey shall occur no earlier than 7 days prior to the commencement of activity, with the second occurring within 3 days of activity commencement. If ground-disturbance activities are delayed, then additional pre-disturbance surveys shall be conducted such that no more than 3 days will have elapsed between the last survey and ground-disturbance activities. The survey shall be completed by a biologist who holds a USFWS permit for southwestern willow flycatcher.
- b. If active nests of special-status birds such as least Bell's vireo, southwestern willow flycatcher, yellow-breasted chat, or yellow warbler are found, the qualified biologist would monitor and determine if construction noise levels or motion are potential sources for nest failure, and avoidance buffers would be established accordingly in coordination with the County, CDFW, and the USFWS. Additional follow-up weekly visits by the qualified biologist would be required if active nests occur within 500 feet of the project construction activities. No ground-disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.
- c. Direct impacts to riparian habitat shall be minimized to the extent possible. Prior to initiation of ground-disturbance activities, disturbance limits shall be

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clearly defined at the construction site and demarcated on site plans. Access and staging shall be limited to the existing pathways and constructed access roads.

M-BI-6 Minimize and Avoid Impacts to Special-Status Reptiles. A smooth wildlife exclusion fence (e.g., Animex) will be installed around the impact area prior to performance of pre-construction surveys. A wildlife exclusion fencing plan will be prepared and approved by the County prior to implementation. At a minimum, the plan will identify the materials, minimum height, installation process including trenched-in depth, intactness review timing and remediation process, and process/techniques for dealing with subsurface impediments (e.g., rocks and logs) or deep-water ponded areas. Within 72 hours prior to initiation of construction activities, a qualified biologist will conduct a clearance survey within the fenced area for any special-status reptiles known to occur within the study area or with a high potential to occur such as San Diegan tiger whiptail, orange-throated whiptail, southern California legless lizard, red diamondback rattlesnake, San Diego ringneck snake, two-striped garter snake, and Blainville's horned lizard. If reptiles are found within the fenced area, they will be relocated outside of the impact area by a qualified biologist. The exclusion fencing plan will also identify the proposed relocation areas. Species should be uniformly distributed outside the fenced area and handled per the Declining Amphibians Task Force handling recommendations (<https://www.fws.gov/ventura/docs/species/protocols/DAFTA.pdf>).

Within 72 hours prior to construction activities, a qualified biologist will survey for southwestern pond turtles within the limits of work. If southwestern pond turtles are detected, the biologist shall relocate the turtles to suitable habitat outside of the work area.

M-BI-7 Minimize and Avoid Impacts to Arroyo Toads. If arroyo toads are detected during pre-construction clearance surveys the biologist shall consult with CDFW and USFWS to move the tadpoles, toadlets or toads to the nearest suitable habitat. All project activities will cease until the arroyo toads can be collected and relocated to another location outside of the project limits, and barrier fencing installed as necessary to preclude re-entry into the construction area. A USFWS-approved biologist (covered under Section 7 consultation for this project) shall perform the collection and relocation in coordination with the USFWS. Bullfrogs observed during pre-activity surveys that prey upon or displace arroyo toads shall be removed from the suitable habitat area and humanely euthanized in accordance with the American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals: 2020 Edition (AVMA 2020).

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M-BI-8 Minimize and Avoid Impacts to Southern California steelhead. Terms and conditions for implementing Reasonable and Prudent Measures 1–5 will be observed in accordance with the NOAA Restoration Center (2015) Programmatic Consultation for Small Restoration Projects in Southern California (Sections 2.8.3 – 2.8.7).

1. Implement a steelhead rescue and relocation protocol for dewatering activities that is protective of juvenile and adult steelhead. Prior to construction and following installation of barriers to isolate the construction site from the active channel, a qualified fisheries biologist and team will conduct a fish survey and rescue program for stranded fish prior to initiation of construction activities. Fish removed from the work area will be immediately returned to the active channel. A fish rescue and relocation plan will be provided to NMFS and CDFW for review and approval prior to initiating the fish rescue. All observed steelhead will be reported to CDFW and NMFS. If annual take number for juvenile and adult steelhead is reached, construction activity will stop until consultation with wildlife agencies resolves the take limit.
2. Report to NMFS all take (inclusive of steelhead-relocation activities).
3. Develop and implement a streamflow monitoring plan to minimize effects of Program activities that result in a reduction of instream flow. The dewatering resulting from in-channel activities is expected to cause temporary loss, alteration, and reduction of aquatic habitat and macroinvertebrate organisms. If there is any flowing water (or isolated pools capable of supporting steelhead) when the construction occurs, the project proponent is required to construct cofferdams upstream and downstream of the excavation site and divert all flowing water around the workspace. If the thalweg of the stream has been altered due to construction activities, efforts shall be undertaken to reestablish it to its original configuration.
4. Minimize input of sand and smaller particles to action area drainages as a result of creating, maintaining, and (or) using access ramps and temporary access roads.
5. Submit adequate project information for NMFS' review and agreement to ensure Program impacts are minimized within the area affected by the proposed action. During and after completion of all facilities, SDC-PDS will monitor steelhead migrations from January through May and report to wildlife agencies. Communication of steelhead and other sensitive aquatic species will occur frequently with NMFS.

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- M-BI-9 Minimize and Avoid Impacts to Arroyo Chub.** The survey and relocation methods described above for Southern California steelhead will be conducted for arroyo chub, by a qualified biologist.
- M-BI-10 Minimize and Avoid Impacts to Special-Status Bats.** Within 72 hours prior to vegetation removal, a qualified biologist will survey for special-status bat species roosts including western small-footed myotis and Yuma myotis. If an active maternity roost is detected in vegetation or a structure which is to be impacted, project activities will be required to avoid disturbing the roost during the maternity roosting season of March through August. If roosts are observed outside of the maternity roosting season and exclusion is feasible, exclusion of roosts may be conducted with approval of the County of San Diego. Methods for roost exclusion would be discussed and agreed upon prior to implementation. Roost exclusion shall only occur during the time when bats are most active (early spring or fall) to increase the potential to exclude all bats (i.e., from a structure) and minimize the potential for a significant impact to occur by avoiding the maternity roosting season.
- M-BI-11 Minimize and Avoid Impacts to Special-Status Rodents.** A smooth wildlife exclusion fence (e.g., Animex) will be installed around the impact area prior to performance of pre-construction surveys. A wildlife exclusion fencing plan will be prepared and approved by the County prior to implementation. At a minimum, the plan will identify the materials, minimum height, installation process including trenched-in depth, intactness review timing and remediation process, and process/techniques for dealing with subsurface impediments (e.g., rocks and logs) or deep-water ponded areas. The fence will be installed around the impact area to prevent special-status rodents from reentering the site during construction after removal from the work area. Prior to the commencement of construction activities, a qualified biologist will conduct three nights of small mammal trapping within the fenced work area outside of inundated areas, intended to trap special-status small mammal species with potential to occur including Dulzura pocket mouse and northwestern San Diego pocket mouse. If small mammals are captured in the proposed construction area, they will be relocated to suitable habitat outside of the impact area by a qualified biologist. Prior to implementation, a relocation plan will be prepared and approved by the County that outlines how and where captured small mammals will be relocated.
- M-BI-12 Post-Construction Revegetation.** Prior to initiation of ground-disturbance activities, a revegetation plan shall be prepared, submitted to, and receive approval

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from the Director of the Department of Planning & Development Services (or her/his designee). This Plan will follow the County's Report Format and Content Requirements for Revegetation Plans. The plan will include a project description, project impact assessment, and plans to provide compensatory mitigation with associated goals for the mitigation. The plan will include a description of the mitigation site, existing resources, and a pre-project assessment of the functions and values for the stream and associated riparian habitat within the limits of work. Tables 7 and 8 below show the project's permanent impacts, temporary impacts, required mitigation ratio, and mitigation acreage requirements that will be addressed in this revegetation plan. Based on Tables 7 and 8, 2.72 acres of the 4.07 acres of temporary impact will be restored to mitigate temporary impacts, leaving 1.85 acres that will be restored to mitigate the project's permanent impacts. The restoration plan will include a program of implementation, with any grading plans, site preparation, planting and seeding, irrigation design, weed control, as well as a schedule and rationale for success. To mitigate for permanent impacts to the Oak Root Zone, coast live oak saplings shall be included in restoration planting plans as appropriate. Based on Table 7 below, 0.26 acres of oak root zone will be impacted. With a 3:1 required mitigation ratio for these impacts, 0.78 acres of the mitigation site will be targeted for 150 oak sapling plantings (approximately 200 oak saplings/acre). The restoration plan will also include a 5-year maintenance and monitoring program that includes supplemental planting and seeding, irrigation, weed control (hand, mechanical, and/or chemical), herbivore protection, erosion control, site protection, and other maintenance activities. A qualitative and quantitative monitoring (methods and schedule) and reporting program will also be included in the plan, along with associated annual and final success criteria (80% cover and diversity relative to reference site, as well as 80% success for the oak saplings) for the restoration effort and final sign-off, including parameters tied to the documented existing functions and values of the site, as well as the specific project impact mitigation acreage requirements. The plan will also cover potential contingency measures, as well as estimated costs (including a 3% annual calculation) to implement and monitor the program. The revegetation plan, survey results and post-construction re-vegetation reports shall be provided to the County; as well as reports demonstrating compliance with the project and The Wildlands Conservancy Long-Term Monitoring and Long-Term Management Plans. Following completion and sign off of the revegetation efforts, an open space easement shall be placed over the revegetated areas.

Table 7

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Summary of Permanent Impacts and Mitigation for the Santa Margarita River Fish Passage and Bridge Replacement Project

Vegetation Community/ Land Cover Type	Study Area (Acres)	Permanent Impacts (Acres)	County Mitigation Ratio	Mitigation Requirement (Acres)
Scrub oak chaparral (37900)	4.61	0.05	1:1	0.05
Non-native grassland (42200)	1.35	0.14	0.5:1	0.07
Southern cottonwood-willow riparian forest (61330)	5.55	0.17	3:1	0.51
Southern willow scrub (63320)	10.24	0.16	3:1	0.48
Coast live oak woodland (71160)	2.32	0.23	3:1	0.69
Eucalyptus woodland (79100)	0.28	0.08	None	None
Non-vegetated channel or floodplain (64200)	1.5	0.02	3:1	0.06
Disturbed habitat (11300)	1.45	0.12	None	None
Urban/developed (12000)	2.24	0.24	None	None
Total	36.38	1.20	--	1.85
<i>Oak Root Zone – 50 Foot Buffer Surrounding Coast Live Oak Woodland</i>				
Oak Root Zone	3.32	0.26	3:1	0.78

Table 8
**Summary of Temporary Impacts and Mitigation for the Santa Margarita River Fish
Passage and Bridge Replacement Project**

Vegetation Community/ Land Cover Type	Study Area (Acres)	Temporary Impacts (Acres)	County Mitigation Ratio	Mitigation Requirement (Acres)
Non-native grassland (42200)	1.35	1.00	0.5:1	0.50
Southern cottonwood-willow riparian forest (61330)	5.55	0.72	1:1	0.72
Southern willow scrub (63320)	10.24	0.68	3:1	2.04
Coast live oak woodland (71160)	2.32	0.04	3:1	0.12
Eucalyptus woodland (79100)	0.28	0.20	None	None
Fresh water (64140)	0.94	0.17	3:1	0.51
Non-vegetated channel or floodplain (64200)	1.5	0.11	3:1	0.33
Disturbed habitat (11300)	1.45	0.33	None	None
Urban/developed (12000)	2.24	0.83	None	None
Total	36.38	4.07	--	4.22

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M-BI-13 Best Management Practices. Prior to issuance of grading permits, the proposed project applicant or its designee shall outline best management practices (BMPs) that will be implemented during construction. The BMPs shall be developed, approved, and implemented during construction to control stormwater runoff such that erosion, sedimentation, pollution, runoff, and other adverse effects are minimized. The implementation of these requirements shall protect adjacent habitats and special-status species during construction to the maximum extent practicable. At a minimum, the following measures and/or restrictions shall be noted on construction plans, where appropriate, to avoid impacts to special-status species, sensitive vegetation communities, and/or jurisdictional waters during construction.

The project biologist shall verify the implementation of the following design requirements:

1. Avoid toxic substances on road surfaces. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.
2. Avoid wildlife entrapment: a) At the end of each workday, backfill, cover, or slope all potential wildlife pitfalls (trenches, bores, and other excavations) to allow wildlife egress. Should wildlife become trapped, a qualified biologist shall remove and relocate it. b). All pipes or other construction materials or supplies will be covered or capped in storage or laydown areas at the end of each workday. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently.
3. Fully covered trash receptacles that are animal-proof and weather-proof will be installed and used by the operator to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Prohibit littering and remove trash from construction areas daily. All food-related trash and garbage shall be removed from the construction sites on a daily basis.
4. Workers shall not bring pets on or adjacent to construction sites and shall not feed wildlife.
5. Construction activity will not be permitted in jurisdictional waters, except as authorized by applicable law and permit(s), including permits and authorizations approved by the U.S. Army Corps of Engineers or California Department of Fish and Wildlife RGP78, and Regional Water Quality Control Board.
6. Temporary storage of construction equipment and materials will not be located in jurisdictional waters.

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7. Any equipment or vehicles driven and/or operated adjacent to a jurisdictional water will be checked and maintained by the operator daily to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials that could be deleterious to aquatic life if introduced to the watercourse. Hazardous spills shall be immediately cleaned up, and the contaminated soil shall be properly handled or disposed of at a licensed facility.
8. No stationary equipment, such as motors, pumps, generators, and welders, or fuel storage tanks will be located within or adjacent to jurisdictional waters.
9. No debris, bark, slash sawdust, rubbish, cement, or concrete, or washing thereof, oil, or petroleum products will be stored where it may be washed by rainfall or runoff into jurisdictional waters.
10. When construction operations are completed, any excess materials or debris will be removed from the work area.
11. No equipment maintenance will be performed within or near jurisdictional waters, where petroleum products or other pollutants from the equipment may enter these areas. Servicing of construction equipment shall take place only at a designated staging area.
12. The spread of dust shall be minimized through periodic watering of actively disturbed soils or previously disturbed soils.
13. The spread of invasive weeds shall be minimized through removal of non-native weed species and remedial measures as determined during routine monitoring.
14. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants/seed and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area. Cleaning of equipment shall occur outside the work area where the wastewater stream is contained so as to prevent any invasive plant material from entering natural areas.
15. During construction, the project shall use silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats as necessary and applicable to control and prevent erosion.

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M-BI-14 **Specific Channel Protection Measures.** The following measures shall be taken to minimize impacts while necessary construction activities occur within and adjacent to the Santa Margarita River. Biological monitors will regularly document compliance.

1. In-channel construction areas shall be isolated from the active creek channel with sandbags, fiber mats, cofferdams, or other methods described in regulatory permits during construction.
2. Channel shall be accessed for construction activities preferentially via areas where no riparian vegetation is affected.
3. Potential downstream runoff from the site shall be controlled with sandbags, fiber mats, or other methods.
4. Construction equipment shall be refueled and maintained outside of the channel. If this is not feasible, containment materials will be used.
5. Washout areas stationed outside of the channel shall be used for concrete containment. These areas shall be isolated to ensure that concrete materials do not runoff into the channel or to recharge ponds.
6. When working in the channel or where there may be runoff to the channel, construction equipment shall be fitted with absorbent materials at potential fuel, oil, and other fluid leak spots.
7. During construction and post-construction maintenance involving use of equipment in or adjacent to the channel, sandbags shall be stockpiled on site so that they may be immediately filled and placed around any spill. Any spills not contained within the maintenance area will immediately be contained and isolated from the active channel.
8. A qualified biologist shall be present to check for wildlife that have taken shelter under/between/within erosion control materials (i.e., sandbags or other materials) immediately prior to and during removal of any such materials. If wildlife are found during this process, they will be relocated to outside of the impact area by the qualified biologist.

M-BI-15 **State Agency Permits.** Prior to impacts occurring to Regional Water Quality Control Board (RWQCB) and/or California Department of Fish and Wildlife (CDFW) (collectively, the Resource Agencies) jurisdictional aquatic resources, the project applicant or its designee shall notify the agencies of the proposed activities, and if applicable, obtain the following permits: RWQCB 401 Water Quality Certification and California Fish and Game Code 1602 Streambed Alteration Agreement. The applicant shall implement any and all measures required by the Resource Agencies.

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9 CUMULATIVE IMPACTS

The project would include measures to fully mitigate all impacts according to the County guidelines; therefore, the project meets all the requirements and there are no cumulative negative impacts.

The project positively contributes to conservation of a federally listed endangered species by addressing one of the most significant threats to Southern California steelhead recovery efforts. As stated previously, Southern California steelhead are designated as a high-priority Core 1 population along this reach of the Santa Margarita River within the National Marine Fisheries Service (NMFS) Southern California steelhead Recovery Plan (NMFS 2012).

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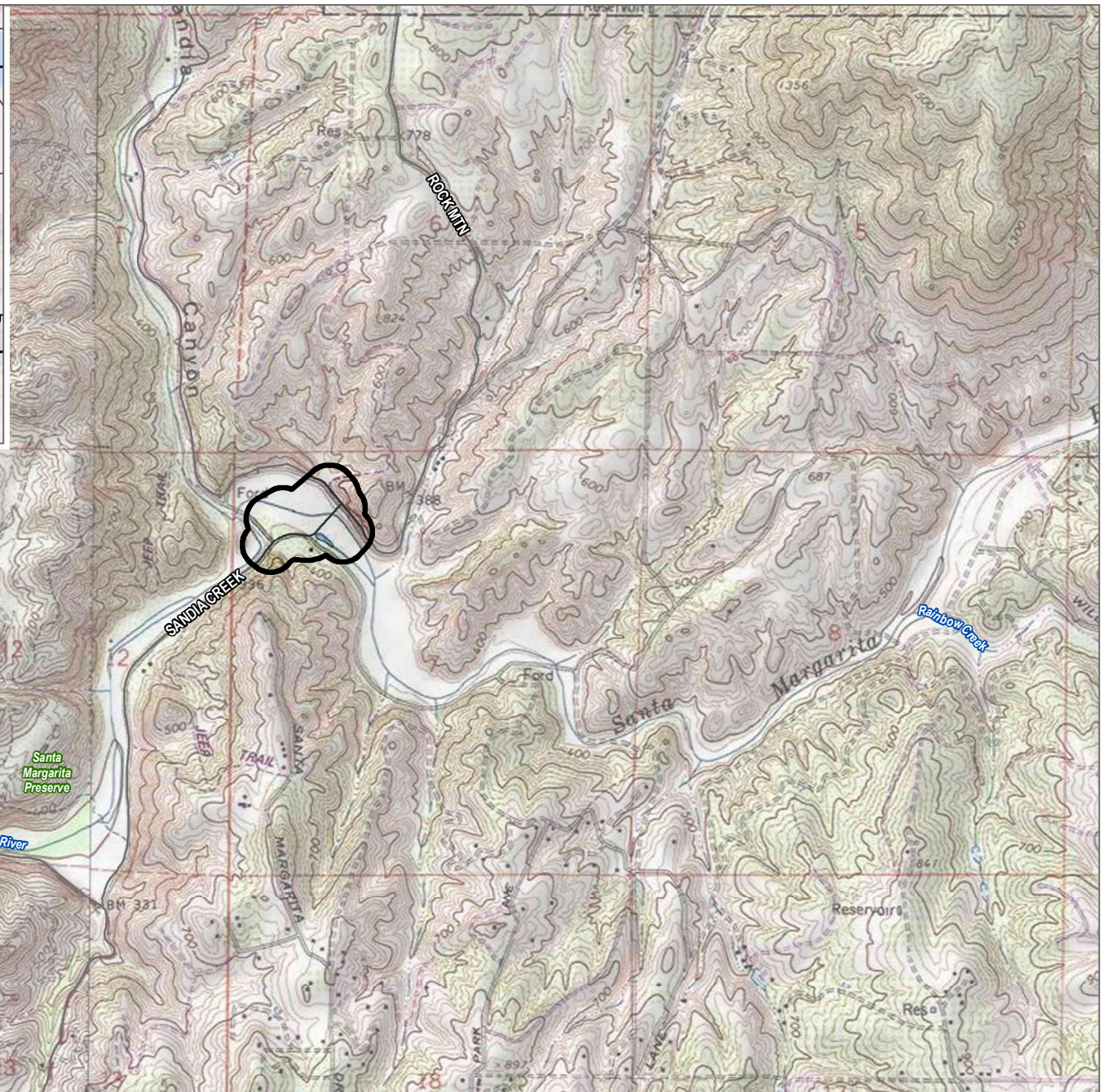
Biological Resources Letter Report for the Santa Margarita River Fish Passage and Bridge Replacement Project

11 LIST OF PREPARERS

This report was prepared by Dudek biologist Olivia Koziel. Review was provided by Callie Amoaku, Patricia Schuyler, Brock Ortega, and Andrew Hatch. Review of special-status plant and animal species' potentials to occur within the study area were provided by Scott McMillan, Brock Ortega, Tommy Moolio, and Andrew Hatch. Graphics and GIS analyses were provided by Matthew Watson and Hailee McOmber. Publications assistance was provided by Hannah Wertheimer.

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SOURCE: USGS 7.5-Minute Series Temecula Quadrangle

FIGURE 1

Project Location

Santa Margarita River Bridge Replacement Project

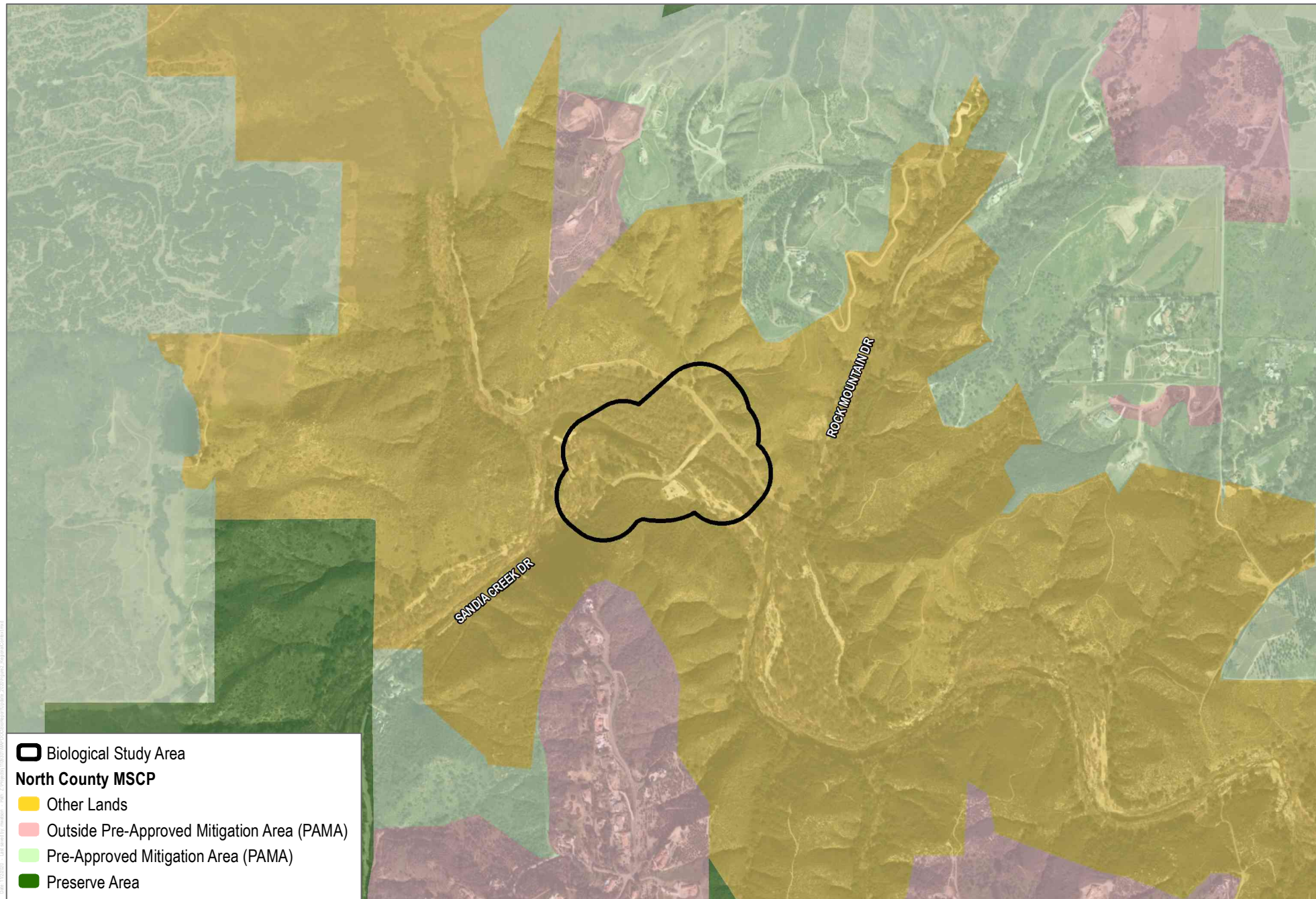


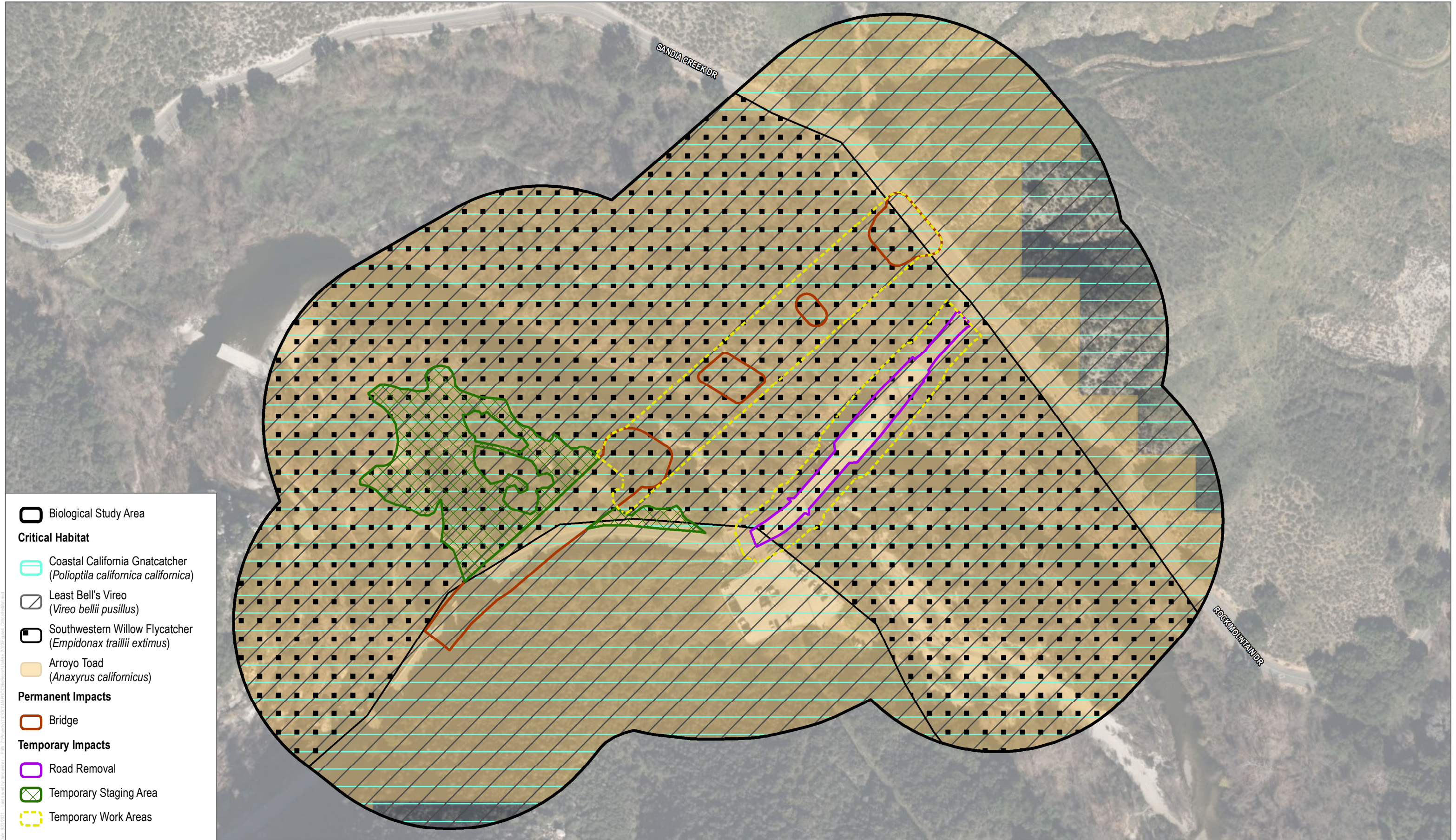
FIGURE 2

Regional Context

Santa Margarita River Bridge Replacement Project

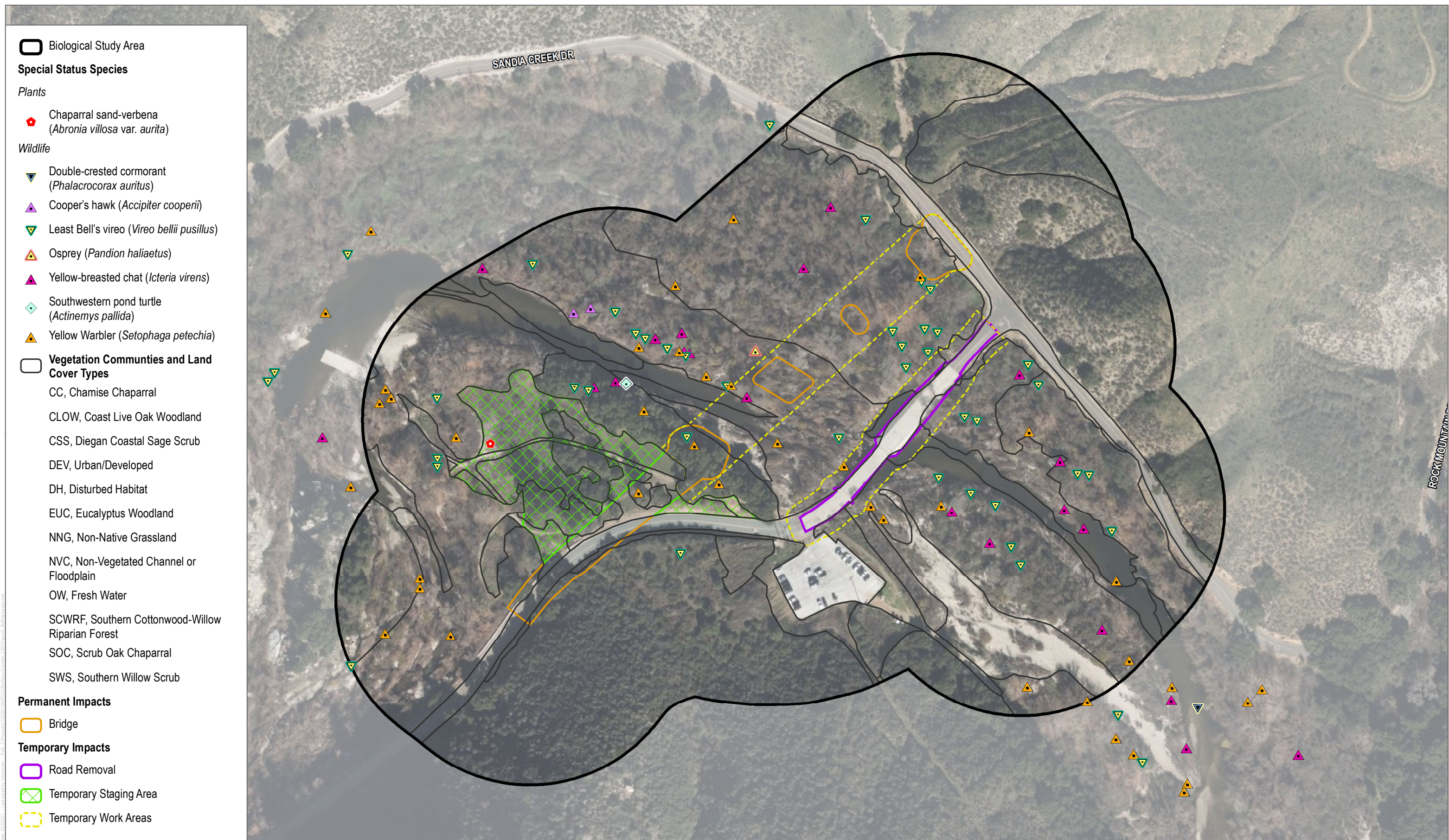


SOURCE: KPFF 2020, Bing Maps 2020



SOURCE: KPFF 2020, Bing Maps 2020, USFWS (1994/2007/2011/2013)

FIGURE 4
Critical Habitats Within the Study Area
Santa Margarita River Bridge Replacement Project



SOURCE: KPFF 2020, Bing Maps 2020

FIGURE 5

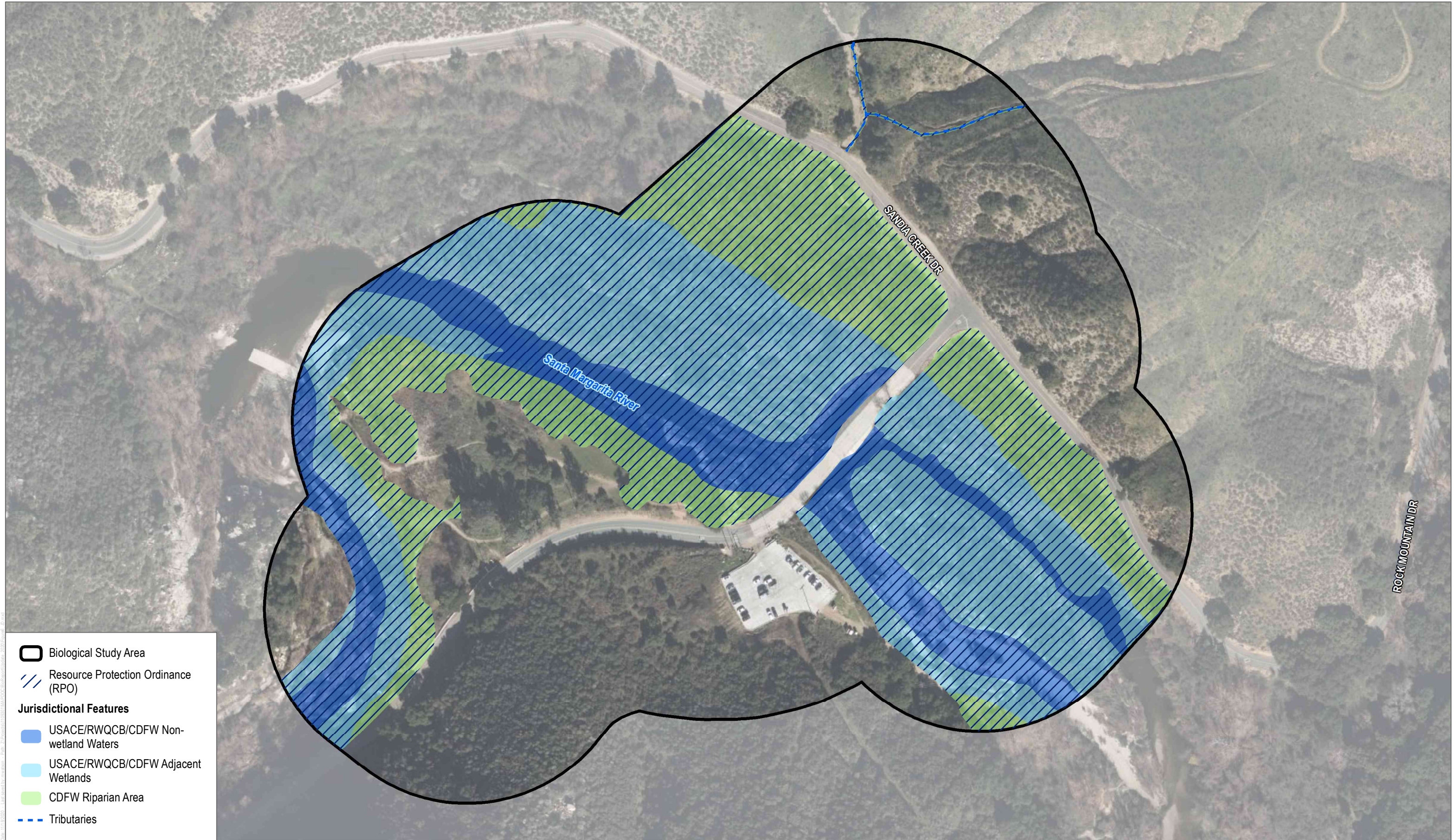
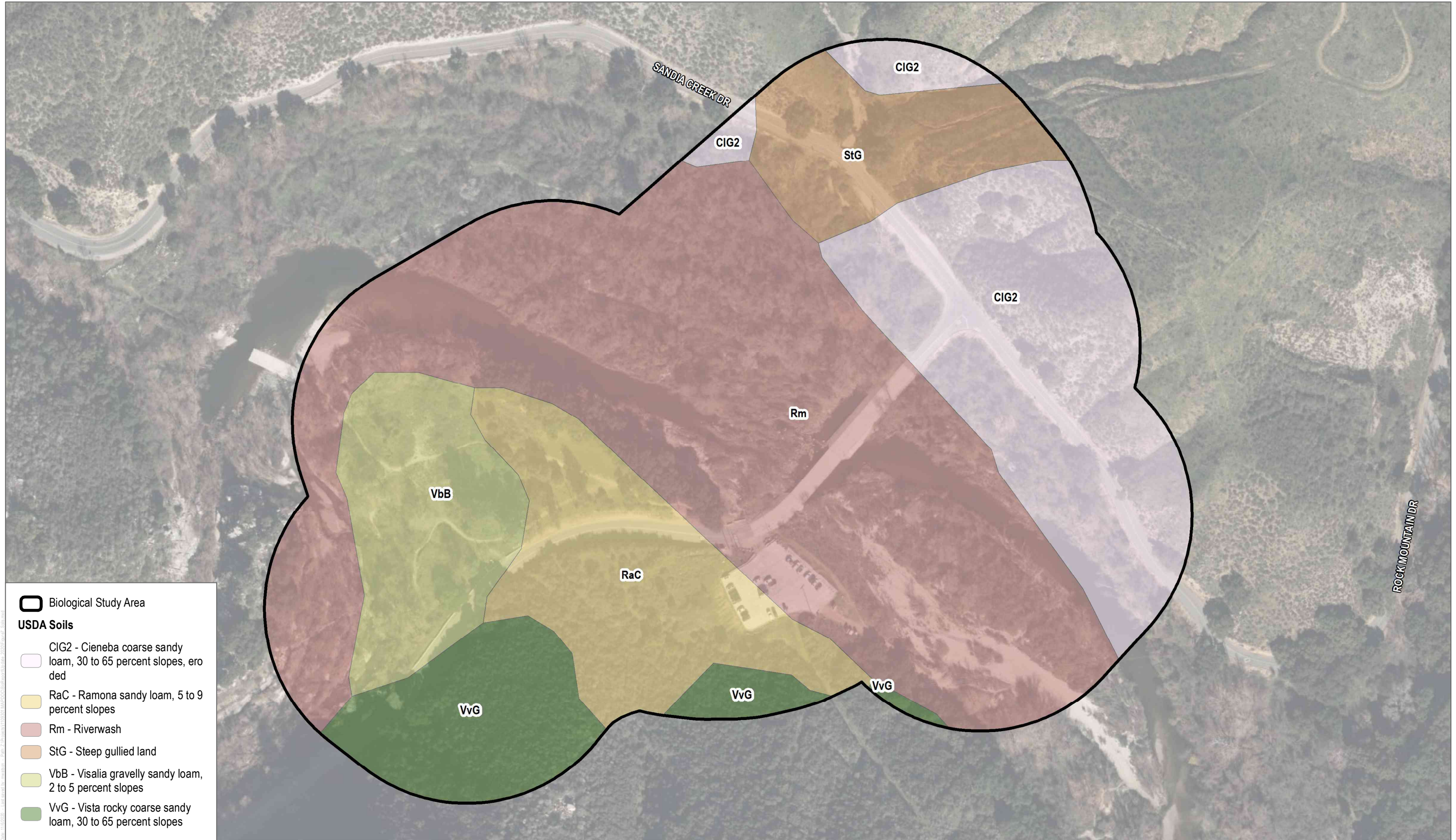


FIGURE 6

Jurisdictional Aquatic Resources
 Santa Margarita River Bridge Replacement Project



SOURCE: Bing Maps 2020, USDA NRCS 2007

FIGURE 7
Soils



SOURCE: KPFF 2020, Bing Maps 2020

FIGURE 8
Impacts

APPENDIX A

Plant Compendium

APPENDIX A

Plant Compendium

VASCULAR SPECIES

FERNS AND FERN ALLIES

DENNSTAEDTIACEAE—BRACKEN FAMILY

Pteridium aquilinum—western brackenfern

MONOCOTS

AGAVACEAE—AGAVE FAMILY

Hesperoyucca whipplei—chaparral yucca

CYPERACEAE—SEDGE FAMILY

Schoenoplectus acutus var. *occidentalis*—tule

Schoenoplectus americanus—American bulrush

Scirpus microcarpus—small-fruited bulrush

* *Cyperus involucratus*—umbrella plant

LILIACEAE—LILY FAMILY

Calochortus splendens—splendid mariposa lily

POACEAE—GRASS FAMILY

Melica imperfecta—smallflower melicgrass

* *Avena fatua*—wild oat

* *Bromus diandrus*—ripgut brome

* *Bromus hordeaceus*—soft brome

* *Bromus madritensis* ssp. *rubens*—red brome

* *Hordeum murinum*—mouse barley

* *Schismus barbatus*—common Mediterranean grass

* *Festuca perennis*—perennial rye grass

THEMIDACEAE—BRODIAEA FAMILY

Dichelostemma capitatum—bluedicks

TYPHACEAE—CATTAIL FAMILY

Typha domingensis—southern cattail

Typha latifolia—broadleaf cattail

APPENDIX A (Continued)

EUDICOTS

ADOXACEAE—MUSKROOT FAMILY

Sambucus nigra—blue elderberry

AGAVACEAE—AGAVE FAMILY

* *Agave americana*—American century plant

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina—laurel sumac

Rhus aromatica—basket bush

Toxicodendron diversilobum—poison oak

APIACEAE—CARROT FAMILY

* *Apium graveolens*—wild celery

* *Conium maculatum*—poison hemlock

* *Foeniculum vulgare*—fennel

ASTERACEAE—SUNFLOWER FAMILY

* *Sonchus oleraceus*—common sowthistle

Acourtia microcephala—sacapellote

Artemisia douglasiana—Douglas' sagewort

Corethrogyne filaginifolia—common sandaster

Eriophyllum confertiflorum—golden-yarrow

Logfia arizonica—Arizona cottonrose

Osmadenia tenella—false rosinweed

Pseudognaphalium californicum—ladies' tobacco

* *Carduus pycnocephalus*—Italian plumeless thistle

* *Centaurea melitensis*—Maltese star-thistle

* *Hypochaeris glabra*—smooth cat's ear

* *Logfia gallica*—narrowleaf cottonrose

Pluchea sericea—arrow weed

Artemisia californica—California sagebrush

Xanthium strumarium—cocklebur

Baccharis pilularis—coyote brush

Baccharis salicifolia—mulefat

Hazardia squarrosa—sawtooth golden bush

Ambrosia psilostachya—western ragweed

APPENDIX A (Continued)

BETULACEAE—BIRCH FAMILY

Alnus rhombifolia—white alder

BORAGINACEAE—BORAGE FAMILY

Amsinckia menziesii—Menzies' fiddleneck

Phacelia imbricata—imbricate phacelia

BRASSICACEAE—MUSTARD FAMILY

Lepidium nitidum—shining pepperweed

* *Brassica nigra*—black mustard

* *Hirschfeldia incana*—shortpod mustard

* *Lobularia maritima*—sweet alyssum

* *Lepidium latifolium*—perennial pepper weed

CACTACEAE—CACTUS FAMILY

Opuntia occidentalis—pricklypear

Opuntia littoralis—coast prickly pear

CAPRIFOLIACEAE—HONEYSUCKLE FAMILY

Lonicera subspicata—southern honeysuckle

CONVOLVULACEAE—MORNING-GLORY FAMILY

Calystegia macrostegia ssp. *intermedia*—island false bindweed

CUCURBITACEAE—GOURD FAMILY

Marah macrocarpa—Cucamonga manroot

EUPHORBIACEAE—SPURGE FAMILY

Croton californicus—California croton

Euphorbia spathulata—warty spurge

Croton setiger—dove weed

* *Ricinus communis*—castorbean

FABACEAE—LEGUME FAMILY

Acmispon glaber var. *glaber*—common deerweed

Acmispon strigosus—strigose bird's-foot trefoil

Amorpha californica—California false indigo

Lupinus bicolor—miniature lupine

Lupinus truncatus—collared annual lupine

Vicia americana—American vetch

* *Medicago polymorpha*—bureclover

APPENDIX A (Continued)

* *Melilotus indicus*—annual yellow sweetclover

* *Cytisus scoparius*—broom

Acmispon glaber—deer weed

FAGACEAE—OAK FAMILY

Quercus agrifolia var. *oxyadenia*—coastal live oak

Quercus berberidifolia—scrub oak

GERANIACEAE—GERANIUM FAMILY

* *Erodium cicutarium*—redstem stork's bill

* *Erodium botrys*—longbeak stork's bill

LAMIACEAE—MINT FAMILY

Salvia apiana—white sage

Salvia mellifera—black sage

MALVACEAE—MALLOW FAMILY

Sidalcea sparsifolia—dwarf checkerbloom

Malacothamnus fasciculatus—bush mallow

MYRSINACEAE—MYRSINE FAMILY

* *Lysimachia arvensis*—scarlet pimpernel

MYRTACEAE—MYRTLE FAMILY

* *Eucalyptus camaldulensis*—river redgum

* *Eucalyptus citriodora*—lemonscented gum

* *Eucalyptus sideroxylon*—red ironbark

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Abronia villosa var. *aurita*—chaparral sand-verbena

OLEACEAE—OLIVE FAMILY

* *Olea europaea*—olive

ONAGRACEAE—EVENING PRIMROSE FAMILY

Clarkia unguiculata—elegant clarkia

OROBANCHACEAE—BROOM-RAPE FAMILY

Cordylanthus rigidus—stiffbranch bird's beak

APPENDIX A (Continued)

PHRYMACEAE—LOPSEED FAMILY

Mimulus aurantiacus—bush monkeyflower

Mimulus guttatus—common monkey flower

PLANTAGINACEAE—PLANTAIN FAMILY

Keckiella cordifolia—heartleaf keckiella

* *Veronica anagallis-aquatica*—water speedwell

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—California sycamores

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum fasciculatum—California buckwheat

RHAMNACEAE—BUCKTHORN FAMILY

Rhamnus crocea—redberry buckthorn

Rhamnus ilicifolia—hollyleaf redberry

ROSACEAE—ROSE FAMILY

Adenostoma fasciculatum—chamise

Heteromeles arbutifolia—toyon

Rubus ursinus—California blackberry

RUBIACEAE—MADDER FAMILY

Galium aparine—stickywilly

SALICACEAE—WILLOW FAMILY

Salix laevigata—red willow

Salix lasiolepis—arroyo willow

Populus fremontii—Fremont cottonwood

Salix exigua—sandbar willow

SAPINDACEAE—SOAPBERRY FAMILY

Acer negundo—box-elder

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii—sacred thorn-apple

Solanum douglasii—greenspot nightshade

URTICACEAE—NETTLE FAMILY

Urtica dioica—stinging nettle

APPENDIX A (Continued)

VITACEAE—GRAPE FAMILY

Vitis girdiana—desert wild grape

ZYGOPHYLLACEAE—CALTROP FAMILY

* *Tribulus terrestris*—puncturevine

* signifies introduced (non-native) species

APPENDIX B

Wildlife Compendium

APPENDIX B

Wildlife Compendium

AMPHIBIAN

FROGS

RANIDAE—TONGUELESS FROGS

* *Lithobates catesbeianus*—American bullfrog

HYLIDAE—TREEFROGS

Pseudacris hypochondriaca—Baja California treefrog

TOADS

BUFONIDAE—TRUE TOADS

Anaxyrus boreas—western toad

BIRD

BLACKBIRDS, ORIOLES AND ALLIES

ICTERIDAE—BLACKBIRDS

Icterus cucullatus—hooded oriole

Quiscalus mexicanus—great-tailed grackle

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltiriparus minimus—bushtit

CARDINALS, GROSBEAKS AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black-headed grosbeak

CORMORANTS

PHALACROCORACIDAE—CORMORANTS

Phalacrocorax auritus—double-crested cormorant

APPENDIX B (Continued)

EMBERIZINES

EMBERIZIDAE—EMBERIZIDS

Melospiza melodia—song sparrow

Melospiza crissalis—California towhee

Pipilo maculatus—spotted towhee

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch

Spinus psaltria—lesser goldfinch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee

Empidonax difficilis—Pacific-slope flycatcher

Myiarchus cinerascens—ash-throated flycatcher

Sayornis nigricans—black phoebe

GOATSUCKERS

CAPRIMULGIDAE—GOATSUCKERS

Phalaenoptilus nuttallii—common poorwill

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk

Buteo jamaicensis—red-tailed hawk

Buteo lineatus—red-shouldered hawk

Pandion haliaetus—osprey

HERONS AND BITTERNS

ARDEIDAE—HERONS, BITTERNS, AND ALLIES

Ardea herodias—great blue heron

Butorides virescens—green heron

Nycticorax nycticorax—black-crowned night-heron

APPENDIX B (Continued)

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna’s hummingbird

Selasphorus sasin—Allen’s hummingbird

JAYS, MAGPIES AND CROWS

CORVIDAE—CROWS AND JAYS

Apelocoma californica—California scrub-jay

Corvus brachyrhynchos—American crow

Corvus corax—common raven

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

Toxostoma redivivum—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

NEW WORLD VULTURES

CATHARTIDAE—CARDINALS AND ALLIES

Cathartes aura—turkey vulture

OLD WORLD WARBLERS AND GNATCATCHERS

SYLVIIDAE—SYLVIID WARBLERS

Polioptila caerulea—blue-gray gnatcatcher

OWLS

TYTONIDAE—BARN OWLS

Tyto alba—barn owl

STRIGIDAE—TYPICAL OWLS

Bubo virginianus—great horned owl

APPENDIX B (Continued)

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Stelgidopteryx serripennis—northern rough-winged swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis—white-throated swift

TITMICE

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus—oak titmouse

VIREOS

VIREONIDAE—VIREOS

Vireo bellii pusillus—least Bell's vireo

Vireo huttoni—Hutton's vireo

WATERFOWL

ANATIDAE—DUCKS, GEESE, AND SWANS

Anas platyrhynchos—mallard

APPENDIX B (Continued)

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Geothlypis trichas—common yellowthroat
Icteria virens—yellow-breasted chat
Oreothlypis celata—orange-crowned warbler
Setophaga nigrescens—black-throated gray warbler
Setophaga petechia—yellow warbler

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Colaptes auratus—northern flicker
Melanerpes formicivorus—acorn woodpecker
Picoides nuttallii—Nuttall's woodpecker
Picoides pubescens—downy woodpecker

WRENS

TROGLODYTIDAE—WRENS

Thryomanes bewickii—Bewick's wren
Troglodytes aedon—house wren

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

FISH

MINNOWS AND CARPS

CYPRINIDAE—MINNOWS AND CARPS

* *Cyprinus carpio*—common carp

SUNFISHES AND FRESHWATER BASSES

CENTRARCHIDAE—SUNFISHES

* *Lepomis cyanellus*—green sunfish

APPENDIX B (Continued)

SALMON AND TROUTS

SALMONIDAE—SALMON AND TROUTS

Oncorhynchus mykiss—steelhead rainbow trout

INVERTEBRATE

BUTTERFLIES

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Junonia coenia—common buckeye

Limenitis lorquini—Lorquin's admiral

Nymphalis antiopa—mourning cloak

PAPILIONIDAE—SWALLOWTAILS

Papilio rutulus—western tiger swallowtail

PIERIDAE—WHITES AND SULFURS

Anthocharis sara sara—Pacific sara orangetip

Pieris rapae—cabbage white

Pontia protodice—checkered white

MAMMAL

BEAVER

APLODONTIIDAE—MOUNTAIN BEAVERS

Castor canadensis—American beaver

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

RACCOONS

PROCYONIDAE—RACCOONS AND RELATIVES

Procyon lotor—raccoon

APPENDIX B (Continued)

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

RATS, MICE, AND VOLES

CRICETIDAE—RATS, MICE, AND VOLES

Neotoma fuscipes—dusky-footed woodrat

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

Uta stansburiana—common side-blotched lizard

ANGUIDAE—ALLIGATOR LIZARDS

Elgaria multicarinata—southern alligator lizard

ANNIELLIDAE—CALIFORNIA LEGLESS LIZARDS

Anniella pulchra—California legless lizard

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis hyperythra beldingi—Belding's orange-throated whiptail

Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail

SNAKES

COLUBRIDAE—COLUBRID SNAKES

Lampropeltis californiae—California kingsnake

TURTLES

EMYDIDAE—BOX AND WATER TURTLES

* *Trachemys scripta*—pond slider

Actinemys marmorata—western pond turtle

* signifies introduced (non-native) species

APPENDIX B (Continued)

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APPENDIX C-1

*Special-Status Plant Species Detected or with
Moderate or High Potential to Occur within the
Study Area*

Appendix C-1

Special-Status Plant Species Detected or with Moderate or High Potential to Occur within the Study Area

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Abronia villosa</i> var. <i>aurita</i>	chaparral sand-verbena	None/None/1B.1	None	List A	Observed. The study area is within the appropriate elevation range, contains suitable vegetation, and suitable soils for this species. This species was observed during surveys in May 2018 and 2020 and the population is documented in CNDDDB (CDFW 2020). In 2020, one individual was observed west of the impact limits.
<i>Adolphia californica</i>	California adolphia	None/None/2B.1	Narrow Endemic	List B	Moderate potential to occur in the study area; low potential to occur in the impact area. This shrub species was not observed within the impact area during focused rare plant surveys. The study area contains suitable vegetation communities that could support this species.
<i>Ambrosia pumila</i>	San Diego ambrosia	FE/None/1B.1	Narrow Endemic	List A	Moderate potential to occur in the study area; low potential to occur in the impact area. The study area is within the appropriate elevation range, contains suitable vegetation, and suitable soils. In addition, there are documented occurrences of this species within one mile of the study area (CDFW 2018).
<i>Arctostaphylos rainbowensis</i>	Rainbow manzanita	None/None/1B.1	Covered	List A	Moderate potential to occur in study area; not expected to occur in the impact area. The study area contains suitable chaparral vegetation. In addition, there are documented occurrences of this species within one mile of the study area (CDFW 2020). The project impact area does not contain suitable vegetation that would support this species, and the plant would have likely been observed during rare plant surveys if present within the impact area.
<i>Baccharis vanessae</i>	Encinitas baccharis	FT/SE/1B.1	Narrow Endemic	List A	Moderate potential to occur in the study area and not expected to occur in the impact area. This is a shrub that likely would have been observed during focused plant surveys if present within the impact area. There

APPENDIX C-1 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
					are no known occurrences in the immediate vicinity of the study area, however the study area contains suitable vegetation to support this species (CDFW 2020).
<i>Bahiopsis laciniata</i>	San Diego County viguiera	None/None/4.3	None	List D	Moderate potential to occur within the impact buffer in chaparral or coastal sage scrub vegetation. Not expected to occur within the impact area. This shrub species likely would have been observed during focused rare plant surveys if present in the impact area. There is a recorded occurrence of this species less than two miles southwest of the study area (CCH 2020).
<i>Berberis nevinii</i>	Nevin's barberry	FE/SE/1B.1	None	List A	Moderate potential to occur in the study area and not expected to occur in the impact area. The study area is within the appropriate elevation range and contains suitable habitat for this species. The nearest documented occurrence of this species is approximately 6 miles to the northeast (CDFW 2018).
<i>Calandrinia breweri</i>	Brewer's calandrinia	None/None/4.2	None	List D	Moderate potential to occur in the study area, and low potential to occur in the impact area. There is suitable chaparral and sandy substrate present in the study area to support this species. However, the species was not observed during focused rare plant surveys. The nearest known occurrence is 3.5 miles southwest of the study area.
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	None/None/3	None	List C	Moderate potential to occur in the study area; low potential to occur in the impact area. There is suitable vegetation and sandy substrate present within the study area. The nearest occurrence to the study area is approximately 1 mile southeast of the study area (CCH 2020).

APPENDIX C-1 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Caulanthus simulans</i>	Payson's jewelflower	None/None/4.2	None	List D	Moderate potential to occur within the study area; low potential to occur in the impact area. There is suitable vegetation and substrate present for this species to occur. There are occurrences recorded within the vicinity of the study area (CDFW 2020).
<i>Clinopodium chandleri</i>	San Miguel savory	None/None/1B.2	Covered	List A	Moderate potential to occur in the study area; low potential to occur in the impact area. The study area is within the appropriate elevation range, contains suitable vegetation, and suitable soils. In addition, there are documented occurrences of this species within one mile of the study area (CDFW 2018).
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	summer holly	None/None/1B.2	Covered	List A	Moderate potential to occur in the study area within chaparral or woodland vegetation. Low potential to occur in the impact area as this species was not observed during rare plant surveys.
<i>Deinandra paniculata</i>	paniculate tarplant	None/None/4.2	None	List D	Moderate potential to occur in the study area; low potential to occur in the impact area. Although the species was not observed within the impact area during focused rare plant surveys, there is some suitable vegetation present within the study area and there is a known occurrence of this species less than two miles southwest of the study area (CCH 2020).
<i>Dichondra occidentalis</i>	western dichondra	None/None/4.2	None	List D	Moderate potential to occur in the study area; low potential to occur in the impact area. There is suitable vegetation present within the study area to support this species. The nearest known occurrence is approximately nine miles southwest of the study area (CCH 2020).
<i>Dudleya viscida</i>	sticky dudleya	None/None/1B.2	None	List A	Moderate potential to occur in the study area; low potential to occur in the impact area. The study area contains oak woodland, chaparral, and scrub habitat which could support this species. The species was not observed during focused rare plant surveys.

APPENDIX C-1 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Fritillaria biflora</i>	Chocolate lily	None/None/None	None	List D	Moderate potential to occur within chaparral or scrub habitat in the project buffer. Low potential to occur within the impact area as this species was not observed during rare plant surveys.
<i>Holocarpha virgata</i> ssp. <i>elongata</i>	graceful tarplant	None/None/4.2	None	List D	Moderate potential to occur within the project buffer in chaparral or scrub vegetation. Low potential to occur within the impact area as the species was not observed during rare plant surveys. The nearest known occurrence of this species is approximately eight miles away from the study area (CCH 2020).
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	None/None/1B.1	None	List A	Moderate potential to occur in the study area. Low potential to occur within the impact area. The species was not observed during focused rare plant surveys of the study area, and the project impact area contains a small amount of suitable vegetation that would support this species. The nearest known occurrence is approximately eight miles northeast of the study area (CCH 2020).
<i>Isocoma menziesii</i> var. <i>decumbens</i>	decumbent goldenbush	None/None/1B.2	None	List A	Moderate potential to occur in the study area. Low potential to occur within the impact area. This shrub would have likely been observed during focused rare plant surveys if present within the impact area. The nearest known occurrence is approximately 14 miles southwest of the study area.
<i>Juglans californica</i>	Southern California black walnut	None/None/4.2	None	List D	Moderate potential to occur within the impact area buffer. Not expected to occur in the impact area, as this tree likely would have been observed during focused rare plant surveys if present. There is one known occurrence recorded in 2007 near the western boundary of the study area (CCH 2020).

APPENDIX C-1 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Lathyrus splendens</i>	pride-of-California	None/None/4.3	None	List D	Moderate potential to occur within the impact buffer in chaparral. Low potential to occur within the impact area, as there is no suitable vegetation present to support this species. There are no known occurrences of this species in the immediate vicinity of the study area (CCH 2020).
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper- grass	None/None/4.3	None	List A	Moderate potential to occur within the impact buffer in chaparral vegetation. Low potential to occur within the impact area. The species was not observed during focused rare plant surveys and there is limited suitable vegetation in the impact area. There is an occurrence recorded within two miles of the study area (CDFW 2020).
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	ocellated Humboldt lily	None/None/4.2	None	List D	Moderate potential to occur in the study area. Low potential to occur in the impact area. There is suitable habitat present within the study area to support this species, and there are known occurrences approximately five miles west of the study area (CCH 2020).
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	felt-leaved monardella	None/None/1B.2	Covered	List A	Moderate potential to occur within the impact buffer. Low potential to occur within the impact area. This species was not observed during focused rare plant surveys of the impact area in 2020. The study area contains suitable vegetation to support this species.
<i>Mucronea californica</i>	California spineflower	None/None/4.2	None	List D	Moderate potential to occur in the study area; low potential to occur in the impact buffer. Although the species was not observed within the impact area during rare plant surveys, there is suitable chaparral (within impact buffer), scrub, and woodland vegetation present in the study area. The nearest known occurrence of this species is approximately 13 miles southeast of the study area, recorded in 1997 (CCH 2020).

APPENDIX C-1 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Nolina cismontana</i>	chaparral nolina	None/None/1B.2	Narrow Endemic	List A	Moderate potential to occur in the study area. Low potential to occur within the impact area. This species is a shrub and likely would have been detected during rare plant surveys if present within the impact area.
<i>Pentachaeta aurea</i> ssp. <i>aurea</i>	golden-rayed pentachaeta	None/None/4.2	None	List D	Moderate potential to occur in the study area; low potential to occur in the impact area. Multiple vegetation communities present within the study area could support this species. The nearest known occurrence is approximately nine miles southwest of the study area (CCH 2020).
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	Gairdner's yampah	None/None/4.2	None	List D	Moderate potential to occur in the study area; low potential to occur in the impact area. There is suitable vegetation present to support this species. The nearest known occurrence is approximately four miles northeast of the study area (CCH 2020).
<i>Piperia cooperi</i>	chaparral rein orchid	None/None/4.2	None	List D	Moderate potential to occur within chaparral, woodland, or the limited grassland present in the study area. The nearest known occurrences of this species are approximately seven miles from the study area (CCH 2020).
<i>Polygala cornuta</i> var. <i>fishiae</i>	Fish's milkwort	None/None/4.3	None	List D	Moderate potential to occur within the impact buffer in chaparral, woodland, or riparian vegetation. Low potential to occur within the impact area. This species is a shrub and likely would have been detected during rare plant surveys if present in the impact area. There is an occurrence recorded less than two miles east of the study area (CCH 2020).
<i>Pseudognaphalium leucocephalum</i>	white rabbit-tobacco	None/None/2B.2	None	None	Moderate potential to occur in the project buffer. Low potential to occur within the impact area. The study area is within the appropriate elevation range, contains suitable vegetation, and suitable soils, but was not observed during focused rare plant surveys in 2020. There are documented occurrences of this species within the study area (CDFW 2020).

APPENDIX C-1 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Quercus dumosa</i>	Nuttall's scrub oak	None/None/1B.1	Narrow Endemic	List A	Moderate potential to occur within the project buffer. Low potential to occur within the impact area. This shrub would have likely been detected during focused rare plant surveys if present within the impact area. There was an occurrence of this species recorded near the southern end of the study area in 1891 (CCH 2020).
<i>Senecio aphanactis</i>	chaparral ragwort	None/None/2B.2	None	List B	Moderate potential to occur within the project buffer in chaparral or coastal sage scrub. Low potential to occur in the project impact area. The study area is within the appropriate elevation range and contains suitable habitat for this species. The project impact area contains a small amount of suitable vegetation that would support this species and the species was not observed during focused rare plant surveys.
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None/None/2B.2	None	None	Moderate potential to occur in the study area; low potential to occur in the project impact area. The study area is within the appropriate elevation range and contains suitable habitat for this species. However, the project impact area contains a very small amount of suitable vegetation that would support this species.
<i>Sphaerocarpos drewei</i>	bottle liverwort	None/None/1B.1	None	None	Moderate potential to occur in the study area; low potential to occur in the project impact area. The study area is within the appropriate elevation range and contains suitable habitat for this species. However, the project impact area contains a very small amount of suitable vegetation that would support this species.
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	None/None/1B.2	Narrow Endemic	List A	Moderate potential to occur within chaparral or coastal sage scrub in the impact buffer. Low potential to occur within the impact area, as this is a shrub and would have likely been observed during focused surveys. There is a known occurrence within two miles of the study area (CCH 2020).

APPENDIX C-1 (Continued)

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APPENDIX C-2

*Special-Status Plant Species with Low Potential or
Not Expected to Occur within the Study Area*

Appendix C-2

Special-Status Plant Species with Low Potential or Not Expected to Occur within the Study Area

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Abronia maritima</i>	red sand-verbena	None/None/4.2	None	List D	Not expected to occur. No suitable vegetation present.
<i>Acanthomintha ilicifolia</i>	San Diego thorn-mint	FT/SE/1B.1	Narrow Endemic	List A	Not expected to occur. There are no suitable clay soils present.
<i>Acmispon haydonii</i>	pygmy lotus	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Acmispon prostratus</i>	Nuttall's acmispon	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Agave shawii</i> var. <i>shawii</i>	Shaw's agave	None/None/2B.1	None	List B	Not expected to occur. This species is known to occur farther south in coastal areas and is not known to occur in northern San Diego County (CCH 2020).
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	None/None/2B.1	None	List B	Not expected to occur. This species is known to occur farther south in coastal areas and is not known to occur in northern San Diego County (CCH 2020).
<i>Androsace elongata</i> ssp. <i>acuta</i>	California androsace	None/None/4.2	None	List D	Not expected to occur. The nearest known occurrence of this species is east of the Cleveland National Forest (CCH 2020).
<i>Aphanisma blitoides</i>	aphanisma	None/None/1B.2	None	List A	Not expected to occur. This species typically occurs along the coast.
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	FE/None/1B.1	Narrow Endemic	List A	Not expected to occur. The study area is outside of the known range of this species (CCH 2020).
<i>Arctostaphylos otayensis</i>	Otay manzanita	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Artemisia palmeri</i>	San Diego sagewort	None/None/4.2	None	List D	Low potential to occur. Although there is suitable vegetation within the study area, the nearest known occurrence of this species is over 18 miles south of the study area (CCH 2020). The species likely would have been observed during focused rare plant surveys if present within the impact area.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Asplenium vespertinum</i>	western spleenwort	None/None/4.2	None	List D	Low potential to occur. There are suitable vegetation communities present to support this species, however it was not observed during focused rare-plant surveys. The nearest known occurrence is approximately 14 miles west of the study area (CCH 2020).
<i>Astragalus crotalariae</i>	Salton milk-vetch	None/None/4.3	None	List D	Not expected to occur. The study area does not support suitable desert scrub vegetation to support this species.
<i>Astragalus deanei</i>	Dean's milk-vetch	None/None/1B.1	None	List A	Low potential to occur. There are suitable vegetation communities present to support this species, however it was not observed during focused rare-plant surveys. The nearest known occurrence is approximately 18 miles north of the study area (CCH 2020).
<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba milk-vetch	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Astragalus insularis</i> var. <i>harwoodii</i>	Harwood's milk-vetch	None/None/2B.2	None	List B	Not expected to occur. The study area does not support suitable desert scrub or desert dune habitat to support this species.
<i>Astragalus lentiginosus</i> var. <i>borreganus</i>	Borrego milk-vetch	None/None/4.3	None	List D	Not expected to occur. The study area does not support suitable desert scrub vegetation to support this species.
<i>Astragalus magdalenae</i> var. <i>peirsonii</i>	Peirson's milk-vetch	FT/SE/1B.2	None	List A	Not expected to occur. No suitable vegetation present.
<i>Astragalus oocarpus</i>	San Diego milk-vetch	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Astragalus pachypus</i> var. <i>jaegeri</i>	Jaeger's bush milk-vetch	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Astragalus tener</i> var. <i>titi</i>	coastal dunes milk-vetch	FE/SE/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Atriplex coulteri</i>	Coulter's saltbush	None/None/1B.2	Narrow Endemic	List A	Low potential to occur. There is limited suitable vegetation present to support this species and the nearest known occurrence is approximately 15 miles southwest, on the coast.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Atriplex pacifica</i>	South Coast saltscale	None/None/1B.2	None	List A	Low potential to occur. The study area is within the appropriate elevation range; however, there is only marginal suitable habitat present.
<i>Atriplex parishii</i>	Parish's brittle scale	None/None/1B.1	Narrow Endemic	List A	Not expected to occur. There is not suitable chenopod scrub or vernal pools present to support this species.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None/None/1B.2	None	List A	Not expected to occur. There is not suitable alkaline substrate present to support this species. The nearest known occurrence is approximately 12 miles north of the study area (CCH 2020).
<i>Ayenia compacta</i>	California ayenia	None/None/2B.3	None	List B	Not expected to occur. The site is outside of the appropriate elevation range for this species.
<i>Azolla microphylla</i>	Mexican mosquito fern	None/None/4.2	None	List D	Not expected to occur. There is marginal suitable habitat present, and the species is not known to occur in the vicinity of the study area (CCH 2020).
<i>Berberis fremontii</i>	Fremont barberry	None/None/2B.3	None	List C	Not expected to occur. The site is outside of the species' known elevation range.
<i>Bergerocactus emoryi</i>	golden-spined cereus	None/None/2B.2	None	List B	Not expected to occur. This species is only known to occur in the southern area of the county and usually occurs near the coast.
<i>Bloomeria clevelandii</i>	San Diego goldenstar	None/None/1B.1	Narrow Endemic	List A	Low potential to occur. There is suitable vegetation within the study area, but there are not suitable clay soils.
<i>Boechera hirshbergiae</i>	Hirshberg's rockcress	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	FT/SE/1B.1	Narrow Endemic	List A	Not expected to occur. There are not suitable clay soils or vernal pools within the study area. There are no known occurrences in the immediate vicinity of the study area (CDFW 2020).
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	None/None/1B.1	Narrow Endemic	List A	Low potential to occur. There are not clay soils or vernal pools within the study area, but this species may occur in other soil types. There are no known occurrences in the immediate vicinity of the study area (CDFW 2020).

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Bursera microphylla</i>	little-leaf elephant tree	None/None/2B.3	None	List B	Not expected to occur. There is not suitable vegetation present.
<i>California macrophylla</i>	round-leaved filaree	None/None/None	None	List B	Not expected to occur. The study area does not support suitable clay soils.
<i>Calliandra eriophylla</i>	pink fairy-duster	None/None/2B.3	None	List B	Not expected to occur. There is no suitable vegetation present.
<i>Calochortus catalinae</i>	Catalina mariposa lily	None/None/4.2	None	List D	Not expected to occur. Although there is suitable vegetation present, the species is not known to occur in the vicinity of the study area (CCH 2020).
<i>Calochortus dunnii</i>	Dunn's mariposa lily	None/SR/1B.2	None	List A	Not expected to occur. Although there is suitable vegetation present, the species is not known to occur in the vicinity of the study area (CCH 2020).
<i>Carlwrightia arizonica</i>	Arizona carlwrightia	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Ceanothus cyaneus</i>	Lakeside ceanothus	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Ceanothus verrucosus</i>	wart-stemmed ceanothus	None/None/2B.2	Covered	List B	Not expected to occur within the impact area, as the shrub would have likely been observed during focused surveys if present. More potential to occur within chaparral in the project buffer.
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant	None/None/1B.1	Narrow Endemic	List A	Not expected to occur. The study area is within the appropriate elevation range; however, there is minimal grassland present and there are no vernal pools present.
<i>Centromadia pungens</i> ssp. <i>laevis</i>	smooth tarplant	None/None/1B.1	None	List A	Low potential to occur. The study area is within the appropriate elevation range and contains suitable habitat for this species. This species was not observed during focused rare plant surveys.
<i>Chaenactis carphoclinia</i> var. <i>peirsonii</i>	Peirson's pincushion	None/None/1B.3	None	List A	Not expected to occur. The study area lacks Sonoran desert scrub.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the appropriate elevation range for this species and no suitable vegetation is present that would support this species.
<i>Chaenactis parishii</i>	Parish's chaenactis	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Chamaebatia australis</i>	southern mountain misery	None/None/4.2	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	FE/SE/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Chorizanthe leptotheca</i>	Peninsular spineflower	None/None/4.2	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	FE/SE/1B.1	Narrow Endemic	List A	Not expected to occur. This species is not known to occur in this northern portion of San Diego County (CCH 2020).
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	FC/SE/1B.1	None	List A	Not expected to occur. This species is not known to occur in the vicinity and is considered extremely rare (Calflora 2020; CCH 2020).
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	long-spined spineflower	None/None/1B.2	None	List A	Low potential to occur. The study area is within the appropriate elevation range; however, there is only marginal suitable habitat and there are no clay soils present.
<i>Cistanthe maritima</i>	seaside cistanthe	None/None/4.2	None	List D	Not expected to occur. This species typically occurs along the coast.
<i>Clarkia delicata</i>	delicate clarkia	None/None/1B.2	None	List A	Low potential to occur. The study area contains chaparral and woodland which could support this species.
<i>Colubrina californica</i>	Las Animas colubrina	None/None/2B.3	None	List B	Not expected to occur. No suitable vegetation present.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Convolvulus simulans</i>	small-flowered morning-glory	None/None/4.2	None	List D	Low potential to occur. There is suitable vegetation present within the study area, however there are no suitable clay soils present. The nearest known occurrence is approximately nine miles southwest of the study area (CCH 2020).
<i>Corethrogyne filaginifolia</i> var. <i>incana</i>	San Diego sand aster	None/None/1B.1	None	List A	Not expected to occur. There is suitable chaparral and coastal scrub habitat within the impact buffer, and limited coastal sage scrub within the impact area. However, this species is not known to occur within the vicinity of the study area and occurs farther south (CCH 2020).
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar Mesa sand aster	None/None/1B.1	None	List A	Not expected to occur. The study area is outside of the known limited geographic range of this species (CCH 2020).
<i>Cryptantha ganderi</i>	Gander's cryptantha	None/None/1B.1	None	List A	Not expected to occur. This species occurs farther east in the desert and there is no suitable vegetation present.
<i>Cylindropuntia californica</i> var. <i>californica</i>	snake cholla	None/None/1B.1	None	List A	Not expected to occur. This species likely would have been observed during focused plant surveys if present within the impact area. Other than one occurrence, this species is only known from the southwest corner of the county. The nearest known occurrence of this species is approximately 20 miles north of the study area (CCH 2020).
<i>Cylindropuntia wolfii</i>	Wolf's cholla	None/None/4.3	None	List D	Not expected to occur. No suitable vegetation present.
<i>Deinandra conjugens</i>	Otay tarplant	FT/SE/1B.1	None	List A	Not expected to occur. The study area is outside of the known limited range of this species.
<i>Deinandra floribunda</i>	Tecate tarplant	None/None/1B.2	None	List A	Not expected to occur. There are no known occurrences of this species in the vicinity of the study area. This species typically occurs in the southern area of San Diego county (CCH 2020).
<i>Deinandra mohavensis</i>	Mojave tarplant	None/SE/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Colorado Desert larkspur	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Dicranostegia orcuttiana</i>	Orcutt's bird's-beak	None/None/2B.1	None	List B	Not expected to occur. This species typically occurs in southern San Diego county and is not known to occur in the vicinity of the study area (CCH 2020).
<i>Dieteria asteroides</i> var. <i>lagunensis</i>	Mt. Laguna aster	None/SR/2B.1	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Diplacus aridus</i>	low bush monkeyflower	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Diplacus clevelandii</i>	Cleveland's bush monkeyflower	None/None/4.2	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Ditaxis serrata</i> var. <i>californica</i>	California ditaxis	None/None/3.2	None	List C	Not expected to occur. No suitable vegetation present.
<i>Downingia concolor</i> var. <i>brevior</i>	Cuyamaca Lake downingia	None/SE/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Dudleya alainae</i>	Banner dudleya	None/None/3.2	None	List C	Not expected to occur. The site is outside of the species' known elevation range.
<i>Dudleya attenuata</i> ssp. <i>attenuata</i>	Orcutt's dudleya	None/None/2B.1	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	None/None/1B.1	None	List A	Not expected to occur. This species occurs ear the coast and on clay soils which are not present within the study area. The nearest known occurrence is approximately 13 miles southwest of the study area (CCH 2020).
<i>Dudleya brevifolia</i>	short-leaved dudleya	None/SE/1B.1	Narrow Endemic	List A	Not expected to occur. The study area is outside of the known limited range of this species.
<i>Dudleya multicaulis</i>	many-stemmed dudleya	None/None/1B.2	None	List A	Low potential to occur. There is chaparral and coastal sage scrub within the study area, but the soil is not suitable for this species. The study area is within the appropriate elevation range, but lacks clay soils.
<i>Dudleya variegata</i>	variegated dudleya	None/None/1B.2	None	List A	Not expected to occur. The study area contains suitable vegetation, but lacks clay soils.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Ericameria cuneata</i> var. <i>macrocephala</i>	Laguna Mountains goldenbush	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Ericameria palmeri</i> var. <i>palmeri</i>	Palmer's goldenbush	None/None/1B.1	None	List B	Low potential to occur. This species was not observed within the impact area during focused rare plant surveys, however the study area contains suitable habitat such as chaparral and coastal sage scrub which could support this species.
<i>Eriogonum evanidum</i>	vanishing wild buckwheat	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	FE/SE/1B.1	Covered	List A	Not expected to occur. The site lacks vernal pools and clay soils to which this species typically grows in proximity. There are no known occurrences in the immediate vicinity of the study area (CDFW 2020).
<i>Eryngium pendletonense</i>	Pendleton button-celery	None/None/1B.1	None	List A	Not expected to occur. There are no vernal pools or suitable clay soils present within the study area.
<i>Erythranthe diffusa</i>	Palomar monkeyflower	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Eucnide rupestris</i>	annual rock-nettle	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Euphorbia arizonica</i>	Arizona spurge	None/None/2B.3	None	List B	Not expected to occur. There is no suitable vegetation present.
<i>Euphorbia misera</i>	cliff spurge	None/None/2B.2	None	List B	Not expected to occur. This species usually occurs near the coast.
<i>Euphorbia platysperma</i>	flat-seeded spurge	None/None/1B.2	None	List A	Not expected to occur. There is no suitable vegetation present.
<i>Euphorbia revoluta</i>	revolute spurge	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Ferocactus viridescens</i>	San Diego barrel cactus	None/None/2B.1	Covered	List B	Not expected to occur within the impact area, as this species would have likely been detected during rare plant surveys if present within the small amount of suitable vegetation present. Higher potential to occur within chaparral or scrub within the buffer.
<i>Frankenia palmeri</i>	Palmer's frankenia	None/None/2B.1	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	FE/SR/1B.1	None	List A	Not expected to occur within the impact area. More potential to occur within the study area. This is a shrub that would have been detected during focused rare plant surveys if present in the impact area. There are not known occurrences within ten miles of the study area (CCH 2020).
<i>Funastrum utahense</i>	Utah vine milkweed	None/None/4.2	None	List D	Not expected to occur. There is no suitable vegetation present.
<i>Galium angustifolium</i> ssp. <i>borregoense</i>	Borrego bedstraw	None/SR/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Galium angustifolium</i> ssp. <i>jacinticum</i>	San Jacinto Mountains bedstraw	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Galium johnstonii</i>	Johnston's bedstraw	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Geraea viscida</i>	sticky geraea	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Githopsis diffusa</i> ssp. <i>filicaulis</i>	Mission Canyon bluecup	None/None/3.1	None	List C	Not expected to occur. The site is outside of the species' known elevation range.
<i>Grindelia hallii</i>	San Diego gumplant	None/None/1B.2	None	List A	Not expected to occur. Known occurrences of this species are limited to the central and southern areas of San Diego county (CCH 2020).
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	None/None/4.2	None	List D	Not expected to occur. The study area contains suitable vegetation, but lacks clay soils.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Hazardia orcuttii</i>	Orcutt's hazardia	None/ST/1B.1	None	List A	Not expected to occur. The study area contains suitable vegetation, but lacks clay soils. There are not known occurrences in the immediate vicinity. (CCH 2020).
<i>Herissantia crispa</i>	curly herissantia	None/None/2B.3	None	List B	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Hesperocyparis forbesii</i>	Tecate cypress	None/None/1B.1	None	List A	Not expected to occur within the impact area. Low potential to occur within chaparral habitat within the project buffer. There are no known occurrences of this species within ten miles of the study area (CCH 2020).
<i>Hesperocyparis stephensonii</i>	Cuyamaca cypress	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Heterotheca sessiliflora</i> ssp. <i>sanjacintensis</i>	Sessileflower false goldenaster	None/None/None	None	List D	Not expected to occur. The study area is not montane and is outside of the known range for this species.
<i>Heuchera brevistaminea</i>	Laguna Mountains alumroot	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Heuchera rubescens</i> var. <i>versicolor</i>	San Diego County alumroot	None/None/3.3	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Hordeum intercedens</i>	vernal barley	None/None/3.2	None	List C	Not expected to occur. There is no suitable vegetation or vernal pools present to support this species.
<i>Horkelia truncata</i>	Ramona horkelia	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Horsfordia newberryi</i>	Newberry's velvet-mallow	None/None/4.3	None	List D	Not expected to occur. The study area lacks Sonoran desert scrub.
<i>Hosackia crassifolia</i> var. <i>otayensis</i>	Otay Mountain lotus	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Hulsea californica</i>	San Diego sunflower	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Hulsea mexicana</i>	Mexican hulsea	None/None/2B.3	None	List B	Not expected to occur. The site is outside of the species' known elevation range.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Hymenothrix wrightii</i>	Wright's hymenothrix	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Ipomopsis tenuifolia</i>	slender-leaved ipomopsis	None/None/2B.3	None	List B	Not expected to occur. The nearest known occurrence of this species is east of the Cleveland National Forest (CCH 2020).
<i>Iva hayesiana</i>	San Diego marsh-elder	None/None/2B.2	None	List B	Low potential to occur. There is no marsh habitat and there are no vernal pools present, however this species could occur within other habitat types near water.
<i>Johnstonella costata</i>	ribbed cryptantha	None/None/4.3	None	List D	Not expected to occur. There is no suitable vegetation present to support this species.
<i>Johnstonella holoptera</i>	winged cryptantha	None/None/4.3	None	List D	Not expected to occur. No suitable vegetation present.
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	southwestern spiny rush	None/None/4.2	None	List D	Low potential to occur. There is no suitable vegetation present to support this species. The nearest known occurrence is approximately 15 miles southwest, near the coast (CHH 2020).
<i>Juncus cooperi</i>	Cooper's rush	None/None/4.3	None	List D	Not expected to occur. There are no known occurrences of this species in the vicinity of the study area (CCH 2020).
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None/None/1B.1	None	List A	Low potential to occur. There is no suitable coastal salt marsh and there are no vernal pools present, however this species could occur within other habitat types.
<i>Lepechinia cardiophylla</i>	heart-leaved pitcher sage	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Lepechinia ganderi</i>	Gander's pitcher sage	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Lepidium flavum</i> var. <i>felipense</i>	Blair Valley pepper-grass	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Leptosiphon floribundus</i> ssp. <i>hallii</i>	Santa Rosa Mountains leptosiphon	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Leptosyne maritima</i>	sea dahlia	None/None/2B.2	None	List B	Not expected to occur. This species typically occurs nearer to the coast.
<i>Lessingia glandulifera</i> var. <i>tomentosa</i>	Warner Springs lessingia	None/None/1B.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Lewisia brachycalyx</i>	short-sepaled lewisia	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Lilium parryi</i>	lemon lily	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Limnanthes alba</i> ssp. <i>parishii</i>	Parish's meadowfoam	None/SE/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Linanthus bellus</i>	desert beauty	None/None/2B.1	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Linanthus orcuttii</i>	Orcutt's linanthus	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Lupinus albifrons</i> var. <i>medius</i>	Mountain Springs bush lupine	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Lycium californicum</i>	California box-thorn	None/None/4.2	None	List D	Low potential to occur. There are no known occurrences of this species in the vicinity of the study area, with the nearest known occurrences being to the west, near the coast (CCH 2020). Additionally, this species is a shrub and likely would have been observed during rare plant surveys if present within the impact area.
<i>Lycium parishii</i>	Parish's desert-thorn	None/None/2B.3	None	List B	Not expected to occur. This species is known to occur farther inland, in desert areas. Additionally, this species is a shrub and likely would have been observed during rare plant surveys if present within the impact area.
<i>Lyrocarpa coulteri</i>	Palmer's lyrepod	None/None/4.3	None	List D	Not expected to occur. There is no suitable vegetation present to support this species.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Malacothamnus aboriginum</i>	Indian Valley bush-mallow	None/None/1B.2	None	List A	Not expected to occur. While there is suitable vegetation present to support this species, there are no known occurrences of this species in the vicinity and it was not observed within the impact area during rare plant surveys in 2020. The nearest known occurrence of this species is near Borrego Springs (CCH 2020).
<i>Malperia tenuis</i>	brown turbans	None/None/2B.3	None	List B	Not expected to occur. There is not suitable vegetation present to support this species.
<i>Matelea parvifolia</i>	spearleaf	None/None/2B.3	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Mentzelia hirsutissima</i>	hairy stickleaf	None/None/2B.3	None	List B	Not expected to occur. There is not suitable vegetation present to support this species.
<i>Microseris douglasii</i> ssp. <i>platycarpa</i>	small-flowered microseris	None/None/4.2	None	List D	Not expected to occur. While there are suitable vegetation communities present, there is not suitable clay soil present in the study area to support this species.
<i>Mimulus latidens</i>	Vernal pool monkeyflower	None/None/None	None	List A	Not expected to occur. No suitable vegetation present.
<i>Mirabilis tenuiloba</i>	slender-lobed four o'clock	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Monardella nana</i> ssp. <i>leptosiphon</i>	San Felipe monardella	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Monardella stoneana</i>	Jennifer's monardella	None/None/1B.2	None	List A	Not expected to occur. Known occurrences of this species are limited to southern San Diego county (CCH 2020).
<i>Monardella viminea</i>	willow monardella	FE/SE/1B.1	None	List A	Not expected to occur. While there is suitable vegetation present to support this species, there are no known occurrences of this species in the vicinity and it was not observed within the impact area during

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
					rare plant surveys in 2020. The nearest known occurrence of this species is near Poway (CCH 2020).
<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	None/None/3.1	Covered	List C	Not expected to occur. This species typically occurs in vernal pools, which are not present in the study area.
<i>Nama stenocarpa</i>	mud nama	None/None/2B.2	None	List B	Low potential to occur. This species is typically found along margins of ponds and lakes or very slow moving streams. The nearest known occurrence of this species is approximately 13 miles away from the study area, in Oceanside (CCH 2020).
<i>Nasturtium gambelii</i>	Gambel's water cress	FE/ST/1B.1	None	List A	Not expected to occur. There is not suitable vegetation present.
<i>Navarretia fossalis</i>	spreading navarretia	FT/None/1B.1	Covered	List A	Not expected to occur. There is not suitable vegetation present.
<i>Navarretia peninsularis</i>	Baja navarretia	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	None/None/1B.2	None	List A	Not expected to occur. This species typically occurs in vernal pools, which are not present in the study area.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast woolly-heads	None/None/1B.2	None	List A	Not expected to occur. No suitable vegetation present.
<i>Nemacaulis denudata</i> var. <i>gracilis</i>	slender cottonheads	None/None/2B.2	None	List B	Not expected to occur. No suitable vegetation present.
<i>Nolina interrata</i>	Dehesa nolina	None/SE/1B.1	None	List A	Not expected to occur. This species is not known to occur within the vicinity of the study area (CCH 2020).
<i>Ophioglossum californicum</i>	California adder's-tongue	None/None/4.2	None	List D	Low potential to occur. There is chaparral present within the impact buffer and minimal grassland present in the impact area. There are no vernal pools present in the study area. There are no known occurrences within ten miles of the study area (CCH 2020).
<i>Opuntia wigginsii</i>	Wiggins' cholla	None/None/3.3	None	List C	Not expected to occur. There is not suitable vegetation present.
<i>Orcuttia californica</i>	California Orcutt grass	FE/SE/1B.1	None	List A	Not expected to occur. No suitable vegetation present.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Ornithostaphylos oppositifolia</i>	Baja California birdbush	None/SE/2B.1	None	List B	Not expected to occur. This species is only known to occur in the extreme southern portion of San Diego county (CCH 2020).
<i>Orobanche parishii</i> ssp. <i>brachyloba</i>	short-lobed broomrape	None/None/4.2	None	List D	Not expected to occur. This species typically occurs along the coast.
<i>Packera ganderi</i>	Gander's ragwort	None/SR/1B.2	Narrow Endemic	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Pectocarya peninsularis</i>	Baja California bur-comb	None/None/None	None	List D	Not expected to occur. No suitable vegetation present.
<i>Penstemon clevelandii</i> var. <i>connatus</i>	San Jacinto beardtongue	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Penstemon thurberi</i>	Thurber's beardtongue	None/None/4.2	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Phacelia stellaris</i>	Brand's star phacelia	None/None/1B.1	None	List A	Low potential to occur within coastal sage scrub in the study area. There are no known occurrences of this species within ten miles of the study area (CCH 2020).
<i>Pilostyles thurberi</i>	Thurber's pilostyles	None/None/4.3	None	List D	Not expected to occur. No suitable vegetation present.
<i>Pinus torreyana</i> ssp. <i>torreyana</i>	Torrey pine	None/None/1B.2	None	List A	Not expected to occur. The study area is outside of the known limited range of this species.
<i>Piperia leptopetala</i>	narrow-petaled rein orchid	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Poa atropurpurea</i>	San Bernardino blue grass	FE/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Pogogyne abramsii</i>	San Diego mesa mint	FE/SE/1B.1	None	List A	Not expected to occur. No vernal pools present.
<i>Pogogyne nudiuscula</i>	Otay Mesa mint	FE/SE/1B.1	None	List A	Not expected to occur. No vernal pools present.
<i>Proboscidea althaeifolia</i>	desert unicorn-plant	None/None/4.3	None	List D	Not expected to occur. There is not suitable vegetation present.
<i>Quercus cedrosensis</i>	Cedros Island oak	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Quercus engelmannii</i>	Engelmann oak	None/None/4.2	Covered	List D	Not expected to occur. This species is a tree and likely would have been observed during surveys of the area if present.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Rhus aromatica</i> var. <i>simplicifolia</i>	single-leaved skunkbrush	None/None/2B.3	None	List B	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Ribes canthariforme</i>	Moreno currant	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Ribes viburnifolium</i>	Santa Catalina Island currant	None/None/1B.2	None	List A	Not expected to occur. There are no known occurrences of this species in the vicinity of the study area (CCH 2020). Additionally, this species is a shrub and likely would have been detected if present within the impact area.
<i>Romneya coulteri</i>	Coulter's matilija poppy	None/None/4.2	None	List D	Low potential to occur within chaparral or coastal sage scrub within the study area. This species is generally conspicuous and likely would have been detected during focused rare plant surveys if present within the impact area. The nearest known occurrence is approximately ten miles east of the study area (CCH 2020).
<i>Rosa minutifolia</i>	small-leaved rose	None/SE/2B.1	None	List B	Not expected to occur. The study area is outside of the known limited range of this species.
<i>Rubus glaucifolius</i> var. <i>ganderi</i>	Cuyamaca raspberry	None/None/3.1	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Rupertia rigida</i>	Parish's rupertia	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Saltugilia caruifolia</i>	caraway-leaved woodland-gilia	None/None/4.3	None	List D	Low potential to occur. Sandy soil and chaparral are present within the study area which could support this species. The species was not observed within the impact area during focused rare plant surveys.
<i>Salvia eremostachya</i>	desert sage	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Salvia munzii</i>	Munz's sage	None/None/2B.2	None	List B	Not expected to occur within the impact area. Although there is suitable chaparral and scrub vegetation within the study area, there are no known occurrences in the vicinity of the study area and the species typically

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
					occurs only in the central and southern areas of the county (CCH 2020). The species is a shrub and likely would have been observed during focused rare plant surveys if present within the impact area.
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	southern mountains skullcap	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Selaginella asprella</i>	bluish spike-moss	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Selaginella cinerascens</i>	ashy spike-moss	None/None/4.1	None	List D	Low potential to occur within chaparral or coastal sage scrub within the study area. There are no known occurrences of this species within ten miles of the study area (CCH 2020).
<i>Selaginella eremophila</i>	desert spike-moss	None/None/2B.2	None	List B	Not expected to occur. This species typically occurs farther inland, in desert areas.
<i>Senna covesii</i>	Coves' cassia	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Sibaropsis hammittii</i>	Hammitt's clay-cress	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Spermolepis echinata</i>	bristly scaleseed	None/None/None	None	List B	Not expected to occur. There is not suitable vegetation present.
<i>Stemodia durantifolia</i>	purple stemodia	None/None/2B.1	None	List B	Not expected to occur. There is not suitable vegetation present.
<i>Stipa diegoensis</i>	San Diego County needle grass	None/None/4.2	None	List D	Not expected to occur. While there is suitable vegetation present, this species is not known to occur this far north in San Diego County.
<i>Streptanthus bernardinus</i>	Laguna Mountains jewelflower	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Streptanthus campestris</i>	southern jewelflower	None/None/1B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Stylocline citroleum</i>	oil neststraw	None/None/1B.1	None	List A	Not expected to occur. Although there is coastal sage scrub and grassland present, this species is known to occur in southern San Diego County.

APPENDIX C-2 (Continued)

Scientific Name	Common Name	Status (Federal/State/ CRPR)	North County MSCP	County of San Diego	Potential to Occur
<i>Suaeda esteroa</i>	estuary seablite	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Suaeda taxifolia</i>	woolly seablite	None/None/4.2	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	None/None/1B.2	None	None	Not expected to occur. The study area is within the appropriate elevation range and contains suitable vegetation to support this species, however this species is known to occur farther east.
<i>Thermopsis californica</i> var. <i>semota</i>	velvety false lupine	None/None/1B.2	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Viguiera purisimae</i>	La Purisima viguiera	None/None/2B.3	None	List A	Not expected to occur. The site is outside of the species' known elevation range.
<i>Viola purpurea</i> ssp. <i>aurea</i>	golden violet	None/None/2B.2	None	List B	Not expected to occur. The site is outside of the species' known elevation range.
<i>Xanthisma junceum</i>	rush-like bristleweed	None/None/4.3	None	List D	Not expected to occur. The site is outside of the species' known elevation range.
<i>Xylorhiza orcuttii</i>	Orcutt's woody-aster	None/None/1B.2	None	List A	Not expected to occur. No suitable vegetation present.

APPENDIX D-1

*Special-Status Wildlife Species Occurring or With
Moderate or High Potential to Occur within the
Study Area*

Appendix D-1

Special-Status Wildlife Species Occurring or With Moderate or High Potential to Occur within the Study Area

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Amphibians</i>					
<i>Anaxyrus californicus</i>	arroyo toad	FE/SSC	Covered	Group 1	Moderate potential to occur. The study area contains areas of suitable habitat, is located within USFWS Critical Habitat for this species (USFWS 2020), and there are documented occurrences approximately 3 kilometers downstream (2008/2014) and 0.9 kilometer upstream (2015) of the study area (CDFW 2020). However, focused arroyo toad surveys were conducted in 2020 and the species was not detected within the study area. Additionally, there are large areas of unsuitable deep pools with fish and bullfrogs.
<i>Spea hammondi</i>	western spadefoot	None/SSC	Covered	Group 2	High potential to occur. The study area contains suitable habitat that would support this species. The most recent and nearest documented occurrence of this species is from 2017, approximately 3 miles southwest of the study area (CDFW 2020).
<i>Taricha torosa torosa</i>	Coast range newt	None/SSC	None	Group 2	High potential to occur. The study area supports suitable habitat for this species. There are no known occurrences of this species within 5 miles of the study area (CDFW 2020).
<i>Reptiles</i>					
<i>Actinemys pallida</i>	southwestern pond turtle	None/SSC	Covered	Group 1	Present. The study area contains suitable habitat for this species. There is a documented occurrence of this species within the study area (CDFW 2020), and the species was observed during a focused wildlife survey in 2020.
<i>Anniella stebbinsi</i>	southern California legless lizard	None/SSC	None	Group 2	Present. The study area contains suitable habitat for this species and the species was observed during the May 2018 survey of the study area.

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Aspidoscelis hyperythra</i>	orange-throated whiptail	None/WL	Covered	Group 2	Present. Orange-throated whiptail was observed within the study area during a wildlife survey in 2020.
<i>Aspidoscelis tigris stejnegeri</i>	San Diegan tiger whiptail	None/SSC	Covered	Group 2	Present. The study area contains suitable habitat for this species. The species was detected within the study area during a wildlife survey in 2020.
<i>Crotalus ruber</i>	red diamondback rattlesnake	None/SSC	Covered	Group 2	High potential to occur. The study area contains suitable habitat for this species. There is oak woodland and only a small, isolated patch of coastal sage scrub habitat within the temporary impact area. Per the Santa Margarita Preserve Resource Management Plan, this species was known to occur within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Diadophis punctatus similis</i>	San Diego ringneck snake	None/None	None	Group 2	High potential to occur within the study area. Woodland and grassland habitat occur within the impact area, and suitable chaparral is present within the project buffer. The nearest documented occurrences of this species are 3 miles west and southwest of the study area (CDFW 2020).
<i>Lichanura trivirgata</i>	rosy boa	None/None	None	Group 2	Moderate potential to occur. The study area contains suitable habitat that could support this species.
<i>Phrynosoma blainvillii</i>	Blainville's horned lizard	None/SSC	Covered	Group 2	High potential to occur. The study area contains suitable habitat for this species, appropriate native ant species prey are present, and there is a documented occurrence of this species within one mile of the study area (CDFW 2020).
<i>Plestiodon skiltonianus interparietalis</i>	Coronado skink	None/WL	None	Group 2	Moderate potential to occur. The study area contains suitable habitat for this species along the Santa Margarita River, and chaparral in the project buffer, but is at the northern-most portion of its range in an intergrade area with Skilton's skink.

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Salvadora hexalepis virgulata</i>	coast patch-nosed snake	None/SSC	None	Group 2	Moderate potential to occur. The study area contains suitable habitat, but there are no known occurrences in the immediate vicinity of the study area (CDFW 2020).
<i>Thamnophis hammondi</i>	two-striped gartersnake	None/SSC	Covered	Group 1	High potential to occur. The study area contains suitable habitat that would support this species. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Birds</i>					
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	BCC/WL	Covered	Group 1	Moderate potential to occur within the impact buffer in unfragmented sage scrub and chaparral. Low potential to occur within the impact area. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Accipiter cooperii</i> (nesting)	Cooper's hawk	None/WL	None	Group 1	Present. High potential to forage and nest. This species was observed within the study area during surveys in 2020.
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	None/WL	Covered	Group 1	Moderate potential to occur within open habitat in the impact area - more likely to occur in scrub and chaparral habitats within impact buffer. Per the Santa Margarita Preserve Resource Management Plan, this species was observed within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Aquila chrysaetos</i> (nesting and wintering)	golden eagle	BCC/FP, WL	Covered	Group 1	Moderate potential to forage in adjacent areas. Not expected to be impacted by project activities as golden eagle territories average 36 square miles (Unitt 2004). The study area contains suitable habitat that would support this species. However, the high degree of regular human use would cause eagles to avoid this particular area and the species would not be expected to nest within the study area. According to data from golden eagle surveys conducted by the USFWS, the nearest documented golden eagle sighting was approximately 0.8 miles northwest of the study area in 2016.

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Ardea herodias</i>	great blue heron	None/None	None	Group 2	Present. The species was observed within the study area during a survey in 2020.
<i>Asio otus</i> (nesting)	long-eared owl	None/SSC	None	Group 1	Moderate potential to occur. Riparian habitat and coast live oak woodland are present within the study area, with more open habitat nearby to support foraging habits of the species. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Branta canadensis</i>	Canada goose	None/None	None	Group 2	Moderate potential to occur. The Santa Margarita River provides suitable habitat for this species.
<i>Buteo lineatus</i>	red-shouldered hawk	None/None	None	Group 1	Present. This species was observed by Dudek biologists during surveys of the study area in 2020.
<i>Cathartes aura</i>	turkey vulture	None/None	None	Group 1	Present. This species was observed during multiple surveys of the study area in 2020.
<i>Elanus leucurus</i> (nesting)	white-tailed kite	None/FP	None	Group 1	Moderate potential to nest and forage. The study area contains suitable habitat that would support this species. Per the Santa Margarita Preserve Resource Management Plan, this species is known to occur within the vicinity of the Santa Margarita Preserve (County of San Diego 2012).
<i>Empidonax traillii extimus</i> (nesting)	southwestern willow flycatcher	FE/SE	Covered	Group 1	Moderate potential to nest and forage. The study area contains suitable habitat and is located within USFWS Critical Habitat for this species (USFWS 2020). However, the species was not detected in 2020 during focused surveys for the species. The nearest known occurrence is less than three miles northeast of the study area (CDFW 2020).
<i>Falco columbarius</i> (wintering)	merlin	None/WL	None	Group 2	Moderate potential to occur. The study area supports semi-open areas for foraging. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Icteria virens</i> (nesting)	yellow-breasted chat	None/SSC	Covered	Group 1	Present. The study area contains suitable habitat for this species and the species was observed during multiple surveys in 2020.

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Melospiza melodia</i>	song sparrow	None/SSC	None	None	Present. This species was observed during multiple surveys of the study area in 2020.
<i>Pandion haliaetus</i>	osprey	None/CSC	Covered	Group 1	Present. Two osprey were observed soaring and circling above the study area on July 24, 2020. This species is not expected to be impacted directly by project implementation.
<i>Polioptila californica californica</i>	coastal California gnatcatcher	FT/SSC	Covered	Group 1	Moderate potential to forage within the impact area. Higher potential to nest and forage within the impact buffer. The study area contains suitable habitat for this species. In addition, the study area is located within USFWS Critical Habitat for this species (USFWS 2020). The most recent known occurrence of this species is from 2001, 4 miles south of the study area (CDFW 2020). The nearest known occurrence is roughly 3.5 miles southwest of the study area, from 1998 (CDFW 2020). The species is only expected to nest within the sage scrub vegetation community. There is only a small, isolated patch of coastal sage scrub within the project impact area.
<i>Setophaga petechia</i> (nesting)	yellow warbler	BCC/SSC	None	Group 2	Present. The study area contains suitable habitat for this species and the species was observed during multiple surveys in 2020.
<i>Sialia mexicana</i>	western bluebird	None/None	None	Group 2	Moderate potential to forage and nest within the study area as the species will also nest in oaks and other trees.
<i>Tyto alba</i>	barn owl	None/None	None	Group 2	Present. This species and its sign was observed by Dudek biologists during surveys of the study area in 2020.
<i>Vireo bellii pusillus</i> (nesting)	least Bell's vireo	FE/SE	Covered	Group 1	Present. The study area contains suitable habitat for this species. In addition, the study area is located within USFWS Critical Habitat for this species (USFWS 2020), there are documented occurrences within the

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
					study area (CDFW 2020), and this species was detected during the May 2018 and 2020 surveys.
<i>Fishes</i>					
<i>Gila orcuttii</i>	arroyo chub	None/SSC	Covered	Group 1	Moderate potential to occur. The study area contains suitable habitat that would support this species and there are documented occurrences both upstream and downstream of the study area (CDFW 2020). The nearest documented occurrence is roughly 2 miles east of the study area (CDFW 2020). Likely due to presence of non-native aquatic species such as bass, sunfish, crayfish, bullfrogs and bullhead, Arroyo chub are now rarely sighted in the river.
<i>Oncorhynchus mykiss irideus</i>	southern steelhead - southern California DPS	FE/None	None	Group 1	High potential to occur. The study area contains suitable habitat that would support this species and there are documented occurrences both upstream and downstream of the study area (CDFW 2020). Dudek observed <i>Oncorhynchus mykiss</i> within the study area in 2020.
<i>Mammals</i>					
<i>Antrozous pallidus</i>	pallid bat	None/SSC	Covered	Group 2	Moderate potential to roost and forage. The study area contains suitable habitat that would support this species. There is one documented occurrence roughly 4.5 miles south of the study area, from 1946 (CDFW 2020).
<i>Bassariscus astutus</i>	ringtail	None/FP	None	Group 2	Moderate to High potential to occur. The study area supports suitable habitat for this species, including a water source, riparian habitat, and shrublands.
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None/SSC	None	Group 2	High potential to occur. The study area contains suitable habitat that would support this species; including small areas of non-native grassland within the temporary impact area. Per the Santa Margarita Preserve Resource Management Plan, this species

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
					was known to occur within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	None/SSC	None	Group 2	High potential to occur. The study area contains suitable habitat that would support this species; including small areas of non-native grassland within the temporary impact area. This species was recorded as occurring within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Euderma maculatum</i>	spotted bat	None/SSC	None	Group 2	Moderate potential to occur. The study area contains suitable foraging habitat and this species may roost within rock crevices in offsite areas.
<i>Eumops perotis californicus</i>	western mastiff bat	None/SSC	None	Group 2	Moderate potential to roost and forage in the study area. The study area contains suitable habitat that would support this species. Within the impact area, trees provide suitable roosting habitat. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None/SSC	Covered	Group 2	Moderate potential to occur within the project buffer. Low potential to occur in the impact area. The study contains suitable habitat that would support this species; however, the project impact area contains limited suitable habitat. The species was not observed during surveys in 2018 or 2020 and there are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Lasiurus blossevillei</i>	western red bat	None/SSC	None	Group 2	Moderate potential to occur. The study area contains trees, especially Eucalyptus trees, which provide suitable habitat for this species. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Myotis ciliolabrum</i>	western small-footed myotis	None/None	None	Group 2	High potential to occur. The study area contains suitable habitat including woodland, scrub, and water for this species. The species is known to have been

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
					detected within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Myotis evotis</i>	long-eared myotis	None/None	None	Group 2	Moderate potential to occur. The study area does not contain coniferous habitat, which is preferred by this species for roosting, however suitable foraging habitat exists on the study area. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Myotis thysanodes</i>	fringed myotis	None/None	None	Group 2	Moderate potential to occur. Coast live oak woodland and the Sandia Creek Drive bridge within the study area could serve as suitable habitat for this species. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Myotis volans</i>	long-legged myotis	None/None	None	Group 2	Moderate potential to occur. This species primarily occurs in coniferous forests. Riparian habitat in the study area could serve as suitable habitat. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Myotis yumanensis</i>	Yuma myotis	None/None	None	Group 2	High potential to occur. The study area contains suitable riparian habitat for this species. The species is known to have been detected within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None/SSC	None	Group 2	Moderate potential to occur within the project buffer. Low potential to occur within the impact area. The study area contains only marginal habitat that would support the midden-building preferences of this species. The impact area does not contain suitable rocky outcrops preferred by this species. The species is known to have been detected within the Santa Margarita Preserve in 2011 (County of San Diego 2012).

APPENDIX D-1 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Odocoileus hemionus</i>	mule deer	None/None	None	Group 2	High potential to occur. Although it was not observed during the surveys conducted by Dudek, the species could use any of the natural habitat within the study area. The species was detected in the vicinity of the study area in 2011 (County of San Diego 2012).
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	None/SSC	None	Group 2	Moderate potential to occur. The study area contains a small amount of non-native grassland, and coastal sage scrub which could support this species. There are no known occurrences within 5 miles of the study area (CDFW 2020).
<i>Puma concolor</i>	cougar	None/None	Covered	Group 2	High potential to occur. The study area provides suitable scrub and riparian habitat to support cover and hunting needs of this species. The species was known to occur within the Santa Margarita Preserve in 2011 (County of San Diego 2012).
<i>Taxidea taxus</i>	American badger	None/SSC	Covered	Group 2	Not expected to occur within the impact area; moderate potential to occur within the study area on occasion. The study area contains coastal scrub which could support this wide-ranging species. The impact area contains many trees and is frequented by human activity. There are no known occurrences within 5 miles of the study area (CDFW 2020).

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APPENDIX D-1 (Continued)

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APPENDIX D-2

*Special-Status Wildlife Species with Low Potential
or Not Expected to Occur within the Study Area*

Appendix D-2

Special-Status Wildlife Species with Low Potential or Not Expected to Occur within the Study Area

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Amphibians</i>					
<i>Batrachoseps major aridus</i>	desert slender salamander	FE/SE	None	Group 1	Not expected to occur. There is no desert habitat present in the study area that would support this species.
<i>Rana draytonii</i>	California red-legged frog	FT/SSC	None	Group 1	Not expected to occur. The study area contains suitable habitat that would support this species, however there are no known occurrences in the vicinity of the study area (CDFW 2020) and is outside the known current range of the species.
<i>Rana muscosa</i>	mountain yellow-legged frog	FE/SE, WL	None	Group 1	Not expected to occur. The study area is outside of the known range for this species.
<i>Reptiles</i>					
<i>Coleonyx switaki</i>	Switak's banded gecko	None/ST	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	None/SSC	None	Group 1	Low potential to occur. The study area contains only marginal habitat that would support this species.
<i>Lampropeltis zonata</i> (pulchra)	California mountain kingsnake (San Diego population)	None/None	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Phrynosoma mcallii</i>	flat-tailed horned lizard	None/SSC	None	Group 1	Not expected to occur. The study area is outside of the species' geographic range.
<i>Sauromalus obesus</i>	chuckwalla	None/None	None	Group 2	Not expected to occur. No suitable vegetation present. Outside of geographic range.
<i>Sceloporus graciosus</i> <i>vandenburgianus</i>	southern sagebrush lizard	None/None	None	Group 2	Not expected to occur. The study area is west of the species' known geographic range.
<i>Uma notata</i>	Colorado Desert fringe-toed lizard	None/SSC	None	Group 1	Not expected to occur. The study area is outside of the species' geographic range.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Birds</i>					
<i>Accipiter striatus</i> (nesting)	sharp-shinned hawk	None/WL	None	Group 1	Not expected to nest as it does not nest on the coastal slope in southern California, but high potential to migrate and forage within the study area. Riparian and woodland habitat is present and could support this species.
<i>Agelaius tricolor</i> (nesting colony)	tricolored blackbird	BCC/SSC, ST	Covered	Group 1	Low potential to nest within the study area. The study area contains suitable habitat for foraging, but limited suitable habitat for nesting.
<i>Ammodramus savannarum</i> (nesting)	grasshopper sparrow	None/SSC	Covered	Group 1	Low potential to occur. The amount of suitable habitat for this species within the study area is relatively small and isolated.
<i>Anser caerulescens</i>	snow goose	None/None	None	Group 2	Not expected to occur. No suitable vegetation present.
<i>Antigone canadensis canadensis</i> (wintering)	lesser sandhill crane	None/SSC	None	Group 2	Not expected to occur. The study area does not support suitable wintering habitat for this species.
<i>Antigone canadensis tabida</i> (nesting and wintering)	greater sandhill crane	None/FP, ST	None	Group 2	Not expected to occur. The study area does not support suitable wintering habitat for this species.
<i>Asio flammeus</i> (nesting)	short-eared owl	None/SSC	None	Group 2	Not expected to occur. The site does not support normal habitat for this winter visitor.
<i>Athene cunicularia</i> (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Covered	Group 1	Low potential to nest and forage. The study area contains minimal suitable habitat that would support this species' combined preferences for foraging and nesting.
<i>Aythya americana</i> (nesting)	redhead	None/SSC	None	Group 2	Low potential to nest within the study area. The study area does not contain ideal nesting habitat for this species.
<i>Bucephala islandica</i> (nesting)	Barrow's goldeneye	None/SSC	None	Group 2	Not expected to occur. The study area is outside of the species' current known geographic range for nesting.
<i>Buteo regalis</i> (wintering)	ferruginous hawk	BCC/WL	None	Group 1	Not expected to occur. This species rarely occurs in this area and there is limited suitable foraging habitat in the study area.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Buteo swainsoni</i> (nesting)	Swainson's hawk	BCC/ST	None	Group 1	Not expected to nest or forage. The study area contains riparian habitat that would support this species, however the species only migrates through San Diego and generally east of the mountains.
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	BCC/SSC	Covered	Group 1	Not expected to occur. The study area does not contain suitable cactus scrub habitat that would support this species.
<i>Cerorhinca monocerata</i> (nesting colony)	rhinoceros auklet	None/WL	None	Group 2	Not expected to occur. Unsuitable habitat. The site is outside of the species' known geographic range.
<i>Charadrius alexandrinus nivosus</i> (nesting)	western snowy plover	FT, BCC/SSC	None	Group 1	Not expected to occur. The site is outside the species' known range. Additionally, there is no suitable habitat present for this species to nest as there are no saline or alkaline lakes, reservoirs, or ponds present.
<i>Charadrius montanus</i> (wintering)	mountain plover	BCC/SSC	None	Group 2	Not expected to occur. The study area is within the historic wintering range for this species, but is outside of the currently known geographic range.
<i>Chlidonias niger</i> (nesting colony)	black tern	None/SSC	None	Group 2	Not expected to occur. There is no suitable habitat present to support a nesting colony of this species.
<i>Circus hudsonius</i> (nesting)	northern harrier	None/SSC	Covered	Group 1	Not expected to occur. The study area does not represent suitable nesting habitat for this species.
<i>Coccyzus americanus occidentalis</i> (nesting)	western yellow-billed cuckoo	FT, BCC/SE	None	Group 1	Not expected to occur. The site is outside of the species' known current geographic range. Habitat is not large or dense enough to support this species.
<i>Contopus cooperi</i> (nesting)	olive-sided flycatcher	BCC/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.
<i>Cypseloides niger</i> (nesting)	black swift	BCC/SSC	None	Group 2	Not expected to occur. There is no suitable nesting habitat for this species within the study area, as there are no waterfalls present.
<i>Dendrocygna bicolor</i> (nesting)	fulvous whistling-duck	None/SSC	None	Group 2	Not expected to occur. There is no suitable nesting habitat for this species within the study area.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Egretta rufescens</i>	reddish egret	None/None	None	Group 2	Not expected to occur. The study area is outside of the known current geographic range for this species.
<i>Eremophila alpestris actia</i>	California horned lark	None/WL	None	Group 2	Low potential to occur. There is limited suitable open habitat for this species.
<i>Falco mexicanus</i> (nesting)	prairie falcon	BCC/WL	None	Group 1	Low potential to nest. Especially within the impact area, there is limited suitable open habitat for this species to forage. There are no cliffs or bluffs within the impact area.
<i>Falco peregrinus anatum</i> (nesting)	American peregrine falcon	FDL, BCC/FP, SDL	None	Group 1	Low potential to nest. The bridge and structure present within the study area is small and would likely not be suitable for this species to nest on. This species could forage within the riparian habitat present.
<i>Fratercula cirrhata</i> (nesting colony)	tufted puffin	None/SSC	None	Group 2	Not expected to occur. No suitable vegetation present. The study area is outside of the geographic range of the species.
<i>Gavia immer</i> (nesting)	common loon	None/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Haliaeetus leucocephalus</i> (nesting and wintering)	bald eagle	FDL, BCC/SE, FP	None	Group 1	Low potential to nest or winter within the study area. The Santa Margarita River as it occurs in the study area is not a large body of water, as is preferred by bald eagles. There are not known occurrences in the immediate vicinity of the study area (CDFW 2020).
<i>Ixobrychus exilis</i> (nesting)	least bittern	BCC/SSC	None	Group 2	Low potential to nest and forage. The study area contains marginal habitat that would support this species.
<i>Junco hyemalis caniceps</i> (nesting)	gray-headed junco	None/WL	None	Group 2	Not expected to occur. There is no suitable pine forest habitat present.
<i>Lanius ludovicianus</i> (nesting)	loggerhead shrike	BCC/SSC	None	Group 1	Low potential to nest within the study area. The study area contains suitable habitat that would support this species. The project impact area contains limited suitable open habitat for foraging. Species would have been observed during the surveys.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Larus californicus</i> (nesting colony)	California gull	None/WL	None	Group 2	Not expected to occur. There is no suitable lake habitat present to support a nesting colony.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	BCC/FP, ST	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range. Extirpated.
<i>Leucophaeus atricilla</i> (nesting colony)	laughing gull	None/WL	None	Group 2	Not expected to occur. There is no suitable habitat present to support a nesting colony of this species.
<i>Melanerpes lewis</i> (nesting)	Lewis's woodpecker	BCC/None	None	Group 1	Not expected to occur. The study area is outside of the species' currently known range.
<i>Mycteria americana</i>	wood stork	None/SSC	None	Group 2	Not expected to occur. The study area is outside of the known current geographic range for this species.
<i>Numenius americanus</i> (nesting)	long-billed curlew	BCC/WL	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Oceanodroma furcata</i> (nesting colony)	fork-tailed storm-petrel	None/SSC	None	Group 2	Not expected to occur. The study area is inland therefore not suitable habitat for this species.
<i>Oceanodroma homochroa</i> (nesting colony)	ashy storm-petrel	BCC/SSC	None	Group 2	Not expected to occur. The study area is inland therefore not suitable habitat for this species.
<i>Oceanodroma melania</i> (nesting colony)	black storm-petrel	None/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Oreoryx pictus</i>	mountain quail	None/None	None	Group 2	Not expected to occur. This study area is not montane.
<i>Oreothlypis luciae</i> (nesting)	Lucy's warbler	BCC/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	None/SE	None	Group 1	Not expected to occur. There is no suitable habitat present to support this species.
<i>Passerculus sandwichensis rostratus</i> (wintering)	large-billed savannah sparrow	None/SSC	None	Group 2	Not expected to occur. No suitable vegetation present.
<i>Pelecanus erythrorhynchos</i> (nesting colony)	American white pelican	None/SSC	None	Group 2	Low potential to occur. The river and surrounding sandy areas could serve as suitable habitat, but frequent disturbance from hikers and other recreational activity would likely make this not an ideal site for the species.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Pelecanus occidentalis californicus</i> (nesting colonies and communal roosts)	California brown pelican	FDL/FP, SDL	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Phalacrocorax auritus</i> (nesting colony)	double-crested cormorant	None/None	None	Group 2	Not expected to nest due to poor nesting resources. Present as a foraging species. This species was observed within the study area during a survey in 2020.
<i>Piranga rubra</i> (nesting)	summer tanager	None/SSC	None	Group 2	Not expected to occur. There is riparian habitat present, however this species is unlikely to occur in this region and typically occurs farther east.
<i>Plegadis chihi</i> (nesting colony)	white-faced ibis	None/WL	Covered	Group 1	Low potential to nest onsite due to poor resources. However, the species may forage within the study area (CDFW 2020).
<i>Progne subis</i> (nesting)	purple martin	None/SSC	None	Group 1	Not expected to occur. The study area is outside of the species' known range for nesting.
<i>Pyrocephalus rubinus</i> (nesting)	vermillion flycatcher	None/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Rallus obsoletus levipes</i>	Ridgway's rail	FE/SE, FP	Covered	Group 1	Not expected to occur. The site is outside of the species' known limited geographic range and there is no suitable vegetation present.
<i>Riparia riparia</i> (nesting)	bank swallow	None/ST	None	Group 1	Not expected to occur. This study area is outside of the known nesting range of this species.
<i>Rynchops niger</i> (nesting colony)	black skimmer	BCC/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Sternula antillarum browni</i> (nesting colony)	California least tern	FE/FP, SE	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Strix occidentalis occidentalis</i>	California spotted owl	BCC/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Synthliboramphus scrippsi</i> (nesting colony)	Scripps's murrelet	FC, BCC/ST	None	Group 2	Not expected to occur. The study area is inland therefore not suitable habitat for this species.
<i>Thalasseus elegans</i> (nesting colony)	elegant tern	None/WL	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Toxostoma bendirei</i>	Bendire's thrasher	BCC/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.
<i>Toxostoma crissale</i>	Crissal thrasher	None/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Toxostoma lecontei</i>	LeConte's thrasher	BCC/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Vireo vicinior</i> (nesting)	gray vireo	BCC/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Fishes</i>					
<i>Cyprinodon macularius</i>	desert pupfish	FE/SE	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Eucyclogobius newberryi</i>	tidewater goby	FE/SSC	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Gasterosteus aculeatus williamsoni</i>	unarmored threespine stickleback	FE/FP, SE	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Mammals</i>					
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None/SSC	None	Group 2	Not expected to occur. There is no suitable desert habitat for this species.
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	None/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None/SSC	Covered	Group 2	Low potential to occur. Suitable riparian habitat is present within the study area, however, this species is highly sensitive to human disturbance and the site lacks suitable undisturbed caves or mines that could provide roosting opportunities.
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	FE/ST	Covered	Group 1	Not expected to occur. The study area contains only marginal habitat that could support this species but is too isolated. There are known occurrences of this species within ten miles of the study area (CDFW 2020), but are not connected.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Macrotus californicus</i>	Californian leaf-nosed bat	None/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range. Extirpated.
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	None/SSC	None	Group 2	Not expected to occur. The study area does not contain suitable habitat that would support this species which typically occurs in more xeric conditions.
<i>Nyctinomops macrotis</i>	big free-tailed bat	None/SSC	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Ovis canadensis nelsoni</i>	Nelson's bighorn sheep	None/FP	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range.
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	None/SSC	None	Group 2	Not expected to occur. The site is south of the species' known geographic range.
<i>Perognathus longimembris internationalis</i>	Jacumba pocket mouse	None/SSC	None	Group 2	Not expected to occur. The site is north of the species' known geographic range.
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE/SSC	None	Group 1	Not expected to occur. The site is east of the species' known geographic range.
<i>Invertebrates</i>					
<i>Ariolimax columbianus stramineus</i>	Palomar banana slug	None/None	None	Group 2	Not expected to occur. Outside of known range.
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	FE/None	Covered	Group 1	Not expected to occur. The study area does not contain suitable vernal pool habitat that would support this species. There are known occurrences of this species within ten miles of the study area (CDFW 2020).
<i>Brennania belkini</i>	Belkin's dune tabanid fly	None/None	None	Group 2	Not expected to occur. No suitable vegetation present.
<i>Callophrys thornei</i>	Thorne's hairstreak	None/None	None	Group 1	Not expected to occur. There is no suitable habitat present that would support this species.
<i>Cicindela gabbii</i>	western tidal-flat tiger beetle	None/None	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	None/None	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Cicindela latesignata latesignata</i>	western beach tiger beetle	None/None	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.

APPENDIX D-2 (Continued)

Scientific Name	Common Name	Status (Federal/State)	San Diego MSCP North County	San Diego County	Potential to Occur
<i>Cicindela senilis frosti</i>	senile tiger beetle	None/None	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.
<i>Coelus globosus</i>	globose dune beetle	None/None	None	Group 1	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	FE/None	Covered	Group 1	Not expected to occur. The study area does not contain suitable habitat as defined by the 2014 USFWS survey protocol with host plants that would support this species.
<i>Euphyes vestris harbisoni</i>	Harbison dun skipper	None/None	None	Group 1	Not expected to occur. The host plant for this species was not observed within the study area.
<i>Helminthoglypta traski coelata</i>	Peninsular Range shoulderband snail	None/None	None	Group 2	Low potential to occur. This species is typically found along/near ocean beaches.
<i>Linderiella occidentalis</i>	California linderiella	None/None	None	Group 1	Not expected to occur. There is not suitable vernal pool habitat present to support this species.
<i>Lycaena hermes</i>	Hermes copper	FC/None	Covered	Group 1	Low potential to occur within the study area; not expected to occur within the impact area. Hermes copper depends on spiny redberry as a host plant. This plant was observed within the project buffer, but is not present within the impact area.
<i>Panoquina errans</i>	wandering skipper	None/None	None	Group 1	Not expected to occur. No suitable vegetation present.
<i>Pseudocopaodes eunus eunus</i>	alkali skipper	None/None	None	Group 1	Not expected to occur. There is no suitable habitat present to support this species.
<i>Pyrgus ruralis lagunae</i>	Laguna Mountains skipper	FE/None	None	Group 1	Not expected to occur. No suitable vegetation present.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE/None	Covered	Group 1	Not expected to occur. The study area does not contain suitable vernal pool habitat that would support this species.
<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	None/None	None	Group 2	Not expected to occur. The site is outside of the species' known geographic range.

CDFW (California Department of Fish and Wildlife). 2020. California Natural Diversity Database. Accessed 2020. <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.
 USFWS. 2020. "Critical Habitat and Occurrence Data" [map]. Accessed 2020. <http://www.fws.gov/data>.

APPENDIX D-2 (Continued)

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APPENDIX E

***2020 Focused Southwestern Willow Flycatcher and
Least Bell's Vireo Survey Report for the
Santa Margarita River Bridge Replacement
Project, San Diego County, California***

August 25, 2020

11093

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: *Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Santa Margarita River Bridge Replacement Project, San Diego County, California*

Dear Recovery Permit Coordinator:

This report documents the results of eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's vireo (*Vireo bellii pusillus*), and five protocol-level presence/absence surveys for the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*). The surveys were conducted in all areas of suitable least Bell's vireo and southwestern willow flycatcher habitat.

The southwestern willow flycatcher and least Bell's vireo are closely associated with riparian habitats, especially densely vegetated willow scrub and riparian forest vegetation. These species are threatened primarily by loss, degradation, and fragmentation of riparian habitats. They also are impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

1 Location and Existing Conditions

The Santa Margarita River Bridge Replacement Project (project) is located within the northwestern portion of Section 7, Township 9 South, Range 3 West on the Temecula U.S. Geological Survey 7.5-minute quadrangle map (USGS 2016); latitude 33°24'50.71"N and longitude 117°14'29.80"W. The study area is near the intersection of Rock Mountain Drive and Sandia Creek Drive in unincorporated San Diego County, within the community of Fallbrook (Figure 1). A project study area (approximately 62 acres) was created to evaluate biological resources potentially present within and surrounding (within 500 feet of) this portion of Santa Margarita River. Existing conditions/land uses in the area include open space, including the Santa Margarita River Trail Preserve.

2 Vegetation Communities

Vegetation communities identified within the study area as potentially suitable habitat for the southwestern willow flycatcher and least Bell's vireo include southern cottonwood-willow riparian forest, southern willow scrub, and areas of coast live oak woodland that are in close proximity to Santa Margarita River.

Southern Cottonwood-Willow Riparian Forest

Southern cottonwood-willow riparian forest is dominated by deciduous trees species: Fremont cottonwood (*Populus fremontii*) or balsam poplar (*Populus trichocarpa*), and various willow trees (*Salix* ssp.) (Holland 1986). The shrub layer typically includes various willow species (Holland 1986).

Within the study area, this association is located on the banks and specifically the less-frequently flooded areas of the Santa Margarita River. Tall, mature trees including red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Fremont cottonwood, and California sycamore (*Platanus racemosa*) comprise these areas of riparian forest within the study area. Smaller willows are present in the understory.

Disturbed Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous riparian thickets dominated by several *Salix* species with scattered emergent Fremont cottonwood and California sycamore. Spatial distribution of southern willow scrub is presented on Figure 2.

Within the study area, southern willow scrub is located in the northwestern portion of the study area. Characteristic of land in early stages of recovery from fire, this small area currently has a high cover of non-native grasses in its open areas and is therefore mapped as being in disturbed form.

Coast Live Oak Woodland

Coast live oak woodland includes coast live oak (*Quercus agrifolia*) as the dominant or co-dominant tree in the canopy. This vegetation community forms a continuous to open tree canopy less than 30 feet in height with a sparse to intermittent shrub layer and sparse or grassy ground layer (Sawyer et al. 2009). Species associated with the alliance includes bigleaf maple (*Acer macrophyllum*), blue oak (*Quercus douglasii*), box elder (*Acer negundo*), California laurel (*Umbellularia californica*), Engelmann oak (*Quercus engelmannii*), California sycamore, Southern California black walnut (*Juglans californica*), valley oak (*Quercus lobata*), arroyo willow (*Salix lasiolepis*), California black oak (*Quercus kelloggii*), and Pacific madrone (*Arbutus menziesii*) (Sawyer et al. 2009).

Within the study area, this vegetation community is generally located in the upland canyons surrounding the Santa Margarita River. This community is dominated by coast live oak and has an understory comprised of poison oak, short podded mustard (*Hirschfeldia incana*), and red brome (*Bromus madritensis* ssp. *rubens*). In addition, this community is located on a small, terraced island within the western portion of the study area along the bank of the Santa Margarita River. Within this region, this vegetation community is located alongside a hill with rock outcrops dominated by coast live oak, but also contained cover of laurel sumac (*Malosma laurina*), California sycamore, and some willow species. The understory was comprised of non-native grasses and rocks.

3 Methods

Suitable habitat areas within the study area were surveyed eight times for vireo and five times for flycatcher. Flycatcher-permitted wildlife biologist Paul Lemons (Recovery Permit number TE051248) conducted all sequential flycatcher/vireo surveys, and Dudek Biologist Olivia Koziel conducted three vireo-only surveys (Table 1). Audio-playback techniques were used to elicit flycatcher responses during flycatcher surveys. Focused surveys for these species were initiated on May 4, 2020, and continued through July 24, 2020.

Table 1. Least Bell's Vireo and Southwestern Willow Flycatcher Survey Results

Survey Pass #/ Focus	Date	Biologist	Hours	Conditions (temperature, cloud cover, wind speed)
1-LBVI	5-4-2020	Olivia Koziel	7:00 AM–10:15 AM	55-73 °F; 0% cc; 0-2 mph wind
2-LBVI	5-15-2020	Olivia Koziel	7:15 AM–10:59 AM	60-72 °F; 90-0% cc; 0-3 mph wind
1-SWFL 3-LBVI	5-26-2020	Paul Lemons	6:00 AM–10:00 AM	61-77 °F; 100-0% cc; 0-4 mph wind
2- SWFL 4-LBVI	6-9-2020	Paul Lemons	6:00 AM–9:00 AM	63-85 °F; 0% cc; 0-4 mph wind
3- SWFL 5-LBVI	6-19-2020	Paul Lemons	6:40 AM–9:30 AM	63-71 °F; 100% cc; 0-4 mph wind
4- SWFL 6-LBVI	6-30-2020	Paul Lemons	6:40 AM–9:30 AM	63-71 °F; 100-5% cc; 0-2 mph wind
5- SWFL 7-LBVI	7-13-2020	Paul Lemons	6:00 AM–9:20 AM	67-81 °F; 100-0% cc; 0-4 mph wind
8-LBVI	7-24-2020	Olivia Koziel	7:10 AM–10:37 AM	65-72 °F; 100-0% cc; 1-3 mph wind

Notes: LBVI = least Bell's vireo; SWFL = Southwestern willow flycatcher; cc = cloud cover; mph = miles per hour; °F = degrees Fahrenheit.

As directed by Stacey Love, United States Fish and Wildlife Service (USFWS) Recovery Permit Coordinator (via email sent on April 27, 2016), surveys for vireo and flycatcher were not conducted concurrently. Due to differences in detectability, surveys were conducted sequentially, with surveys for the flycatcher first (i.e., first thing in the morning) and surveys for the vireo conducted afterwards. Additionally, for linear survey routes within a riparian corridor, flycatchers were surveyed from the starting point to the end, and vireos were surveyed on the way back. The route was arranged to cover all suitable habitat on site (as depicted on Figure 2). A vegetation map (1:2,400 scale; 1 inch=200 feet) of the study area was available to record any detected vireo or flycatcher. Binoculars (10×50) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (*A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher* [Sogge et al. 2010]), which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. It is recommended that one survey is made between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Surveys during the final period (June 25 and July 17) were separated by at least five days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. If a flycatcher had been detected, playing of the tape would have ceased to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted *Least Bell's Vireo Survey Guidelines* (USFWS, 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo

vocalizations were not used during the surveys. Surveys were conducted between dawn and noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

Weather conditions, time of day, and season were appropriate for the detection of flycatcher and vireo (Table 1).

4 Results

No southwestern willow flycatchers were detected within the survey area during the 2020 focused survey effort. Several least Bell's vireos were detected during each focused survey pass (see Figure 2). Some vireos were observed directly, however most were detected by hearing males singing, indicating that breeding territories were being established over the course of the survey effort. No vireo nests were detected during focused surveys, however nesting is expected to occur within the focused survey area. Based on review of the mapped results, it is estimated that there are 8 to 10 vireo males attempting to establish breeding territories within the focused survey area. A total of 61 wildlife species were detected in the study area during focused surveys of the site (Appendix A). In addition, a completed Willow Flycatcher Survey and Detection Form is included as Appendix B. Overview photos of the habitat surveyed are included as Figures 3a and 3b.

Please feel free to contact me at 858.336.4030 with questions or if you require additional information. I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,

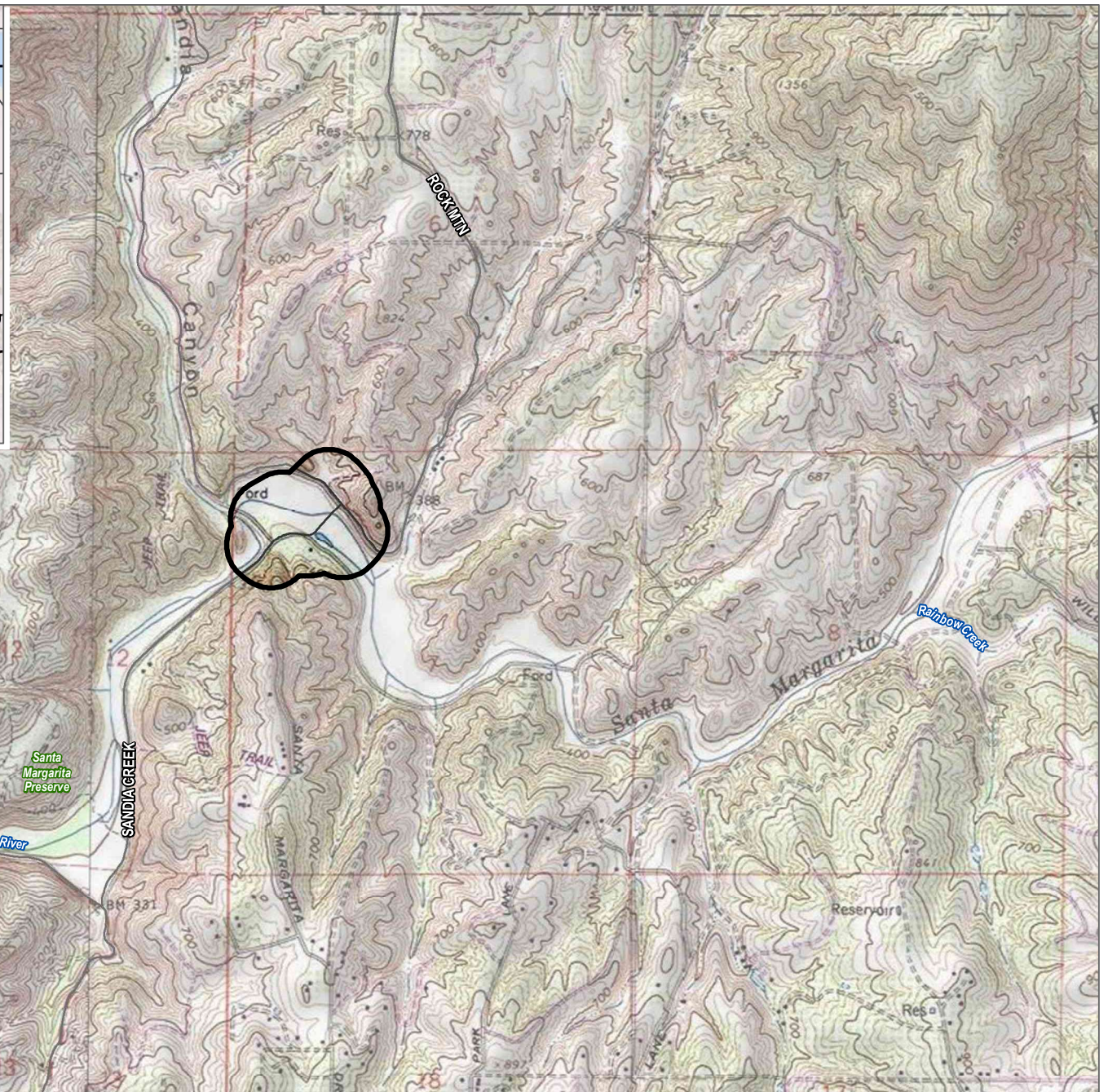


Paul Lemons
Wildlife Biologist

Att: Figure 1, Project Location Map
Figure 2, Biological Resources and Survey Route
Figures 3a and 3b, Overview Photos of Habitat Surveyed
Appendix A, Wildlife Species Observed on the Project Site
Appendix B, Willow Flycatcher Survey and Detection Form
cc: Patricia Schuyler, Dudek
Olivia Koziel, Dudek

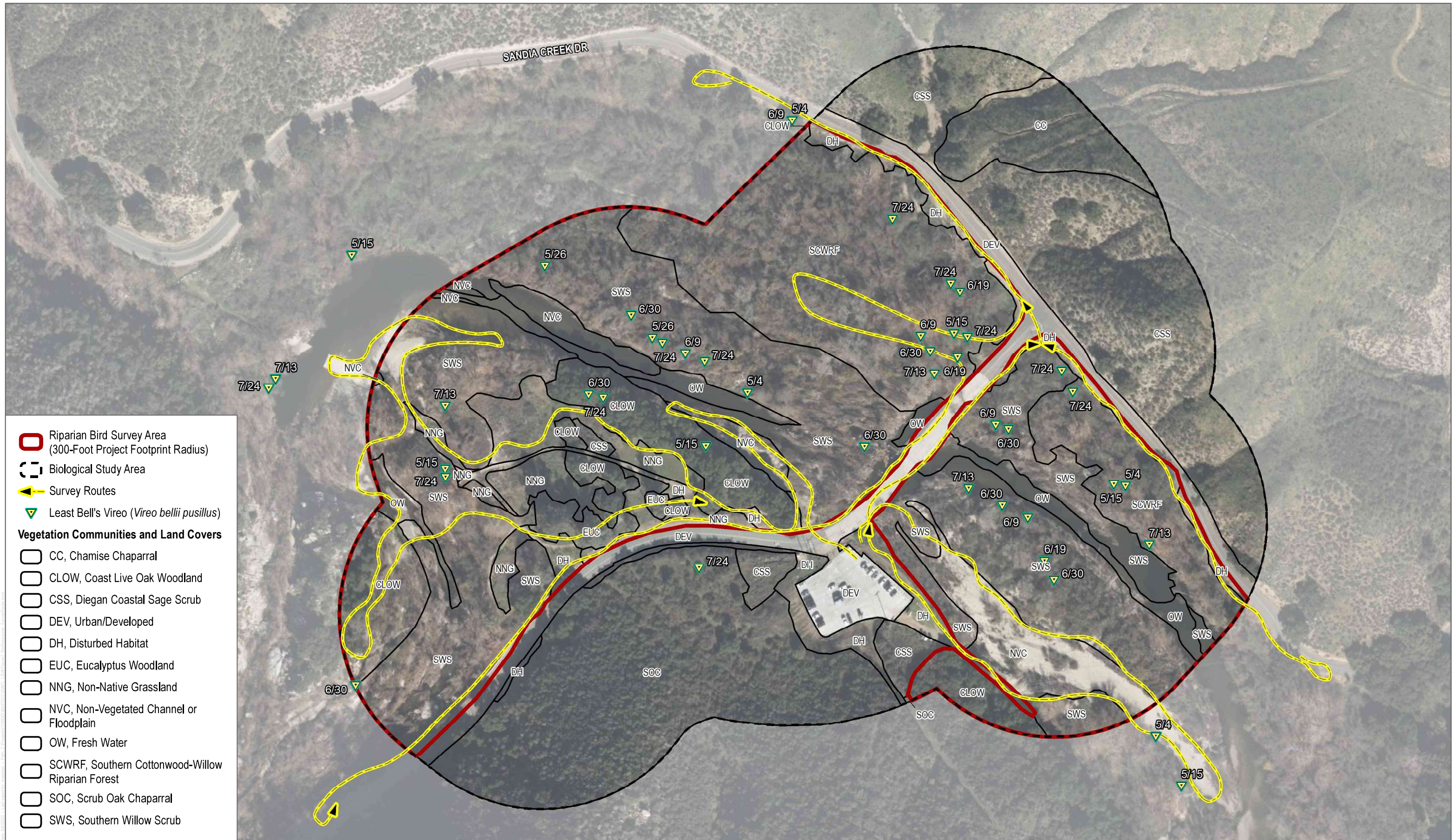
5 References

- CDFG. 2010. List of Vegetation Alliances and Associations (Natural Communities List). Sacramento, California: CDFG, Vegetation Classification and Mapping Program. September 2010. http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp.
- Sawyer, J., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation*. Second Edition. Sacramento, California: California Native Plant Society in collaboration with California Department of Fish and Game.
- Sogge, M.K., Ahlers, Darrell, and S.J. Sferra. 2010. *A natural history summary and survey protocol for the southwestern willow flycatcher*. U.S. Geological Survey Techniques and Methods 2A-10. 38 p.
- USFWS (U.S. Fish and Wildlife Service). 2001. Least Bell's Vireo Survey Guidelines. January 19.



SOURCE: USGS 7.5-Minute Series Temecula Quadrangle

FIGURE 1
Project Location



SOURCE: Bing Maps 2020

FIGURE 2

Biological Resources and Survey Route

2020 Focused Southwestern Willow Flycatcher and Least Bell's Vireo Survey Report for the Santa Margarita River Bridge Replacement Project, San Diego County, California



FIGURE 3B

Overview Photos of Habitat Surveyed



Appendix A

Wildlife Species Observed on the Project Site

AMPHIBIAN

FROGS

RANIDAE—TONGUELESS FROGS

- * *Lithobates catesbeianus*—American bullfrog

BIRD

BLACKBIRDS, ORIOLES AND ALLIES

ICTERIDAE—BLACKBIRDS

- Quiscalus mexicanus*—great-tailed grackle

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

- Psaltiriparus minimus*—bushtit

CARDINALS, GROSBEAKS AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

- Pheucticus melanocephalus*—black-headed grosbeak

CORMORANTS

PHALACROCORACIDAE—CORMORANTS

- Phalacrocorax auritus*—double-crested cormorant

EMBERIZINES

EMBERIZIDAE—EMBERIZIDS

- Melospiza melodia*—song sparrow
Melospiza crissalis—California towhee
Pipilo maculatus—spotted towhee

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

- Spinus psaltria*—lesser goldfinch
Haemorhous mexicanus—house finch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee
Myiarchus cinerascens—ash-throated flycatcher
Sayornis nigricans—black phoebe
Empidonax difficilis—Pacific-slope flycatcher

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk
Buteo jamaicensis—red-tailed hawk
Buteo lineatus—red-shouldered hawk
Pandion haliaetus—osprey

HERONS AND BITTERNS

ARDEIDAE—HERONS, BITTERNS, AND ALLIES

Ardea herodias—great blue heron
Butorides virescens—green heron
Nycticorax nycticorax—black-crowned night-heron

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird
Calypte costae—Costa's hummingbird
Selasphous sp.—Allen's/rufous hummingbird

JAYS, MAGPIES AND CROWS

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—western scrub-jay
Corvus brachyrhynchos—American crow
Corvus corax—common raven

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird
Toxostoma redivivum—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Stelgidopteryx serripennis—northern rough-winged swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis—white-throated swift

TITMICE

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus—oak titmouse

VIREOS

VIREONIDAE—VIREOS

Vireo bellii pusillus—least Bell's vireo

WATERFOWL

ANATIDAE—DUCKS, GEESE, AND SWANS

Anas platyrhynchos—mallard

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Geothlypis trichas—common yellowthroat
Icteria virens—yellow-breasted chat
Oreothlypis celata—orange-crowned warbler
Setophaga petechia—yellow warbler

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Melanerpes formicivorus—Acorn woodpecker
Picoides nuttallii—Nuttall's woodpecker
Picoides pubescens—downy woodpecker
Colaptes auratus—northern flicker

WRENS

TROGLODYTIDAE—WRENS

Thryomanes bewickii—Bewick's wren
Troglodytes aedon—house wren

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

FISH

MINNOWS AND CARPS

CYPRINIDAE—MINNOWS AND CARPS

* *Cyprinus carpio*—common carp

INVERTEBRATE

BUTTERFLIES

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Junonia coenia—common buckeye
Limenitis lorquini—Lorquin's admiral
Nymphalis antiopa—mourning cloak

PAPILIONIDAE—SWALLOWTAILS

Papilio rutulus—western tiger swallowtail

PIERIDAE—WHITES AND SULFURS

Pontia protodice—checkered white

MAMMAL

RATS AND MICE

MURIDAE—RATS AND MICE

Neotoma fuscipes—dusky-footed woodrat

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis hyperythra beldingi—Belding's orange-throated whiptail
Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail

TURTLES

EMYDIDAE—BOX AND WATER TURTLES

Actinemys marmorata—western pond turtle
* *Trachemys scripta*—pond slider

* signifies introduced (non-native) species

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Appendix B

Willow Flycatcher Survey and Detection Form

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (<http://www.fws.gov/southwest/es/arizona/>) for the most up-to-date version.

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Santa Margarita River Bridge Replacement State CA County San Diego
 USGS Quad Name Temecula Elevation 102 (meters)
 Creek, River, Wetland, or Lake Name Santa Margarita River
 Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes ☒ No ☐

Survey Coordinates: Start: E 4777231 N 3697267 UTM Datum NAD83 (See instructions)
 Stop: E 477763 N 3697655 UTM Zone 11S

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

**** Fill in additional site information on back of this page ****

Survey #	Observer(s) (Full Name)	Date (m/d/y)	Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, <i>Diorhabda</i> spp.]). If <i>Diorhabda</i> found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
									# Birds	Sex	UTM E	UTM N
Survey # 1	Observer(s) <u>Paul Lemons</u>	Date <u>5/16/20</u>	Start <u>0600</u> Stop <u>1000</u> Total hrs <u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N/A</u>					
Survey # 2	Observer(s) <u>Paul Lemons</u>	Date <u>6/1/20</u>	Start <u>0600</u> Stop <u>0900</u> Total hrs <u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N/A</u>					
Survey # 3	Observer(s) <u>Paul Lemons</u>	Date <u>6/1/20</u>	Start <u>0640</u> Stop <u>0930</u> Total hrs <u>2.8</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N/A</u>					
Survey # 4	Observer(s) <u>Paul Lemons</u>	Date <u>6/30</u>	Start <u>0640</u> Stop <u>0930</u> Total hrs <u>2.8</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N/A</u>					
Survey # 5	Observer(s) <u>Paul Lemons</u>	Date <u>7/13</u>	Start <u>0600</u> Stop <u>0920</u> Total hrs <u>3.3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N/A</u>					
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs <u>15.9</u>				Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes ☐ No ☒ If yes, report color combination(s) in the comments section on back of form and report to USFWS. <u>N/A</u>				
				<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>					

Reporting Individual Paul Lemons Date Report Completed August 2020
 US Fish and Wildlife Service Permit # TE 051248-G State Wildlife Agency Permit # SL10690

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Paul Lecombs Phone # 858-336-4030
 Affiliation Consultant - Dudek E-mail plemons@dudek.com
 Site Name Santa Margarita River Bridge Replacement Project Date Report Completed Aug 2020

Did you verify that this site name is consistent with that used in previous years? Yes ☐ No ☐ Not Applicable ☒

If site name is different, what name(s) was used in the past? _____

If site was surveyed last year, did you survey the same general area this year? Yes ☐ No ☐ If no, summarize below: N/A

Did you survey the same general area during each visit to this site this year? Yes ☒ No ☐ If no, summarize below. _____

Management Authority for Survey Area: Federal ☐ Municipal/County ☒ State ☐ Tribal ☐ Private ☐

Name of Management Entity or Owner (e.g., Tonto National Forest) _____

Length of area surveyed: 570 (meters)

Vegetation Characteristics: Mark the category that best describes the predominant tree/shrub foliar layer at this site (check one):

☒ Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)

☐ Mixed native and exotic plants (mostly native, 50 - 90% native)

☐ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

☐ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Salix lasiophylla, Salix laevigata, Populus fremontii

Average height of canopy (Do not include a range): 7 (meters)

Attach copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections.

Attach sketch or aerial photo showing site location, patch shape, survey route, location of any WIFLs or WIFL nests detected.

Attach photos of the interior of the patch, exterior of the patch, and overall site; describe any unique habitat features.

Comments (attach additional sheets if necessary)

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM N	UTM E	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

APPENDIX F
2018 Jurisdictional Delineation Report

May 30, 2018

11093

Dr. Sandra Jacobson, Ph.D.
California Trout
5425 Oberlin Drive, Suite 209
San Diego, California 92121

Subject: Jurisdictional Delineation Report for the Santa Margarita River Bridge Replacement Project, San Diego County, California

Dear Dr. Jacobson:

This report presents the findings of a jurisdictional delineation of aquatic resources conducted by Dudek for the removal of an existing crossing (Sandia Creek Drive bridge) over the Santa Margarita River and replacement with a span bridge located approximately 100 feet downstream. The existing crossing is located beneath Sandia Creek Drive in unincorporated San Diego County within the community of Fallbrook, California (Figure 1).

The purpose of this investigation is to evaluate the presence and extent of aquatic resources that may be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW). The investigation included an analysis of the Santa Margarita River and one tributary, which are proposed to be modified as part of long-term flood control maintenance activities.

This report is intended to satisfy formal documentation according to the delineation guidelines and protocols stipulated by the USACE under Section 404 of the federal Clean Water Act (CWA), and the CDFW under Section 1600-1607 of the California Fish and Game Code.

STUDY AREA LOCATION AND DESCRIPTION

The proposed road improvement activities would occur along a portion of the Santa Margarita River approximately 100 feet southwest of the intersection of Rock Mountain Drive and Sandia Creek Drive in the community of Fallbrook. Dudek evaluated the proposed project area, plus a 500-foot buffer totaling approximately 61.82 acres ("the study area"). The study area is located within the northwestern portion of Section 7, Township 9 South, Range 3 West on the Temecula U.S. Geological Survey 7.5-minute quadrangle map (USGS 2015); latitude 33°24'50.71"N and longitude 117°14'29.80"W (Figure 1). The study area is approximately 21 miles east of the Pacific Ocean.

Dr. Sandra Jacobson, Ph.D.

Subject: *Jurisdictional Delineation Report for the Santa Margarita River Bridge Replacement Project, San Diego County, California*

California Trout (on behalf of Trout Unlimited) is proposing to replace the Sandia Creek Drive bridge due to the impediment it has created for fish passage, and in particular, the federally-listed as endangered southern steelhead (*Oncorhynchus mykiss*). Southern steelhead along this reach of the Santa Margarita River are designated as a Core 1 population (high priority) within the National Marine Fisheries Service (NMFS) Southern California Steelhead Recovery Plan (NMFS 2012). The replacement of the existing crossing structure with the span bridge and pier structure approximately 100 feet downstream (proposed project) would address one of the most significant threats to southern California steelhead recovery efforts.

The study area is surrounded by open space in all directions. The study area primarily supports riparian vegetation communities and land covers (red willow-arroyo willow, ephemeral drainages and washes, and open water), but also includes upland vegetation communities and land covers (chamise, California sagebrush, California sagebrush-California buckwheat, coast live oak, disturbed habitat, and urban/developed). Elevations range from approximately 330 to 455 feet above mean sea level (amsl).

SUMMARY OF REGULATIONS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The USACE Regulatory Program regulates activities pursuant to Section 404 of the CWA; the CDFW regulates activities under the Fish and Game Code Sections 1600–1616; and the RWQCB regulates activities under Section 401 of the CWA and the Porter–Cologne Water Quality Control Act (Porter–Cologne Act).

The USACE regulates “discharge of dredged or fill material” into “waters of the United States,” which includes tidal waters, interstate waters, and all other waters that are part of a tributary system to interstate waters or to navigable “waters of the United States,” the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide (33 CFR, Part 328.3(a)), pursuant to provisions of Section 404 of the CWA. The USACE generally takes jurisdiction within rivers and streams to the “ordinary high water mark” (OHWM) determined by erosion, the deposition of vegetation or debris, and changes in vegetation. The USACE defines jurisdictional wetlands as areas that contain hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with the procedures established in the *Corps Wetland Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). The EPA and USACE published a final rule (33 CFR, Part 328) defining the scope of waters protected under the CWA in response to several U.S. Supreme Court rulings including the *U.S. v. Riverside Bayview Homes*, 474 U.S. 121 (1985; Riverside); *Solid Waste Agency of*

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Subject: Jurisdictional Delineation Report for the Santa Margarita River Bridge Replacement Project, San Diego County, California

Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001; SWANCC); and *Rapanos v. United States*, 547 U.S. 715 (2006; Rapanos). As a result of the final rule, EPA and USACE agencies define “waters of the United States” to include eight categories of jurisdictional waters: traditional navigable waters (TNW), interstate waters, territorial seas, impoundments of jurisdictional waters, tributary waters, adjacent waters, case-by-case determination that require a significant nexus (combined), and case-by-case determination that requires a significant nexus (individually).

In accordance with Section 1600 et seq. of the California Fish and Game Code (Streambed Alteration), the CDFW regulates activities which “will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank, of any river, stream, or lake designated by the Department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit.” The CDFW takes jurisdiction to the top of bank of the stream, or the limit of the adjacent riparian vegetation, referred to in this report as “streambed and associated riparian habitats.” Applications to the CDFW must include a complete certified California Environmental Quality Act (CEQA) document.

The RWQCB regulates “discharging waste, or proposing to discharge waste, within any region that could affect the water of the state” (Water Code Section 13260 (a)), pursuant to provisions of the Porter–Cologne Act. “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code Section 13050 (e)). Before the USACE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) under the Porter–Cologne Act. Applications to the RWQCB must include a complete certified CEQA document.

METHODS

Data regarding aquatic resources present within the study area were obtained through a review of pertinent literature and field assessment; both are described in detail below.

Literature Review

Prior to visiting the study area, potential and/or historic drainages and aquatic features were investigated based on a review of the following: USGS topographic maps (1:24,000 scale), aerial photographs, the National Wetland Inventory (NWI) database (USFWS 2016), and the Natural

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Resource Conservation Service (NRCS) Web Soil Survey (USDA 2018a). In addition, hydrologic information from gauge stations within the vicinity of the study area was obtained.

Jurisdictional Delineation – Field Assessment

Following the initial data collection, Dudek biologists Ryan Henry and Anna Cassady performed a formal (routine) wetlands delineation within the study area on May 4, 2018. All areas that were identified as being potentially subject to the jurisdiction of the USACE, RWQCB, and CDFW were field verified and mapped.

The USACE wetlands delineation was performed in accordance with the *Corps Wetlands Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008), and recent changes to 33 CFR, Part 328 provided by the USACE and EPA on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA. Non-wetland waters of the United States were delineated based on the limits of an OHWM. During the jurisdictional delineation, drainage features were examined for evidence of an OHWM, saturation, permanence of surface water, wetland vegetation, and nexus to a traditional navigable water of the United States. If any of these criteria were met, transects were run to determine the extent of each regulatory agency's jurisdiction.

Transects were taken approximately every 300 feet or greater if streambed conditions were unchanged. Data on transect widths, dominant vegetation present within the drainage and in the adjacent uplands, and channel morphology were recorded on field forms. In areas where USACE jurisdictional wetlands were suspected, data on vegetation, hydrology, and soils were collected along transects.

Areas regulated by the RWQCB are generally coincident with the USACE, but include features isolated from navigable waters of the United States that have evidence of surface water inundation. The CDFW jurisdiction was defined to the bank of the stream/channels or to the limit of the adjacent riparian vegetation.

Drainage features were mapped during the field observation to obtain characteristic parameters and detailed descriptions using standard measurement tools. The location of transects, upstream and downstream extents of each feature, and sample points were collected in the field using a 1:2,400 scale (1 inch = 200 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy. Dudek geographic information system (GIS)

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technician Curtis Battle digitized the jurisdictional extents based on the GPS data and transect width measurements into a project-specific GIS using ArcGIS software.

RESULTS

Dudek used the methods described above to determine the presence or absence of USACE, RWQCB, and CDFW jurisdiction within the study area. A portion of the Santa Margarita River and one of its tributaries were investigated within the study area as potential jurisdictional resources. The identification of jurisdictional features within the study area was complicated by the historic and ongoing management practices that have altered the natural vegetation, soils, and hydrology of the area. The determination of aquatic resource jurisdiction within the study area was supported by information obtained from the USGS topographic map, Web Soil Survey, USFWS NWI map, and field assessment. Information obtained from each source is described below.

USGS Topographic and Watershed Map Review

Current and historic USGS 7.5-minute Temecula, California topographic maps were utilized to identify natural and man-made features occurring within the vicinity of the study area (USGS 1968; 2015). Information obtained from the map included contour lines, streets, streams, railroad lines, and vegetation. The 1968 Temecula, California map was based on 1967 aerial photography that was photo-revised in 1975. The study area was mapped as undeveloped land with a few light arterial roads (Sandia Creek Drive and Rocky Mountain Drive). Sandia Creek Drive historically crossed the Santa Margarita River along the western edge of the study area. The Santa Margarita River, Sandia Creek, and a drainage that followed Rocky Mountain Drive and Gavilan Mountain Road appear as “blue-line streams.” No other aquatic features or significant structural features are identified on the map within the study area’s boundaries.

The project site occurs within Gavilan Subarea (2.22) of the DeLuz Hydrologic Area (2.20), which occurs within the larger Santa Margarita Hydrologic Unit (RWQCB 1994; Figure 3). According to the USGS, the project site occurs within the Rainbow Creek-Santa Margarita River subwatershed (HUC12: 180703020503) of the Santa Margarita River hydrologic area (HUC10: 1807030205) and larger Santa Margarita River watershed (USGS HUC8: 18070302). The Santa Margarita River watershed encompasses a drainage area of approximately 750 square miles and extends from the Santa Ana Mountains to the Pacific Ocean approximately 3 miles northwest of Oceanside at the Gulf of Santa Catalina on the Camp Pendleton Marine Corps Base. Major tributaries within the upper watershed include Murrieta Creek, Temecula Creek, Rainbow Creek, Sandia Creek, and De Luz Creek.

Soil Survey Review

The U.S. Department of Agriculture, NRCS's Web Soil Survey for the San Diego Area, California (USDA 2018a) was consulted and identified five soil series and two soil types as occurring throughout the study area (Figure 4). According to the *Soil Survey, San Diego Area, California* (USDA 1973), the study area occurs within the following five soil series:

- The Cieneba soil series (Order: Entisols; Subgroup: Typic Xerorthents) consists of somewhat excessively-drained soils that formed in material weathered from granitic rocks of the Santa Ana Mountains and from the sandstone of the coastal foothills. These soils occur at elevations from 200 to 4,000 feet amsl. Uncultivated areas yield primarily brush vegetation. Two specific soil types occur within the study area. The Cieneba coarse sandy loam, 30% to 65% slopes, eroded (CIG2) soils occur on steep to very steep slopes and have rapid to very rapid runoff with a high to very high erosion hazard. The Cieneba very rocky coarse sandy loam, 30% to 75% slopes (CmrG) soils also occur on steep to very steep slopes and have rapid to very rapid runoff with a high to very high erosion hazard.
- The Ramona soil series (Order: Alfisols; Subgroup: Typic Haploxeralfs) consists of well-drained soils that formed in granitic alluvium. The soils occur at elevations from 200 to 1,800 feet amsl. Uncultivated areas include mouse barley, wild oats, filaree, soft chess, chamise, and scattered oaks and annual forbs. The specific soil series that occurs within the study area is Ramona sandy loam, 5% to 9% slopes (RaC). This soil occurs on moderately sloping soils on terraces and alluvial fans. Runoff is slow to medium and permeability is moderately slow. The erosion hazard is slight to moderate.
- The Tujunga soil series (Order: Entisols; Subgroup: Typic Xeropsamments) consists of very deep, excessively drained sands that formed in granitic alluvium. These soils occur at elevations that range from sea level to 1,500 feet amsl. Vegetation within uncultivated areas includes annual grasses, forbs, and scattered oaks. The specific soil series that occurs within the study area is the Tujunga sand, 0% to 5% slopes (TuB). This soil occurs on alluvial fans and floodplains. Runoff is very slow to slow and permeability is very rapid. The erosion hazard is slight.
- The Visalia soil series (Order: Mollisols; Subgroup: Pachic Haploxerolls) consists of moderately well-drained, very deep sandy loams that formed in granitic alluvium. These soils occur at elevations that range from 400 to 2,000 feet amsl. Vegetation within uncultivated areas includes annual grasses, chamise, buckwheat, and oaks. The specific soil series that occurs within the study area is the Visalia gravelly sandy loam, 2% to 5%

slopes (VbB). This soil occurs on alluvial fans and floodplains. Runoff is slow and permeability is moderate. The erosion hazard is slight.

- The Vista soil series (Order: Inceptisols; Subgroup: Typic Xerocherpts) consists of well-drained, moderately deep and deep coarse sandy loams that formed in granodiorite or quartz diorite. These soils occur at elevations that range from 300 to 2,500 feet amsl. Vegetation within uncultivated areas includes chaparral species such as chamise, buckwheat, mustards, sumac, sugarbush, and annual forbs. The specific soil series that occurs within the study area is the Vista rocky coarse sandy loam, 30% to 65% slopes (VvG). Runoff is rapid to very rapid and the erosion hazard is high to very high.

The study area also occurs within the following two soil types (USDA 1973):

- The Riverwash (Rm) soil type consists of areas of unconsolidated alluvium, generally stratified, and varying widely in texture, recently deposited by intermittent streams, and subject to frequent changes through stream overflow. Runoff is generally rapid and the erosion hazard is high. Deposition and removal of fresh alluvium are common. This soil type is mapped throughout the majority of the study area and associated with the Santa Margarita River.
- The Steep gullied land (StG) soil type consists of areas of strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock. Vegetative cover is sparse or severely depleted by grazing or fires and limited to shrubs and annual grasses or forbs. Runoff is very rapid and the erosion hazard is very high. This soil type is mapped north of the Santa Margarita River and associated with Tributary SMR1.

The Riverwash soil type is a hydric soil that is frequently flooded for long to very long durations during the growing season (USDA 2018b). The hydric landforms associated with this soil type are fans. Other specific soil types mapped within the study area that are also hydric soils include the Steep gullied land (StG) and Tujunga sand, 0% to 5% slopes (TuB). The steep gullied land is categorized with an aquic suborder that meets one or more field indicators of hydric soils and associated with depressional land form. This mapping unit occurs north of the Santa Margarita River along Tributary SMR1. The Tujunga mapping unit is associated with frequent and long flooding durations within drainageway landforms. This mapping unit occurs along the Santa Margarita River along the eastern edge of the study area.

National Wetlands Inventory Review

A review of the *National Wetlands Inventory* dataset revealed several wetland resources associated with the Santa Margarita River (USFWS 2018). The following wetland types were mapped within the study area:

- **PFOC (Palustrine, forested, seasonally flooded):** This type of wetland includes nontidal systems dominated by woody vegetation that is greater than 18 feet in height. Surface water is present for extended periods especially early in the growing season, but absent by the end of the growing season in most years. This resource was mapped along a majority of the Santa Margarita River.
- **PFOA (Palustrine, forested, temporarily flooded):** This type of wetland includes nontidal systems dominated by woody vegetation that is greater than 18 feet in height. Surface water is present for brief periods (a few days to weeks), but the water table typically occurs well below the ground surface for most of the season. This resource was mapped along the Santa Margarita River just downstream of the merge with Sandia Canyon Creek in the western portion of the study area.
- **R2UBH (Riverine, lower perennial, unconsolidated bottom, permanently flooded):** This type of wetland includes natural or artificial channels/streambeds that are characterized by a low gradient. Surface water is present throughout the year in all years and flows except during years of extreme drought. The streambed contains at least 25% cover of particles smaller than stones and less than 30% cover of vegetation. This resource was mapped along the mainstem of the Santa Margarita River throughout the study area.
- **R2UBF (Riverine, lower perennial, unconsolidated bottom, semi-permanently flooded):** This type of wetland includes natural or artificial channels/streambeds that are characterized by a low gradient. Surface water is present throughout the growing season in most years and flows except during years of extreme drought. The water table is typically at or very near the ground when surface water is absent. The streambed contains at least 25% cover of particles smaller than stones and less than 30% cover of vegetation. This resource was mapped in the general alignment of drainage features that appear on the NWI map south of the study area.
- **R2USA (Riverine, lower perennial, unconsolidated shore, temporary flooded):** This type of wetland includes natural or artificial channels/streambeds that are characterized by a low gradient. Surface water is present throughout the year in all years and flows except during years of extreme drought. The streambed contains of unconsolidated substrate with less than 75% cover of stones, boulders, or bedrock and less than 30%

cover of vegetation. This resource was mapped in the vicinity of the Santa Margarita River and Sandia Canyon Creek merge.

Field Assessment

A portion of the Santa Margarita River and one of its tributaries were investigated during this assessment. Figure 5 illustrates the location and extent of jurisdiction within the study area, and Table 1 summarizes the amount of jurisdiction calculated within the study area.

Table 1
Summary of Jurisdictional Features

Feature	Length (feet)	Width (feet)		Area (acre)			Nature
		USACE/ RWQCB	CDFW	USACE/ RWQCB Wetlands	USACE/ RWQCB Non-Wetland Waters	CDFW Streambed	
Santa Margarita River	4,733.2	12–110	20–640	6.02	11.75	28.43	Perennial
Tributary SMR1	401.7	3	6	0.03	-	0.06	Ephemeral
Tributary SMR1.1	266.5	3	6	0.02	-	0.04	Ephemeral
Tributary SMR1.2	530.6	3	6	0.04	-	0.07	Ephemeral
Total	5,941.0			6.10	11.75	28.60	

The following descriptions are detailed accounts of the potentially jurisdictional features investigated within the study area. The features are described from their upstream to downstream extent. The wetland indicator status was assigned to each species using the *National Wetland Plant List (California)* (Lichvar et al. 2014), as shown in Table 1. The wetland indicator status of each plant species observed within the OHWM is provided for easy reference (Table 2).

Table 2
Summary of Wetland Indicator Status

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (estimated probability of >99%)
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability of 67% to 99%)
Facultative (FAC)	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34% to 66%)
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67% to 99%)
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99%)
No Indicator (NI)	—

Santa Margarita River

Santa Margarita River is a natural, perennial stream that originates at the confluence of Temecula Creek and Murrieta Creek approximately 0.5 mile southeast of the City of Temecula in southwestern Riverside County. The river (including stream braids) traverses the study area for approximately 4,773 linear feet. Natural springs and other headwater tributaries provide perennial surface water flow throughout the study area. The creek eventually flows into the Pacific Ocean located approximately 20 miles southwest of the study area.

The creek is characterized by an earthen streambed that has a gentle trapezoidal structure that braids in a few locations as distinct, separate channels. The OHWM was primarily continuous throughout the study area and ranged from 12 to 110 feet in width. The CDFW jurisdictional width encompassed the lateral extent of willow woodland community within the study area and ranged from 20 to 640 feet in width. Sandia Creek Road crosses the river in the center of study area. The road was constructed on an elevated concrete foundation with several culvert that allow surface water to flow from upstream (east) to downstream (west). The structure serves to limit the lateral extent of surface waters. The immediate vicinity of the road crossing is actively maintained and free of any vegetation. However, the adjacent areas support a mature willow woodland vegetation community.

The Santa Margarita River mainstem and braided streambed were largely unvegetated; however, the adjacent, distinct channel terraces are dominated with an overstory of arroyo willow (*Salix lasiolepis*; FACW) and red willow (*Salix laevigata*; FACW). Associated species included box elder (*Acer negundo*; FACW), California sycamore (*Platanus racemosa*; FAC), coast live oak (*Quercus agrifolia*; NI), Fremont cottonwood (*Populus fremontii*; NI), and white alder (*Alnus rhombifolia*; FACW). The understory is comprised of Cucamonga manroot (*Marah macrocarpa*; NI), mulefat (*Baccharis salicifolia*; FAC), poison oak (*Toxicodendron diversilobum*; FACU), sandbar willow (*Salix exigua*; FACW), stinging nettle (*Urtica dioica*; FAC), and western ragweed (*Ambrosia psilostachya*; FACU). Representative photographs of the drainage are provided in Figure 6.

Two data stations were established along the Santa Margarita River due to the dominance of hydrophytic vegetation and hydrologic indicators (Appendix A; Data Sheets #1–2). One soil pit was excavated at the most southern transect to determine the jurisdictional status of an adjacent terrace. Soil within the test pit consisted of sand (riverwash) from 0–16 inches below ground surface with a color of 10YR 4/4 in the Munsell (1994) Soil Charts (Data Sheet 1). This soil meets the definition of hydric soils and therefore the terrace location met the USACE definition of a jurisdictional wetland. Due to uniform nature of stream terrace along both sides of the Santa

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Margarita River and evidence of hydrology indicators, jurisdictional adjacent wetlands were determined present throughout the same landform (based on distinct breaks in topography) that were dominated by hydrophytic vegetation (willow woodland) further downstream.

The second soil pit was excavated approximately 300 feet west of the Sandia Creek Road bridge along an adjacent stream terrace similar to the Data Station 1. Soil within the test pit consisted of sand (riverwash) from 0–16 inches below ground surface with a color of 10YR 4/4 in the Munsell (1994) Soil Charts (Data Sheet 2). This soil meets the definition of hydric soils and therefore the terrace location met the USACE definition of a jurisdictional wetland. Due to uniform nature of stream terrace along both sides of the Santa Margarita River and evidence of hydrology indicators, jurisdictional adjacent wetlands were determined present throughout the same landform (based on distinct breaks in topography) that were dominated by hydrophytic vegetation (willow woodland) further downstream.

A total of 6.02 acres of USACE jurisdictional non-wetland waters of the United States and 11.75 acres of jurisdictional adjacent wetlands were mapped along Santa Margarita River. CDFW jurisdictional streambed and associated riparian habitat along Santa Margarita River total 28.43 acres, all of which would be considered state wetlands.

One tributary and two subtributaries, referred to in this report as Tributaries SMR1, SMR1.1, and SMR1.2 originate from the surrounding foothills to the north and merge with the Santa Margarita River approximately 450 linear feet from the Sandia Creek Road bridge. These tributaries are described below.

Tributary SMR1 and Subtributaries

Tributary SMR1 enters the study area from the north and merges with Santa Margarita River approximately 300 feet northwest of Sandia Creek Road bridge. The tributary is an ephemeral drainage that originates off site to the north and passes underneath Sandia Creek Road through a concrete box culvert before merging with Santa Margarita River. The tributary is characterized by a trapezoidal-shaped, earthen streambed containing sand and small gravel that is generally unvegetated. Dominant vegetation within the uplands adjacent to the tributary includes California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), chamise (*Adenostoma fasciculatum*), deerweed (*Acmispon glaber*), red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), and wild oat (*Avena fatua*). The OHWM averages approximately 3 feet in width, and the CDFW jurisdiction averages 6 feet in width. A representative photograph of the tributary is provided in Figure 7. Subtributaries

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SMR1.1 and SMR 1.2 are characterized by similar shape, streambottom, vegetation, and jurisdictional widths as Tributary SMR1.

A total of 0.08 acre of USACE jurisdictional non-wetland waters of the United States were mapped along SMR1, SMR1.1, and SMR1.2. The CDFW jurisdiction (non-wetland streambed) along SMR1, SMR1.1, and SMR1.2 totals 0.17 acre.

CONCLUSION

The purpose of this report is to identify and delineate all jurisdictional wetland and non-wetland waters of the United States, and jurisdictional streambeds as regulated by the USACE, RWQCB, and CDFW within the study area. This report represents existing conditions only, and does not address any activities proposed within the study area. Information contained within this report will be utilized to determine the location and extent of possible jurisdictional impacts associated with any future development proposed within the study area.

The study area supports one perennial drainage (Santa Margarita River), one ephemeral tributary (SMRT1), and two subtributaries (SMRT1.1 and SMRT1.2). These aquatic resources originate outside the study area in undeveloped areas of the Gavilan Mountains and near Temecula to the north and east. Construction of the Sandia Creek Road bridge have altered the hydrologic and biological setting of the Santa Margarita River. Other disturbances within the study area include routine, ongoing sediment and vegetation clearing around the bridge to maintain existing roads and facilities.

In total, the study area contains 5,941 linear feet of jurisdictional drainages that include 6.10 acres of USACE/RWQCB jurisdictional waters of the United States and 11.75 acres of USACE/RWQCB jurisdictional adjacent wetland. The study area also supports 28.43 acres of CDFW jurisdictional wetland streambed and 0.17 acre of CDFW jurisdictional non-wetland streambed (unvegetated). The USACE jurisdiction overlaps and is a subset of the CDFW acreage. However, final determinations of jurisdictional extents cannot be made until the resource agencies have verified the findings of this investigation.

Any proposal that involves impacting jurisdictional drainages within the study area through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, maintenance, or any other modification would require permits from the USACE, the RWQCB, and the CDFW before any earth-moving activities could commence. Both permanent and temporary impacts are regulated and would trigger the need for these permits. Processing of the RWQCB's CWA Section 401 and CDFW's Fish and Game Code Section 1600

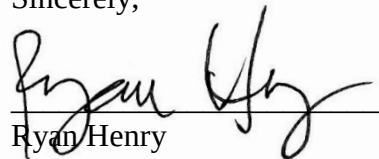
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permits can occur concurrently with the USACE's CWA Section 404 permit process and can utilize the same information and analysis. The USACE will not issue its authorization until the RWQCB completes the CWA Section 401 permit.

If you have any questions regarding the contents of this report, please call me at 949.450.2525.

Sincerely,



Ryan Henry
Senior Biologist/Project Manager

Att.: *Figures 1–7*
Appendix A – Wetland Determination Data Forms

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APPENDIX A
Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Santa Margarita River Bridge Replacement City/County: Fallbrook/San Diego Sampling Date: 05/04/2018
 Applicant/Owner: California Trout State: CA Sampling Point: #1 (SMR-T1)
 Investigator(s): R. Henry, A. Cassady Section, Township, Range: 7, T9S, R3W
 Landform (hillslope, terrace, etc.): adjacent terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): C - Mediterranean California Lat: 33.412685 Long: -117.239430 Datum: NAD83
 Soil Map Unit Name: Riverwash (Rm) NWI classification: PFOC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes ☒ No ☐
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		
Remarks: Data station established on stream terrace adjacent to OHWM and flowing surface water; terrace occurs approximately 5 feet higher in elevation than OHWM and mainstem; wrack from extreme episodic flood flows observed within vicinity.				

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. <i>Platanus racemosa</i>	70	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)			
2.				Total Number of Dominant Species Across All Strata: <u>3</u> (B)			
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)			
4.							
Total Cover: <u>70 %</u>							
Sapling/Shrub Stratum				Prevalence Index worksheet:			
1. <i>Salix exigua</i>	60	Yes	FACW	Total % Cover of: Multiply by:			
2. <i>Salix lasiolepis</i>	20	Yes	FACW	OBL species	<u>80</u>	x 1 =	<u>0</u>
3. <i>Baccharis salicifolia</i>	10	No	FAC	FACW species	<u>80</u>	x 2 =	<u>160</u>
4.				FAC species	<u>80</u>	x 3 =	<u>240</u>
5.				FACU species		x 4 =	<u>0</u>
Total Cover: <u>90 %</u>				UPL species		x 5 =	<u>0</u>
				Column Totals:	<u>160</u>	(A)	<u>400</u> (B)
				Prevalence Index = B/A = <u>2.50</u>			
Herb Stratum				Hydrophytic Vegetation Indicators:			
1.				☒ Dominance Test is >50%			
2.				☒ Prevalence Index is ≤3.0 ¹			
3.				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
4.				☐ Problematic Hydrophytic Vegetation ¹ (Explain)			
5.							
6.							
7.							
8.							
Total Cover: <u> </u> %							
Woody Vine Stratum				¹ Indicators of hydric soil and wetland hydrology must be present.			
1.				Hydrophytic Vegetation Present? Yes ☒ No ☐			
2.							
Total Cover: <u> </u> %							
% Bare Ground in Herb Stratum <u>80 %</u>		% Cover of Biotic Crust <u> </u> %					

Remarks:

SOIL

Sampling Point: #1 (SMR-

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 4/4	100					Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| ☐ Histosol (A1) | ☒ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) |
| ☐ Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils:⁴

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Riverwash

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☒ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Plowed Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Other (Explain in Remarks) |
| ☐ Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☒ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Thin Muck Surface (C7)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station established on distinct upland terrace outside OHWM and transition to adjacent willow woodland community.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Santa Margarita River Bridge Replacement City/County: Fallbrook/San Diego Sampling Date: 05/04/2018
 Applicant/Owner: California Trout State: CA Sampling Point: #2 (SMR-T2)
 Investigator(s): R. Henry, A. Cassady Section, Township, Range: 7, T9S, R3W
 Landform (hillslope, terrace, etc.): adjacent terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): C - Mediterranean California Lat: 33.414198 Long: -117.242388 Datum: NAD83
 Soil Map Unit Name: Riverwash (Rm) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			
Remarks: Data station established on stream terrace adjacent to OHWM and flowing surface water (approximately 20 feet south); terrace occurs approximately 10 feet higher in elevation than OHWM and mainstem; wrack from extreme episodic flood flows observed within vicinity.					

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <i>Salix laevigata</i>	60	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	3 (A)
2. <i>Quercus agrifolia</i>	10	No	NI	Total Number of Dominant Species Across All Strata:	5 (B)
3. <i>Salix lasiolepis</i>	20	Yes	FACW	Percent of Dominant Species That Are OBL, FACW, or FAC:	60.0 % (A/B)
4. _____					
Total Cover:			90 %		
Sapling/Shrub Stratum				Prevalence Index worksheet:	
1. <i>Baccharis salicifolia</i>	30	Yes	FAC	Total % Cover of:	Multiply by:
2. _____				OBL species	x 1 = 0
3. _____				FACW species	80 x 2 = 160
4. _____				FAC species	30 x 3 = 90
5. _____				FACU species	10 x 4 = 40
Total Cover:			30 %	UPL species	30 x 5 = 150
Herb Stratum				Column Totals:	150 (A) 440 (B)
1. <i>Melilotus indicus</i>	10	Yes	FACU	Prevalence Index = B/A = 2.93	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
Total Cover:			10 %		
Woody Vine Stratum				Hydrophytic Vegetation Indicators:	
1. <i>Marah macrocarpa</i>	20	Yes	NI	☒ Dominance Test is >50%	
2. _____				☒ Prevalence Index is ≤3.0 ¹	
Total Cover:			20 %	☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
% Bare Ground in Herb Stratum 80 %			% Cover of Biotic Crust %	☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present.					
Hydrophytic Vegetation Present? Yes ☒ No ☐					

Remarks:

SOIL

Sampling Point: #2 (SMR-

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 4/4	100					Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| ☐ Histosol (A1) | ☒ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) |
| ☐ Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils:⁴

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Riverwash

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☒ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Plowed Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Other (Explain in Remarks) |
| ☐ Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☒ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Thin Muck Surface (C7)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station established on distinct upland terrace outside OHWM and transition to adjacent willow woodland community.

APPENDIX G

Arroyo Toad Survey Results Letter Report

September 2021

12614

Subject: Results of Arroyo Toad Surveys for the Santa Margarita River Fish Passage Project and Bridge Replacement Project

This letter report summarizes survey methods and discusses the negative results of arroyo toad surveys conducted by Dudek in 2020 for the Santa Margarita River Fish Passage Project and Bridge Replacement Project.

1 Methods

1.1 Survey Methods

Surveys for arroyo toad, a federally endangered species and CDFW species of special concern (SSC), were conducted within one kilometer upstream and downstream of the project impact area where suitable, modeled habitat for the species was present. Survey methods were conducted pursuant to the survey guidelines outlined in the USFWS Survey Protocol for the Arroyo Toad (USFWS 1999). Dudek biologists conducted six surveys during the breeding season, which generally occurs between March 15 and July 1, with a minimum of one survey conducted per month during April, May, and June (USFWS 1999). Daytime surveys were conducted by walking slowly along stream margins and in adjacent riparian habitat visually searching for eggs, larvae, and juveniles as directed by the 1999 USFWS methods. Nighttime surveys were conducted by walking slowly along stream banks, with periodic stops at appropriate sites to wait for arroyo toads to begin calling (USFWS 1999). Surveys were conducted during appropriate weather conditions. See Table 1 below.

1.2 Schedule of Surveys and Survey Conditions

Table 1

Date	Hours	Personnel	Conditions
04/23/2020	1530 - 2217	JP, KS	65°F-88°F; 0% cc; wind 0-4 mph; water temp 72°F-74°F
05/14/2020	1630 - 2300	KS, SC	59°F-80°F; clear; water temp 74°F-75°F
05/21/2020	1630-2301	KS, SC	63°F-82°F; 0%cc; wind 0-5 mph; water temp 76°F-77°F
05/28/2020	1630-2300	BO, SC	64°F-80°F; 0-70% cc; wind 1-3 mph; water temp 78°F
06/19/2020	1730-0000	SC, JS	63°F-70°F; 30-100% cc; wind 0-3 mph; water temp 74°F-79°F
06/26/2020	1645-2315	BO, TO, CO	65°F-77°F; 20-50% cc; wind 0-5 mph; water temp 76°F-78°F

Personnel: BO = Brock Ortega; CO = Connor Ortega; KS = Kevin Shaw; JP = Jeff Priest; JS = Jeremy Sison; SC = Shana Carey; TO = Tyge Ortega.

Notes: cc = cloud cover; NR = not recorded; mph = miles per hour.

2 Results and Discussion

Surveys for arroyo toad were conducted within one kilometer upstream and downstream of the Santa Margarita River Fish Passage Project and Bridge Replacement Project impact area where suitable, modeled habitat for the species was present. **No arroyo toads were detected during the focused surveys** conducted by Dudek in 2020. There are approximately 32.69 acres of modeled habitat for this species within the study area, which includes breeding habitat (i.e., aquatic habitat) and suitable upland foraging and aestivation habitat.

A total of 34.22 acres of the project study area are within USFWS-designated Critical Habitat for arroyo toad, and there is moderate potential for arroyo toad to occur within the study area. There are documented occurrences downstream approximately 3 kilometers from the study area in 2008 and 2014 (CDFW 2020) as well as one occurrence approximately 1 kilometer upstream of the existing bridge in 2015 (USFWS 2020); however, arroyo toads were not detected during the six protocol surveys conducted by Dudek in 2020. This moderate potential to occur considers the mobility of the species and the potential for the species to colonize the study area or move up or down the river system in certain years if, for example, rainfall changes existing habitat conditions within the study area to be more suitable for arroyo toad. Some potential reasons for a lack of arroyo toads within the study area include presence of detrimental and non-native species such as bullfrogs, presence of beavers potentially causing ponded areas of deep water that support bullfrogs, and frequent use of the creek by humans in suitable arroyo toad habitat.

3 References

CDFW. 2020. California Natural Diversity Database (CNDDDB). Accessed September 2020. <https://wildlife.ca.gov/Data/CNDDDB>.

USFWS. 1999. *Survey Protocol for the Arroyo Toad*. May 19, 1999. <https://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/ArroyoToad.1999.protocol.pdf>.

USFWS. 2020. "Critical Habitat and Occurrence Data" [map]. Accessed July 2020. <http://www.fws.gov/data>.