



## United States Department of the Interior

### U.S. FISH AND WILDLIFE SERVICE

Ecological Services  
Ventura Fish and Wildlife Office  
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IN REPLY REFER TO:  
08EVEN00-2019-F-0089

June 13, 2019

Morgan Robertson  
Caltrans District 5  
50 Higuera Street  
San Luis Obispo, California 93401-5415

**Subject:** Biological Opinion for the San Jose Creek Bridge Replacement Project, Santa Barbara County, California (Project Number 05-1200-0134 / EA 05-1C360)

Dear Ms. Robertson:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed San Jose Creek Bridge replacement in Santa Barbara County and its effects on the endangered tidewater goby (*Eucyclogobius newberryi*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). We received your October 30, 2018 request for formal consultation on November 1, 2018. In addition, on December 4, 2018, Mindy Trask of your staff revised your determination regarding designated critical habitat for the tidewater goby from likely to adversely affect to may affect, not likely to adversely affect (M. Trask, pers. comm. 2018).

We have based this biological opinion on information that accompanied your October 30, 2018 request for consultation, including the biological assessment for the San Jose Bridge Creek Replacement Project (Caltrans 2018), and an additional memorandum dated February 4, 2019 (Caltrans 2019). We can make a record of this consultation available at the Ventura Fish and Wildlife Office.

#### **Informal Consultation for Designated Critical Habitat for the Tidewater Goby**

The approximately 14-acre project area, including approximately 1.9 acres of aquatic habitat that would be directly impacted for this project (as described in Section 3.1 of the biological assessment (Caltrans 2018)), overlaps with designated critical habitat for the tidewater goby in San Jose Creek and San Pedro Creek (SB-9 Goleta Slough; 78 FR 8745). The physical and biological features (PBFs) essential to the conservation of the tidewater goby are as follows:

PBF 1: Persistent, shallow (in the range of approximately 0.3 to 6.6 feet (0.1 to 2 meters)), still-to-slow-moving water in lagoons, estuaries, and coastal streams with salinity up to 12 parts per

thousand, which provide adequate space for normal behavior and individual and population growth that contain one or more of the following:

- PBF 1a: Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;
- PBF 1b: Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus*, *Ruppia maritima*, *Typha latifolia*, and *Scirpus* spp., that provides protection from predators and high flow events; or
- PBF 1c: Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

All of the physical and biological features of designated critical habitat for tidewater goby are found within the project area, including patches of *Ruppia maritima* (Caltrans 2018). This project would result in temporary effects to this critical habitat unit (SB-9). Dewatering would directly affect approximately 0.711 acres of stream habitat by temporarily removing PBF 1 and making this section unavailable to tidewater gobies, and any submerged vegetation would die. However, these effects would be temporary as this project would remove habitat for an estimated six to eight months during the spring and summer for two years. The SB-9 Goleta Slough critical habitat unit is 190 acres; the project would temporarily affect approximately 0.4 percent of this critical habitat unit and therefore we consider these impacts insignificant.

The proposed avoidance and minimization measures, listed out in section 4.3.1.3. in the biological assessment (Caltrans 2018), would minimize any long-lasting effects to critical habitat, and a minor amount of permanent impacts would result from the installation of the middle pier and end abutments (less than 0.001 acre of perennial stream and 0.020 acre of riparian habitat). Overall, these 0.021 acres of permanent impacts would remove 0.0001 percent of the total critical habitat unit. We consider these effects insignificant. Based on these factors, we concur with your determination that the proposed San Jose Creek Bridge replacement project may affect, but is not likely to adversely affect, designated critical habitat for the tidewater goby. If circumstances arise indicating that the proposed project may result in adverse effects to critical habitat, activities should be suspended and the Service should be contacted immediately to determine whether additional consultation is required.

### **Consultation History**

Coordination for this project began with the Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) in 2016. After discussions with the Service, Caltrans determined that the federally endangered California red-legged frog (*Rana draytonii*) was not likely present in the project area and formal consultation on this species was not needed. A detailed consultation history of this consultation is included in section 1.3 and 2.3 of the biological assessment (Caltrans 2018).

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

Caltrans (the applicant) proposes to replace the existing San Jose Creek Bridge along State Route (SR)-217 from postmile 0.7 to 1.6 near the city of Goleta, approximately 9 miles west of the City of Santa Barbara, California. Caltrans Structural Maintenance recommended replacement of this bridge because it is structurally deficient due to deteriorating concrete elements. The proposed project would replace the existing bridge while maintaining the four-lane freeway, but would reconstruct the existing roadway approaches, replace and upgrade the bicycle/pedestrian path to a standard 10-foot width, replace existing guardrails and end treatments, relocate existing conflicting utilities, and include minor drainage work such as new dikes and overside drains. Caltrans would remove the 6 piers (66 columns) that currently support the existing bridge and replace them with one middle pier supported by 8 cast-in-drilled-hole piles.

Caltrans proposes to construct the new bridge in two stages. Stage 1 would include demolishing and replacing the south side of the bridge, and stage 2 would include demolishing and constructing the north side of the bridge. Caltrans would use a temporary work platform or trestle for bridge construction. If a trestle is required, workers would install some piles in the water channel and the adjacent shore. Dewatering may not be feasible for this; these 12-inch diameter steel pipes would be installed by oscillating or vibrating, potentially using an impact driver for final proofing and delivering up to 200 strikes per day. Prior to removing existing columns and constructing the cast-in-drilled-hole piles with the creek, Caltrans would install a temporary stream diversion to dewater the area. A crane for lifting and installing casings and a vibratory “drilling” rig would most likely be positioned on the bank adjacent to the middle pier. During each stage of construction, Caltrans would install four cast-in-drilled-hole concrete piles beneath the middle pier using a vibratory or rotating/oscillating method. Caltrans would install temporary steel casings prior to forming the concrete piles to ensure a dry environment and to prevent wet concrete from leaking into the stream channel.

Except for the temporary work trestle, stream diversion and/or dewatering would be required for all work within the active water channel (including removing old columns and installing new ones). Caltrans would only create diversions or dewatering between June 1 through October 31. Workers would construct a cofferdam out of metal sheet piling to create working room starting 50 feet upstream and 50 feet downstream of the nearest column. A Service-approved biologist will relocate stranded fish and other aquatic species. Dewatering pumps will have protective screens at intake ends to prevent fish and other aquatic species from entering pumps. Caltrans will place dewatering discharge points downstream of dewatered area at locations where discharge would not result in erosion or scour. At the end of the in-stream work season, Caltrans would remove all temporary stream diversion materials and reinstall them the following year as necessary. After bridge construction, Caltrans would grade all slopes and streambeds to pre-construction conditions as closely as feasible after bridge construction, and lastly would install road striping, metal beam guardrails, and conduct other ancillary activities.

**Avoidance and Minimization Measures**

1. Prior to construction, a Service-approved biologist will conduct an informal worker environmental training program, including a description of protected species and habitats, their legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating the Act and other relevant permit conditions.
2. Except for the installation of piles for the temporary work platform or trestle and installation of stream diversions, Caltrans will perform in-stream construction work only in a dry work environment.
3. Dewatering and clear water diversions will be performed according to Caltrans Construction Site Best Management Practices (Caltrans 2017), and upstream and downstream passage of adult and juvenile fish will be maintained at all times, according to current NMFS guidelines and criteria (NMFS 2001). A Service-approved biologist will capture and relocate aquatic species prior to installing and removing the clear water diversion.
4. Caltrans will limit impact pile driving associated with bridge construction (excluding the retaining wall for bicycle path) to steel pipes no more than 12-inches in diameter and no more than 200 strikes per day.
5. Underwater sound pressure will be monitored during all impact driving. Pile driving operations will cease for the day if the results of underwater sound pressure monitoring show that sound levels upstream and downstream of the pile driving area are higher than the peak threshold of 206 decibels or cumulative sound exposure level of 187 decibels measured 10 meters from the source. If peak or cumulative sound exposure level are exceeded, the qualified biologist has the authority to halt impact driving and Caltrans will contact NMFS and the Service to determine if additional measures are necessary.
6. Prior to construction, the contractor will prepare and sign a Water Pollution Control Plan or a Storm Water Pollution Prevention Plan that complies with Caltrans Stormwater Quality Handbook (Caltrans 2011). Caltrans will implement provisions of this plan after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.
7. During construction, workers will clean up all project-related hazardous materials spills within the project site immediately. Readily accessible spill prevention and cleanup materials will be kept on-site at all times during construction.
8. Caltrans will implement erosion control measures during construction. This includes installing silt fencing, fiber rolls, and barriers as needed between the project site and aquatic habitat.
9. During construction, workers will clean and refuel equipment and vehicles only within a designated staging area. This area will either be a minimum of 100 feet from aquatic areas, or surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site Best Management Practices (Caltrans 2017).
10. Caltrans will remove in-channel structures including temporary fills, cofferdams, and diversion cofferdams in a manner than minimizes disturbance to downstream flows and water quality immediately upon completing in-channel work.

11. Caltrans will remove all temporary excavations and fills within project limits in entirety and will return affected areas to pre-construction elevations.
12. A Service-approved biologist will capture and relocate any tidewater gobies present in the work area during construction and will:
  - a. Prepare a fish handling and relocation plan
  - b. Conduct, monitor, and supervise all fish capture, handling, exclusion, and relocation activities (ensure that sufficient personnel are available to safely and efficiently collect listed species and that personnel have been properly trained to identify and safely capture and handle listed species)
  - c. Ensure that all personnel working directly with listed species have hands free of sunscreen, lotion, or insect repellent
  - d. Ensure that tidewater gobies will be kept out of the water for the least amount of time possible
  - e. Ensure that the “bagged” portion of seines and nets will remain in the water until all tidewater gobies are removed, or gobies are transferred to a shallow container(s) of clean water taken from the survey site and placed in a location that will not result in exposure to extreme temperatures
  - f. Release individual tidewater gobies as soon as possible to a suitable nearby location within the same watershed, at the discretion of the Service-approved biologist
  - g. Continuously monitor in-water activities (e.g. placement of cofferdams, dewatering of isolated areas) for the purpose of removing and relocating any listed species that were not detected or could not be removed and relocated prior to construction.
13. Caltrans will offset impacts to riparian vegetation along channel banks by replacing plants at a 3:1 ratio with locally present and fast-growing willows. Caltrans will monitor all riparian plantings for five years to ensure that a successful revegetation has occurred.

## ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATION

### **Jeopardy Determination**

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the tidewater goby the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the tidewater goby in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the tidewater goby; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the

tidewater goby; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the tidewater goby.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the tidewater goby, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the tidewater goby in the wild by reducing the reproduction, numbers, and distribution of that species.

## STATUS OF THE SPECIES

### Legal Status

The Service listed the tidewater goby as endangered on March 7, 1994 (59 Federal Register (FR) 5494) and designated critical habitat for the tidewater goby on February 6, 2013 (78 FR 8745). We published a recovery plan for the tidewater goby on December 12, 2005 (Service 2005) and a 5-Year Review in September 2007 (Service 2007). The Service published a proposed rule to downlist the tidewater goby on March 13, 2014 (79 FR 14339). During the public comment period, the Service received substantial comments regarding the proposed change in species status, and the tidewater goby remains listed as endangered.

### Natural History

The tidewater goby is endemic to California and is one of the only species of fish to live exclusively in brackish water coastal lagoons, estuaries, and marshes in California (Swift et al. 1989, pg. 14, Moyle 2002, pg. 431). Tidewater goby habitat is characterized by fairly still, but not stagnant, brackish water. They can withstand a wide range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 42 parts per thousand (ppt), temperatures ranging from 8 to 25 degrees Celsius (46 to 77 degrees Fahrenheit) and water depths from 25 to 200 centimeters (10 to 79 inches) (Irwin and Soltz 1984, pgs. 20-21; Swift et al. 1989, pg. 3, 7; Smith 1998, pg. 2). Most tidewater goby collections occurred in water of approximately one-third ocean salinity; (i.e., 12 parts per thousand or less; Service 2005, pg. 12). Tidewater gobies are generally found over substrate that has a high percentage of sand and gravel (Worcester 1992, pg. 105) and are often clumped in areas that have sparse to medium dense cover by aquatic plants or algae (Worcester 1992, pg. 71). Tidewater gobies often migrate upstream and are commonly found up to 1 kilometer (0.6 mile) up from a lagoon or estuary (Service 2005, pgs. 12-13), and have been recorded as far as 5 to 8 kilometers (3 to 5 miles) upstream of tidal areas (Irwin and Soltz 1985, pg. 13).

Tidewater gobies feed on small invertebrates, including amphipods, ostracods, snails, mysids, and aquatic insect larvae, particularly chironomid larvae (Swift et al. 1989, pg. 6). Predators of tidewater gobies include staghorn sculpin (*Leptocottus armatus*), prickly sculpin (*Cottus asper*),

starry flounder (*Platichthys stellatus*), and largemouth bass (*Micropterus salmoides*); native birds and other predatory fish likely prey on gobies (Swift et al. 1997, pg. 23, Swift et al. 1989, pg. 7, 14).

The tidewater goby is primarily an annual species (Swift et al. 1989, pgs. 4, 14), although there is some variation in life history and some individuals have lived up to 3 years in captivity (Swenson 1999, pg. 105). If reproductive output during a single season fails, few (if any) tidewater gobies survive into the next year. Reproduction typically peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and amount of rainfall (Swift et al. 1989, pg. 8, Worcester 1992, pg. 109, Goldberg 1977, pg. 558). Males begin the breeding ritual by digging burrows at least 70 to 100 millimeters (3 to 4 inches) apart in clean, coarse sand of open areas. Unlike most other fish, females court the males (Swift et al. 1989, pg. 11). Once chosen by a male, females will then deposit eggs into the burrows, averaging 400 eggs per spawning effort (Swift et al. 1989, pg. 8, Swenson 1995, pg. 1). Males remain in the burrows to guard the eggs and fan the eggs to circulate water, frequently foregoing feeding (Moyle 2002, pg. 432).

Within 9 to 11 days after eggs are laid, larvae emerge and are approximately 4 to 6 mm in standard length (0.16 to 0.24 inch) (Swift et al. 1989, pg. 8, Service 2005, pg. 14). Larval traits (larval duration, size at settlement, and growth rate) are correlated with water temperature, which varies considerably in the seasonally closed estuaries that tidewater gobies inhabit (Spies and Steele 2016, pg. 250). Larval tidewater gobies are pelagic for an average of 21 to 27 days and settle once they grow to approximately 12 to 13 mm in standard length (Spies et al. 2014, pg. 172). When they reach this life stage, they become substrate-oriented, spending the majority of time on the bottom rather than in the water column. Both males and females can breed more than once in a season, with a lifetime reproductive potential of 3 to 12 spawning events (Swenson 1999, pg. 106). Vegetation is critical for over-wintering tidewater gobies because it provides refuge from high water flows and tidewater goby densities are greatest among emergent and submerged vegetation (Moyle 2002, pg. 432).

Because they typically live for approximately one year and inhabit a seasonally changing environment, population sizes of tidewater gobies vary greatly spatially and seasonally, with recorded numbers ranging from 0 to 198 individuals per square meter (Swenson 1995, pg. 32). After the spring spawning season, there is typically an annual die-off of adults (Swift et al. 1989, pg. 4, Swenson 1995, pg. 98).

### **Rangewide Status**

Historically, the tidewater goby occurred in at least 150 California coastal lagoons and estuaries, from Tillas Slough near the Oregon/California border south to Agua Hedionda Lagoon in northern San Diego County (Swift et al. 1989, pg. 13); the southern extent of its distribution has been reduced by several miles after the mouth of Agua Hedionda Lagoon was permanently modified to be open to the ocean and no longer supports tidewater gobies. The species is currently known to occur in 103 localities, although the number of sites fluctuates with climatic

conditions and the current status is unknown in 12 localities. Currently, the most stable populations are in lagoons and estuaries of intermediate size (2 to 50 hectares, or 5 to 124 acres) that are relatively unaffected by human activities (Service 2005, pg. 11).

Local populations of tidewater gobies are best characterized as metapopulations (Lafferty et al. 1999a, pg. 1448), or “a network of semi-isolated populations with some level of regular or intermittent migration and gene flow among them, in which individual populations may go extinct but can then be recolonized from other populations” (Groom et al. 2006, pg. 706). Therefore, the stability of a metapopulation depends on the connectivity of subpopulations.

Tidewater gobies enter the marine environment when sandbars are breached during storm events. Lafferty et al. demonstrated that tidewater gobies were able to disperse at least 9 kilometers (5.6 miles) (Lafferty et al. 1999b, pg. 621), and genetic analysis suggests that this species can disperse much further, with genetic assignment tests showing movement of individuals up to approximately 48 km (30 miles) (Jacobs et al. 2005, figure 10 pg. 52). The species' tolerance of high salinities for short periods of time enables it to withstand marine environment conditions of approximately 35 ppt salinity, thereby allowing the species to re-establish or colonize lagoons and estuaries following flood events (Swift et al. 1997, pg. 32). Genetic studies indicate that the tidewater goby population is highly geographically structured, indicating that there is low geneflow (Dawson et al. 2001, pg. 1176, Dawson et al. 2002, pg. 1071) and thus natural recolonization events are likely rare. Swift et al. (2016, pg. 1) estimates that the southernmost population of tidewater goby has been separated from other lineages for 2 to 4 million years, and it has been recognized as a distinct species (*Eucyclogobius kristinae*, the southern tidewater goby), but as of now the tidewater goby remains listed under the Endangered Species Act as one entity.

Native predators are not known to be important regulators of tidewater goby population size in the lagoons of southern California. Rather, population declines are attributed to environmental conditions. The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands, lagoons, and estuaries (Irwin and Soltz 1985, pg. 1). High flows naturally and periodically breach lagoon barriers and expose tidewater gobies to tidal conditions, but artificial breaching has been observed to cause tidewater goby stranding and mortality (C. Dellith, U.S. Fish and Wildlife Service, pers. comm. 2018). Artificial breaching, especially during periods of low inflow, not only flushes tidewater gobies out into the ocean but also drains water from the lagoon and thus reduces the size of available habitat for this species; this can also concentrate predators within this reduced lagoon footprint. Some extirpations appear to be related to pollution, upstream water diversions, and the introduction of non-native predatory fish species, most notably centrarchid sunfish (*Lepomis* spp.) and bass (*Micropterus* spp.) (Swift et al. 1989, pg. 14). These threats continue to affect some of the remaining populations of tidewater gobies. Climate change and the attendant sea level rise may further reduce suitable habitat for the tidewater goby as lagoons and estuaries are inundated with saltwater (Cayan et al. 2006, pg. 34, 38) and severe storms interacting with increased sea levels may breach lagoons more frequently.



In 2014, the Service issued a 12-month finding proposing to reclassify the tidewater goby as threatened under the Act. During the public comment period, we received substantive comments regarding the proposed change in the species' status and new scientific information has been published regarding the species. The tidewater goby remains listed as endangered and its overall population and range is currently stable, but still faces ongoing and likely increasing threats of urbanization, artificial breaching, stochastic environmental conditions, and introduced predators. The southernmost population of tidewater goby remains critically endangered because this species has become extirpated from 5 of the 13 historical localities, 4 of which cannot be restored.

## **Recovery**

The goal of the tidewater goby recovery plan (Service 2005) is to conserve and recover the tidewater goby throughout its range by managing threats and maintaining viable metapopulations within each recovery unit while retaining morphological and genetic adaptations to regional and local environmental conditions. The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands. The recovery plan identifies six recovery units: North Coast Unit, Greater Bay Unit, Central Coast Unit, Conception Unit, Los Angeles/Ventura Unit, and South Coast Unit.

The recovery plan specifies that the tidewater goby may be considered for downlisting when:

1. Specific threats to each metapopulation (e.g., coastal development, upstream diversion, channelization of rivers and streams, etc.) have been addressed through the development and implementation of individual management plans that cumulatively cover the full range of the species; and
2. A metapopulation viability analysis based on scientifically-credible monitoring over a 10-year period indicates that each recovery unit is viable. The target for downlisting is for individual sub-units within each recovery unit to have a 75 percent or better chance of persistence for a minimum of 100 years.

The tidewater goby may be considered for delisting when the downlisting criteria have been met and a metapopulation viability analysis projects that all recovery units are viable and have a 95 percent probability of persistence for 100 years.

## **ENVIRONMENTAL BASELINE**

### Action Area

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations 402.02). The action area for this biological opinion is the Biological Study Area as defined in Section 3.1, Figure 2 of the

biological assessment (Caltrans 2018). The action area occurs between the cities of Santa Barbara and Goleta in Santa Barbara County and is just east of the University of California, Santa Barbara campus. The action area includes the approximately 15-acre area around the proposed bridge replacement site, associated infrastructure, and staging/access areas for the SR-217 bridge which is located just downstream of the confluence of San Jose and San Pedro Creeks, just upstream of the confluence of San Jose and Atascadero Creeks, and approximately 2,500 feet upstream of the mouth of Goleta Slough and the Pacific Ocean.

#### Habitat Characteristics of the Action Area

The action area encompasses the lower reach of San Jose Creek, which is one of the many streams that feed into Goleta Slough. When the mouth of Goleta Slough is open, this creek is tidally influenced. Stream flow and wave action cause the lagoon mouth to periodically open and close. Therefore, the action area experiences intermittent periods of tidal action separated by periods where the lagoon is closed. During the summer months, the streamflow diminishes and sediments accumulate in the inlet mouth, forming a berm that limits the amount of tidal influence.

The vegetative communities surrounding the creeks and SR-217 include pickleweed (*Salicornia pacifica*), non-native grassland (primarily ripgut brome (*Bromus diandrus*) and red brome (*Bromus madritensis*)), iceplant (*Carpobrotus edulis*), qualibush scrub (*Atriplex lentiformis*), coyote brush scrub (primarily *Baccharis pilularis*), arroyo willow thickets (primarily *Salix lasiolepis*) and myoporum groves (*Myoporum laetum*). A detailed map of vegetative communities is included in the biological assessment as Figure 6 (Caltrans 2018).

#### Existing Conditions in the Action Area

The action area includes the existing San Jose Creek Bridge on SR-217, which is supported by 6 piers made up of 11 columns per pier. Santa Barbara County Flood Control District routinely dredges the three streams to up to 1 mile from Goleta Slough, and breaches the berm at the mouth. On average, the Flood Control District removes 3,630 cubic yards of sediment each year as part of flood control maintenance and deposits dredge spoils over Goleta Beach.

#### Previous Consultations in the Action Area

The Service (1997) issued a programmatic biological opinion to the Army Corps of Engineers for authorizing permits under section 404 of the Clean Water Act, section 10 of the Rivers and Harbors Act, and section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 for listed coastal species) in Ventura, Santa Barbara, San Luis Obispo, Monterey, and Santa Cruz Counties. We determined that the proposed actions were not likely to jeopardize the continued existence of the federally endangered California least tern (*Sterna antillarum browni*), [formerly listed] brown pelican (*Pelecanus occidentalis*), tidewater goby, and the federally threatened southern sea otter (*Enhydra lutris nereis*) and western snowy plover (*Charadrius alexandrinus*

*nivosus*), and the proposed [now final] critical habitat of the western snowy plover. To the best of our knowledge, no actions covered under this programmatic biological opinion have occurred within the action area for the San Jose Bridge Replacement Project.

#### Condition (Status) of the Species in the Action Area

Tidewater gobies are known to occur in Goleta Slough and its tributaries. In 2016, seven individuals were detected in Goleta Slough (M. Jones 2016). In 2011, tidewater gobies were detected approximately 2 miles upstream in Tecolotito Creek and its tributary, Carneros Creek (CNDDDB 2011). Tidewater gobies are mobile animals and can inhabit all of the lower stream reaches of San Pedro, San Jose, and Atascadero Creeks.

#### Recovery

Goleta Slough is part of the Conception Recovery Unit which includes three sub-units. The action area is part of the third sub-unit (CO3) which includes 28 tidewater goby habitat localities along a long stretch of Santa Barbara County coastline. Primary tasks recommended for recovery of this sub-unit are to 1) monitor, 2) substantiate sub-unit with genetic study (including Hollister Ranch), and 3) consider recolonization if there is a 25 percent reduction in number of inhabited locations.

### EFFECTS OF THE ACTION

#### **Tidewater Goby**

Diversion and dewatering would directly affect any tidewater gobies present in the area to be dewatered. These activities could strand tidewater gobies, including eggs in burrows, and result in the death of individuals through desiccation, suffocation, or predation. Personnel or heavy machinery working in the streambed could crush eggs in burrows and any adult or larval tidewater gobies left in the area. These effects would be minimized by implementing avoidance and minimization measures 1, 2, 3, and 12.

Pile driving may result in injury, harm, or harassment of tidewater gobies. Peak sound pressure level and sound exposure level affects hearing through auditory tissue damage, resulting in temporary or permanent loss of hearing. The most likely adverse effects from pile driving would be behavioral, in which fish up to 100 meters away could be disturbed. Harm or harassment may occur if pile driving causes fish to move away from feeding or sheltering areas to escape the noise. These effects would be minimized by implementing avoidance and minimization measures 4 and 5.

Before dewatering or performing any construction within the streambed, a Service-approved biologist will capture and relocate as many tidewater gobies as possible within the work area, which would minimize the chances of death or injury due to dewatering or trampling. However, capturing and relocating tidewater gobies could result in death or injury through mishandling,

physiological stress, trampling from seining, or relocation into an unsuitable environment. These effects would be minimized by implementing avoidance and minimization measure 12. Overall, capturing and relocating tidewater gobies would increase the survival rate and reduce the magnitude of harm that these individuals would be exposed to if they were left in the area to be dewatered.

Workers would remove water within the work site using hoses and pumps. Tidewater gobies could be injured or killed if they enter the pump intakes. Caltrans will ensure that these pumps, if used, would have protective screens at the intake ends to prevent fish and other aquatic species from entering the pumps.

Construction may also indirectly affect the tidewater goby. Project activities both in the stream channel and along the streambank could increase erosion and sedimentation within the creek, leading to increased turbidity. After project completion, sediment disturbed by construction activities will likely mobilize during the initial high flow event the following winter season. This increased turbidity could reduce the fitness of tidewater gobies in the creek by impairing their ability to detect prey and predators. Increased sedimentation could impair the physiological functioning of gills and could smother burrows and kill eggs. These effects would be minimized by implementing avoidance and minimization measures 5, 8, 10, and 11. Construction activities for this project would include the use of motorized equipment that would need refueling and maintenance adjacent to the stream channel. Equipment and materials have the potential to leak pollutants and drop debris into the environment. Hazardous materials and discharge such as vehicle fluids could change the pH or otherwise degrade the water quality and create a toxic environment for tidewater gobies, leading to injury or mortality. These effects would be minimized by implementing avoidance and minimization measures 7 and 9.

Dewatering also results in the loss of aquatic invertebrate species and aquatic vegetation. Though temporary, this would result in decreased prey and shelter availability for the tidewater goby, leading to a decrease in fitness and rendering them more vulnerable to predators.

Caltrans plans to mitigate effects to the riparian corridor by planting riparian vegetation at a 3:1 ratio along the stream banks. This will improve habitat for the tidewater goby by increasing shade cover and reducing erosion along the stream bank.

### **Effects on Recovery**

Though this project does not align with recovery goals for the Conception Recovery Unit, we do not expect the effects of this project to preclude recovery. We expect that this project may result in the mortality of some individuals, but would not extirpate the entire Goleta Slough population, significantly alter the habitat, or reduce the connectivity of the metapopulation as a whole.

## Summary of Effects

This project may result in injury or mortality of an unknown number of tidewater gobies. We expect that if tidewater gobies are actively breeding in the area to be dewatered, all eggs would die due to desiccation, predation, or crushing. Tidewater gobies may experience trauma and disturbance from pile driving. We expect that some adults or larvae may be stranded during dewatering, and that capture and relocation of individuals could result in injury or death. Though there are measures to reduce erosion and sedimentation within the creek, we expect that some increased sedimentation and turbidity within the creek could impair their physiological functioning or ability to detect prey or predators. Immediately following re-watering of the creek bed, there will likely be a temporary degradation of water quality and loss of aquatic vegetation and prey, though these effects would be short-term. We do not expect that a large percentage of tidewater gobies would be injured or killed by these actions or that this project would have a substantial effect on the Goleta Slough population because we expect that the majority of tidewater gobies will survive capture and relocation. This project would not significantly alter the habitat in a detrimental way, and Caltrans' planting vegetation along the stream bank would improve habitat for the tidewater goby. We do not expect the proposed action to inhibit the recovery of this species.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any actions that would incur cumulative effects within the action area.

## CONCLUSION

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the tidewater goby's status as the basis to assess the overall effect of the proposed action on the species.

## Reproduction

This project may kill eggs and destroy burrows, if present, in the action area, and could injure or kill adult tidewater gobies ready to breed. However, the area to be dewatered is small (0.711 acre) compared to the habitat available in Goleta Slough and its multiple tributaries, so this is unlikely to affect all reproductive effort in this locality. Tidewater gobies reproduce in large numbers and both males and females can breed multiple times per season. Therefore, we do not expect these effects to be of a magnitude that would appreciably reduce reproduction or survival of the tidewater goby.

### Numbers

We expect that the proposed action may result in the injury or mortality of an unknown number of tidewater gobies. Individuals could be injured or killed during construction, dewatering, or during capture and relocation. Tidewater gobies often exist and reproduce in large numbers and we do not expect the mortality of some individuals to have an effect at the population or metapopulation level.

### Distribution

We do not expect this project to have significant effects to the distribution of the tidewater goby because this project would not permanently alter a significant amount of habitat, and tidewater gobies are mobile creatures that can recolonize the action area after construction is complete and the area is re-watered. Though there likely will be some mortality, we do not expect an appreciable reduction in numbers to the point where this locality is extirpated. Therefore, we anticipate negligible effects to the distribution of the tidewater goby.

### Recovery

This project does not align with recovery goals and may result in the mortality of some tidewater gobies. However, we do not expect that this project would significantly impact the population of tidewater gobies or their habitat, as much of the impact to the stream is temporary. Caltrans proposes to plant riparian vegetation along the stream channel which would improve habitat for the tidewater goby. Therefore, we do not expect the effects of the proposed action to appreciably reduce the likelihood of recovery of the tidewater goby.

After reviewing the current status of the tidewater goby, the environmental baseline for the action area, the effects of the proposed bridge replacement and the cumulative effects, it is the Service's biological opinion that the San Jose Creek Bridge replacement project, as proposed, is not likely to jeopardize the continued existence of the tidewater goby because:

1. The effects on reproduction are low;
2. The effects on numbers are low;
3. The effects on distribution are negligible; and
4. The effects on recovery are low.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is

defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

In June 2015, the Service finalized new regulations implementing the incidental take provisions of section 7(a)(2) of the Act. The new regulations also clarify the standard regarding when the Service formulates an Incidental Take Statement [50 CFR 402.14(g)(7)], from "...if such take may occur" to "...if such take is reasonably certain to occur." This is not a new standard, but merely a clarification and codification of the applicable standard that the Service has been using and is consistent with case law. The standard does not require a guarantee that take will result; only that the Service establishes a rational basis for a finding of take. The Service continues to rely on the best available scientific and commercial data, as well as professional judgment, in reaching these determinations and resolving uncertainties or information gaps.

We anticipate that some tidewater gobies could be taken as a result of the proposed action. We expect the incidental take to be in the form of harm, capture, or kill.

We cannot quantify the precise number of tidewater gobies that may be taken as a result of the actions that Caltrans has proposed because tidewater gobies move over time and it is hard to quantify how many are in a given area at a particular time; for example, animals may have entered or departed the action area since the last survey and their population fluctuates from year to year because they are primarily an annual species. Other individuals may not be detected due to their cryptic nature and small size. The protective measures proposed by Caltrans are likely to prevent mortality or injury of most individuals. In addition, finding a dead or injured tidewater goby is unlikely.

Consequently, we are unable to reasonably anticipate the actual number of tidewater gobies that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to tidewater gobies would likely be low given the nature of the proposed activities, and we, therefore, anticipate that take of tidewater gobies would also be low. We also recognize that for every tidewater goby found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Similarly, for estimating the number of tidewater goby that would be taken by capture, we cannot predict how many may be encountered for reasons stated earlier. While the benefits of relocation (i.e., minimizing mortality) outweigh the risk of capture, we must provide a limit for

take by capture at which consultation would be reinitiated because high rates of capture may indicate that some important information about the species' in the action area was not apparent (e.g., it is much more abundant than thought). Conversely, because capture and relocation can be highly variable, depending upon the species and the timing of the activity, we do not anticipate a number so low that reinitiation would be triggered before the effects of the activity were greater than what we determined in the Effects Analysis.

Therefore, all tidewater gobies in the area to be dewatered may be taken by capture and relocation. If 10 percent of adult tidewater gobies are found dead or injured from capture and relocation, Caltrans must contact our office immediately to reinitiate formal consultation.

We anticipate tidewater gobies in the action area not captured and relocated may be taken by injury or mortality, particularly from trauma from pile driving or stranding following dewatering of the action area. If 25 tidewater gobies are found dead or injured as a result of project activities other than capture and relocation, Caltrans must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

#### REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary, and must be undertaken by Caltrans, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans fails to assume and implement the terms and conditions, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of the incidental take of tidewater goby:

1. Only qualified biologist(s), approved by the Service under the auspices of this biological opinion, may conduct the capture and relocation measures for the tidewater goby.
2. Caltrans must minimize impacts of fish capture and relocation.

#### TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.



The following term and condition implement the reasonable and prudent measure 1 above:

1. Caltrans must request our approval of any biologist(s) they wish to employ for activities involving the tidewater goby. The request must be in writing to the Ventura Fish and Wildlife Service and received at least 30 days prior to the initiation of activities.

The following terms and conditions implement the reasonable and prudent measure 2 above:

2. Caltrans and/or a contractor must develop a detailed fish capture and relocation plan that will minimize impacts to fish as much as possible. Caltrans must submit this plan for approval to the Service at least 30 days prior to initiation of diversion and dewatering.

## REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), Caltrans must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement. For the duration of the project, Caltrans must provide the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003) with an annual written summary of work performed. The report must describe all activities that were conducted under this biological opinion, including activities, best management practices, and avoidance and minimization measures that were described under the proposed action and required terms and conditions, and discuss any problems that were encountered in implementing these measures, as well as any pertinent information.

At a minimum, the report must include:

- Name(s) of qualified biologist(s)
- Observations of listed species
- All survey/capture and relocation methods used
- Number of tidewater gobies captured and relocated, location of where they were released, and date and time of capture and relocation
- Observations of tidewater goby burrows
- Number of tidewater gobies that were found injured or killed, and date and time of injury or mortality
- Date, time, and location of surveys and dewatering

## DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured tidewater goby, initial notification within 3 working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

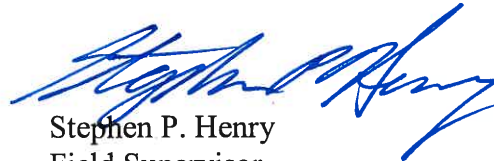
Caltrans must take care in handling injured animals before releasing them. Any mortally injured tidewater gobies should be humanely euthanized and preserved. Caltrans must take care in handling dead specimens to preserve biological material in the best possible state. The Service should be contacted to determine the appropriate disposition location for any dead specimens that are identified. Dead tidewater gobies should be preserved in a solution of 95 percent ethanol for future genetic analysis.

#### REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Kendra Chan of my staff at (805) 677-3304, or by e-mail at [kendra\\_chan@fws.gov](mailto:kendra_chan@fws.gov).

Sincerely,



Stephen P. Henry  
Field Supervisor

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