United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
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Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2014-F-0220

August 4, 2014

Tom Edell
California Department of Transportation, District 5
50 Higuera Street
San Luis Obispo, California 93401-5415

Subject: Biological Opinion for the Goleta Beach Park Bridge Replacement Project, Santa Barbara County, California (8-8-14-F-35)

Dear Mr. Edell:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Goleta Beach Park Bridge Replacement and its effects on the federally endangered tidewater goby (*Eucyclogobius newberryi*) and its critical habitat, in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your April 2, 2014**,** request for formal consultation was received on April 4, 2014.

You also determined that project activities may affect, but are not likely to adversely affect, critical habitat for the tidewater goby. During a phone conversation on June 18, 2014, between you and Chris Dellith of our office, Mr. Dellith discussed how the proposed project activities would affect the primary constituent elements of the critical habitat. Although the critical habitat would be temporarily affected and you anticipated no net loss, critical habitat may be adversely affected. Therefore, you rescinded your determination and requested that we initiate formal consultation on the proposed Goleta Beach Park Bridge Replacement and its effects on critical habitat for the tidewater goby.

The California Department of Transportation (Caltrans) has assumed the Federal Highway Administration's (FHWA) responsibilities under the Act. This action is in accordance with Section 1313, Surface Transportation Project Delivery Program, of the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012, as described in the National Environmental Policy Act assignment Memorandum of Understanding between FHWA and Caltrans (effective October 1, 2012) and codified in 23 U.S.C. 327.

We understand you have initiated formal consultation with the National Marine Fisheries Service on the effects of the subject project on the federally endangered steelhead trout (*Oncorhynchus mykiss*), which occurs in Goleta Slough, and its critical habitat, which as designated includes the project area.

This biological opinion is based on information that accompanied your April 2, 2014**,** request for consultation, including the biological assessment (Caltrans 2014), records contained in the California Natural Diversity Database (CNDDB 2014), and information in our files. A complete record of this consultation can be made available at the Ventura Fish and Wildlife Office.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The County of Santa Barbara (County), with funding from FHWA and oversight by Caltrans, proposes to replace the existing bridge (Bridge 51C-0158) over the Goleta Slough between Sandspit Road and Goleta Beach Park. The existing bridge is structurally deficient and does not meet current design standards. The existing concrete piles that support the bridge are degraded due to reactive aggregate. Reactive aggregate is an irreversible deterioration of concrete. The proposed project consists of constructing a new bridge on a new alignment, immediately west of the existing bridge. The new bridge would be placed on cast-in-drill-hole (CIDH) concrete piles. CIDH installation would utilize crane and "wet" construction methods with slurry to keep the hole open until the concrete is poured. If the hole collapses while drilling, the contractor would install temporary or permanent casings. The casings would be installed by vibratory hammers; and if necessary with impact hammers. Permanent fills would be required within the slough banks behind the abutments in order to construct the new bridge approach. Once the new bridge is complete, the existing bridge would be removed. The project area includes approximately 4.8 acres of land within and adjacent to Goleta Slough and would encompass small segments of Sandspit Road and portions of Goleta Beach Park recreational area.

The contractor would need access into Tecolotito Slough Channel to install new CIDH piles and remove the existing bridge. Access would be achieved by temporarily diverting water through or around the work area and constructing a temporary access path into the slough channel. Water diversion would use a combination of cofferdams, pipes, sand bags, and temporary fill. Sheet piles would be vibrated into place while constructing the cofferdams.

The new CIDH piles would be located just inside the wetted channel (depending on tidal influence), necessitating the installation of a temporary access path. The temporary access path would be located adjacent to the proposed bridge, traverse the slough bank, and extend under the proposed and existing bridges. The contractor would place clean crushed rock into the slough to create the temporary path and construct the CIDH piles that are just inside the wetted channel. All temporary fill associated with the creek diversion and the access path would be removed after construction is complete.

A vacant parcel located in the State Route 217 cloverleaf interchange immediately north of the existing bridge contains wetland features. An existing culvert provides a hydrological connection between the vacant parcel and the slough. In addition to the bridge replacement, the proposed project would improve the hydrological connection of the parcel to the slough by replacing the existing culvert. The proposed modified culvert would have a level slope to allow

for tidal influence to inundate the parcel with higher flows.

Equipment expected to be used in the construction of the new bridge includes excavators, dozers, cranes, dump trucks, concrete trucks, concrete pumps, and potentially vibrating or oscillating hammers. Removal of the existing bridge would require excavators, hoe rams, cranes, and dump trucks. Construction of the new bridge and demolition of the existing bridge is expected to be completed within one construction season spanning from April 15 to October 15. Equipment staging for the bridge replacement would occur in the existing Goleta Beach Park parking area located approximately 250 feet to the east of the existing bridge. Minimal equipment staging for the culvert replacement would occur within the cloverleaf interchange to accommodate the jack and bore activities while replacing the culvert. Materials staging in this area would be limited to jack and bore materials such as carrier pipes, augers, culvert material, and other necessary items.

Caltrans and the County propose to implement the following minimization measures that are specific to tidewater gobies:

- Prior to construction, a Water Pollution Prevention Plan for the project will be prepared. Provisions of this plan will be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.

- Prior to construction, the contractor will prepare a Hazardous Materials Response Plan to allow for a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

- During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Spill prevention and cleanup materials will be on-site at all times during construction.

- During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers (e.g., hay bales) will be installed between the project site and adjacent wetlands and other waters. No synthetic plastic mesh products will be used in any erosion control materials. At a minimum, silt fencing will be checked and maintained on a daily basis throughout the construction period. The contractor will also apply adequate dust control techniques, such as site watering, during construction.

- During construction, the contractor will utilize silt curtains during installation of piles to reduce water turbidity.

- During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area and at least 65 feet from wetlands, other waters, or other aquatic areas. This staging area will conform to best management practices applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles

will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills.

- If drilling slurry is used during CIDH installation, the contractor will remove all slurry and drilled soil material that is saturated with slurry from the site. Drilling slurry would be contained in a baker tank and the separated water would be used as dust control on the upland portions of the site.

- Prior to construction, all construction personnel conducting in-stream work will participate in an environmental awareness training program conducted by a qualified biologist. The program must include a description of the tidewater goby and its ecology, legal status, and the need for species conservation.

- Prior to conducting any in-stream work, the County will hire a Service-approved biologist with experience in tidewater goby biology, aquatic habitats, biological monitoring (including diversion/dewatering), and capturing, handling, and relocating fish species. During in-stream work, the Service-approved biologist(s) will continuously monitor placement and removal of any required stream diversions. The Service-approved biologist will capture any stranded tidewater gobies or other native fish species and relocate them to suitable habitat within Goleta Slough, as appropriate. The Service-approved biologist will note the number of native fish, including tidewater gobies, observed in the affected area, the number of fish relocated, and the date and time of the collection and relocation.

- During in-stream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes will be completely screened with no larger than 0.2- inch wire mesh to prevent tidewater gobies and other sensitive aquatic species from entering the pump system. Pumps will release the additional water to a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities will be checked daily, at a minimum, by a Service-approved biologist to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.

- During construction, the Service-approved biologist will monitor erosion and sediment controls to identify and correct any conditions that could adversely affect sensitive aquatic species or habitats. The Service-approved biologist will be granted the authority to halt work activity as necessary and to recommend measures to avoid/minimize adverse effects to tidewater goby and tidewater goby habitat.

- If drilling slurry is used during pile installation, the contractor will remove all slurry and drilled soil material that is saturated with slurry from the site. Drilling slurry would be contained in a baker tank and the separated water would be used as dust control on the upland portions of the site.

- If pile driving is deemed necessary, the contractor will employ vibratory or push type hammers. If at any time the use of vibratory or push hammers is deemed ineffective or infeasible and the use of impact hammers is considered, pile driving activities will be halted. Impact hammers will not be used until the County, in consultation with Caltrans and the Service, conducts an analysis of the potential effects of elevated sound levels that would result from the use of impact hammers. The analysis must be reviewed and approved by Service prior to the use of impact hammers on the project.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

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 Code of Federal Regulations (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 cause an appreciable reduction in the likelihood of both the survival and recovery of the tidewater goby in the wild.

Adverse Modification 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 result in the destruction or adverse modification of designated critical habitat. This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied on the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the *Status of Critical Habitat*, which describes the range-wide condition of designated critical habitat for the tidewater goby in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the *Environmental Baseline*, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PCEs and how that will influence the recovery role of the affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future non-Federal activities, that are reasonably certain to occur in the action area, on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the critical habitat of the tidewater goby are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the tidewater goby.

STATUS OF THE SPECIES

The tidewater goby was listed as endangered on March 7, 1994 (59 Federal Register (FR) 5494). On June 24, 1999, the Service proposed to remove the populations occurring north of Orange County, California, from the endangered species list (64 FR 33816). In November 2002, the Service withdrew this proposed delisting rule and determined it appropriate to retain the tidewater goby's listing as endangered throughout its range (67 FR 67803). A recovery plan for the tidewater goby was completed on December 12, 2005 (Service 2005). A 5-Year Review for the tidewater goby was completed in September 2007 (Service 2007). A proposed rule to downlist the tidewater goby was published on March 13, 2014 (79 FR 14339).

Detailed information on the biology of the tidewater goby can be found in Wang (1982), Irwin and Soltz (1984), Swift et al. (1989), Worcester (1992), and Swenson (1995). Much of the information in this status section is based on these sources.

The tidewater goby is endemic to California and typically inhabits coastal lagoons, estuaries, and marshes, preferring relatively low salinities of approximately 12 parts per thousand (ppt). Tidewater goby habitat is characterized by brackish estuaries, lagoons, and lower stream reaches where the water is fairly still but not stagnant. Tidewater gobies tend to be found in the upstream portions of lagoons. They can withstand a range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 60 ppt, temperatures from 46 to 77 degrees Fahrenheit, and depths from approximately 10 inches to 6.5 feet. Tidewater gobies feed on small invertebrates, including mysids, amphipods, ostracods, snails, aquatic insect larvae, and

particularly chironomid larvae; however, tidewater gobies of less than 0.30 inch in length probably feed on unicellular phytoplankton or zooplankton, similar to many other early stage larval fishes.

The tidewater goby is primarily an annual species in central and southern California, although some variation in life history has been observed. 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. Males begin the breeding ritual by digging burrows (3 to 4 inches deep) in clean, coarse sand of open areas. Females then deposit eggs into the burrows, averaging 400 eggs per spawning effort and males remain in the burrows to guard the eggs. Male tidewater gobies frequently forego feeding, which may contribute to the mid-summer mortality observed in some populations. Within 9 to 10 days, larvae emerge and are approximately 0.20 to 0.27 inch in length. Tidewater gobies live in vegetated areas until they are 0.60 to 0.70 inch long. 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. Vegetation is critical for over-wintering tidewater gobies because it provides refuge from high water flows.

Historically, the tidewater goby occurred in at least 135 California coastal lagoons and estuaries, from Tillas Slough near the Oregon border south to Agua Hedionda Lagoon in northern San Diego County. The southern extent of its distribution has been reduced by approximately 8 miles. The species is currently known to occur in about 112 locations, although the number of sites fluctuates with climatic conditions. Some of these locations presumed to be occupied have not been surveyed in over 10 years. Currently, the most stable populations are in lagoons and estuaries of intermediate size (5 to 124 acres) that are relatively unaffected by human activities. Tidewater gobies that are found upstream of lagoons in summer and fall tend to be juveniles. The highest densities of tidewater gobies are typically present in the fall.

Tidewater gobies enter the marine environment when sandbars are breached during storm events. The species' tolerance of high salinities (up to 60 ppt) for short periods of time enables it to withstand marine environment conditions where salinities are approximately 35 ppt, thereby allowing the species to re-establish or colonize lagoons and estuaries following flood events. However, genetic studies indicate that individual populations rarely have contact with other populations so natural recolonization may be rare. In Santa Barbara County during the fall of 1994, tidewater gobies were reported as common in the Santa Ynez River 4 miles upstream from the lagoon (Swift et al. 1997); however, by January 1995, they were absent at the upstream sites.

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. During high flows, lagoon barriers are breached; exposing tidewater gobies to strong tidal conditions. As a result, tidewater goby populations plummet. Populations typically recover

quickly in summer, with recorded mean densities of 54 to 323 fish per square foot. Tidewater goby densities are greatest among emergent and submerged vegetation (Moyle 2002).

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. Some extirpations are believed 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.)]. These threats continue to affect some of the remaining populations of tidewater gobies.

Critical Habitat

We originally designated critical habitat for the tidewater goby on November 20, 2000 (65 FR 69693). In January 2008, we finalized a revised designation of critical habitat (73 FR 5920). On October 19, 2011, another revision to critical habitat was proposed (76 FR 64996), and on February 6, 2013, a final rule designating revised critical habitat for the tidewater goby was published (78 FR 8745).

Under the Act and its implementing regulations, we are required to identify the physical and biological feature essential to the conservation of the tidewater goby in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the physical and biological features that, when present in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species. The primary constituent element specific to the tidewater goby include:

Persistent, shallow (in the range of approximately 0.3 to 6.6 feet), still-to-slow-moving water in lagoons, estuaries, and coastal streams with salinity up to 12 ppt, which provide adequate space for normal behavior and individual and population growth that contain one or more of the following:

- Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;

- Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus, Ruppia maritime, Typha latifola,* and *Scirpus* spp., that provides protection from predators and high flow events; or

- 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.

In total, approximately 12,156 acres fall within the boundaries of the 2013 final revised critical habitat designation. The revised critical habitat is located in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties, California.

Recovery Plan

The goal of the tidewater goby recovery plan is to conserve and recover the tidewater goby throughout its range by managing threats and perpetuating viable metapopulations within each recovery unit while maintaining 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 6 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.

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 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.

5-Year Review

The 5-year review for the tidewater goby, completed in 2007, stated that the recovery plan reflects up-to-date information; however, the 5-year review reconsidered the downlisting and delisting criteria in the recovery plan. The 5-year review stated that other, currently available information on the species may also be used to determine the appropriate listing status of the species under the Act. These include the current number of occupied localities, current laws and regulations that act to protect the species, and our current understanding of threats and their impact on the tidewater goby. The 5-year review recommended that we reclassify the tidewater goby from endangered to threatened because we concluded that the species was not in imminent danger of extinction. The main reason for this recommendation was that the number of localities known to be occupied had more than doubled since listing. The 5-year review also concluded that the tidewater goby may be more resilient in the face of severe drought events than believed at the time of listing. The 5-year review also stated that threats identified at the time of listing had been reduced or were not as serious as thought. Although numerous threats to the tidewater goby have been identified (e.g., non-native predation and competition, pollution, cattle grazing), information on the degree of impact these threats may have on the tidewater goby is generally lacking. According to the 5-year review, the increase in occupied localities indicated that these threats appeared to not be having a major impact on the tidewater goby.

On May 18, 2010, we received a petition from The Pacific Legal Foundation**,** requesting that the tidewater goby be reclassified as threatened under the Act. Included in the petition was reference to the 5-year review. We published a 90-day finding on January 19, 2011 (76 FR 3069), stating our conclusion that the petition presented substantial scientific or commercial information indicating that the petitioned action (reclassification of the tidewater goby) may be warranted. A proposed rule to downlist the tidewater goby was published on March 13, 2014 (79 FR 14339).

ENVIRONMENTAL BASELINE

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 CFR 402.02). For the purposes of this biological opinion, we consider the action area to include the entire 4.8-acre project area including the reach of Tecolotito Slough Channel within Goleta Slough extending from the Goleta Beach Park Bridge to the Pacific Ocean.

Goleta Slough is a structural basin that is flooded by the ocean when the sandbar is open and receives freshwater from seven creeks. Portions of the slough support extensive areas of salt marsh vegetation; over 60 percent of the original area of estuarine wetlands in the slough has been eliminated or isolated due to artificially breaching the sandbar and the resulting tidal action (Caltrans 2014). Land use within the area and north of Goleta Slough is designated as public utility, and land south of Goleta Slough is designated as public park. Features inside and adjacent to the action area include parking lots, buildings, and landscaped recreational areas associated with Goleta Beach Park.

The vegetation in the action area consists of southern coastal salt marsh (Holland 1986). Planted associates of coastal bluff scrub (Holland 1986) occur on the slough banks. Landscaped areas and ruderal vegetation also occur in the project area. The action area also supports estuarine aquatic habitat that is at least seasonally connected to the Pacific Ocean. The Goleta Slough is subject to freshwater inputs and tidal fluctuations; the substrates in the aquatic areas are silt and mud. These brackish water conditions provide suitable habitat for a variety of fish species, including the tidewater goby.

Tidewater gobies were detected in 2006 within Goleta Slough during post-construction surveys for the Santa Barbara Airport Tecolotito and Los Carneros Creek realignment project (Federal Aviation Administration 2007; Santa Barbara Airport 2009). Prior to the airport project, the tidewater goby was not known to occur in Goleta Slough. Surveys conducted within Goleta Slough since 2006 show that the largest populations, in Goleta Slough of tidewater gobies, have been found in Tecolotito and Carneros Slough Channels just downstream of the airport's northern boundary.

One tidewater goby has also been observed in Atascadero Slough Channel (URS 2008). In 2008, URS biologists reported that the overall habitat quality within Atascadero, San Jose, and San Pedro Slough Channels was high and large numbers of arrow goby (*Clevelandia ios*) were

observed, which suggested that the habitat is suitable to support other smaller gobies such as the tidewater goby (URS 2008). No tidewater gobies, however, have been detected in surveys of San Pedro and San Jose Slough Channels (URS 2008). Nonetheless, because these drainages are directly linked to Los Carneros and Tecolotito Slough Channels where tidewater goby are readily found and populations of tidewater goby widely fluctuate, these drainages may be potentially inhabited by tidewater gobies in some years and thus we considered these creeks as potentially occupied. The Goleta Slough is a very dynamic system subject to substantial change in hydrology, water chemistry, substrate structure and composition. As such, tidewater gobies may react to these changes and could very easily move from one of the aforementioned occupied locations within the Goleta Slough to the action area.

Critical Habitat

Critical habitat in Goleta Slough encompasses approximately 190 acres. This unit was outside the geographical area occupied by the species at the time of listing but is currently occupied. The unit contains the habitat features essential for the conservation of the tidewater goby.

On an intermittent basis, a sandbar exists across the mouth of the Goleta Slough during the late spring, summer, and/or fall. The sandbar closes or partially closes the slough, thereby providing relatively stable conditions. Goleta Slough contains the PCE throughout the unit, although the precise location of the PCE during any particular period in time may change in response to seasonal fluctuations in precipitation and/or tidal inundation.

Recovery

The final recovery plan for the tidewater goby subdivides the geographic distribution of the species into six recovery units, encompassing a total of 26 sub-units defined according to genetic differentiation and geomorphology. Goleta Slough is included the Conception Recovery Unit. The Conception Recovery Unit is divided into three sub-units and Goleta Slough is included Sub-Unit CO 3, which extends from Point Arguello to the southeastern terminus of the unit near Seacliff, California. Sub-Unit CO 3 is located entirely within Santa Barbara County. Primary tasks for this recovery unit as recommended in the recovery plan include: (1) population monitoring; (2) substantiating Sub-Units based on genetic studies; and (3) considering recolonization if there is a 25 percent reduction in the number of inhabited locations. The 5-year review does not evaluate the status of the recovery unit in terms of how it would contribute to the goals of the recovery plan for the tidewater goby.

EFFECTS OF THE ACTION

The project may adversely affect the tidewater goby and its designated critical habitat. The action area includes approximately 0.65 acre of aquatic habitat. Of this, approximately 0.23 acre will be subject to temporary impacts associated with dewatering, heavy equipment operation, and vibratory pile driving. The remaining 3.92 acres of the action consist of areas (e.g., developed upland areas proposed for staging equipment and restoration) that will be indirectly and temporarily affected by the proposed action.

Dewatering activities may result in the death of any tidewater gobies in the dewatered area due to stranding resulting in desiccation, suffocation, or opportunistic predation. To minimize stranding, Caltrans and the County have proposed to relocate all tidewater gobies out of areas to be dewatered. Tidewater gobies may be injured or killed during relocation activities, from mishandling, physiological stress, or from capture and relocation equipment. Exposure to sunscreen, lotion, or insect repellent, on biologist's hands may also result in mortality. To minimize these potential effects, Caltrans and the County propose to use personnel with experience relocating tidewater gobies and follow guidelines in the Service's tidewater goby survey protocol. However, the potential exists that some tidewater gobies may not be located or may still be killed or injured during the capture and relocation procedures. Furthermore, tidewater gobies may be breeding during the proposed project, and any eggs located within the dewatering area would not be detectable. These eggs may be injured or killed during the proposed project, due to desiccation, crushing, or predation.

The sounds from pile driving can result in temporary impacts to individual tidewater gobies. Temporary impacts can include altering the behavior and physical health of tidewater gobies that are subjected to the sound waves. The type and magnitude of the effects on tidewater gobies are dependent on the method of pile driving, mass of an affected tidewater goby, and the location of individual tidewater gobies in the water in relation to the pile driving (ICF Jones & Stokes 2009).

The proposed project includes replacing a culvert to restore the hydrologic connection of the slough to the adjacent parcel. The altered flow would inundate the 2.7-acre site and create open water habitat, resulting in potential backwater habitat that tidewater gobies could use. If the culvert replacement only provides enough flow to saturate the soils in the parcel and promote salt marsh habitat, the culvert replacement would have no effect on the tidewater goby or its critical habitat.

Project personnel not familiar with the biology of the tidewater goby could unknowingly cause harm, injure or kill individual tidewater gobies by conducting activities that could otherwise be avoided or achieved in a less harmful way. Caltrans and the County propose to use personnel with demonstrable experience (i.e., qualified biologists) with the tidewater goby and its habitat to minimize potential effects from the project activities and its personnel. The Service-approved biologist(s) would provide a pre-project briefing to project personnel explaining the biology of the tidewater goby, activities that could result in adverse effects to the tidewater goby, and the conservation measures being implemented to avoid effects to the species.

No long-term direct effects to the tidewater goby are anticipated to result from the proposed project. Inadvertent contamination of the waterway could occur from vehicular leaks or improper maintenance. Project-related material releases onto channel substrate or into water would result in effects to water quality that may be hazardous to tidewater gobies. Debris falling into the slough during demolition or construction may also degrade water quality. Water quality in the slough channel could be affected if construction-related chemicals (fuels, lubricants, wastes) are accidentally introduced into the water or are allowed to accumulate in channel soils. Sedimentation that would occur during construction activities may result in the injury, death, or

lowered breeding success of tidewater gobies. Sediment may affect tidewater gobies by impairing the efficiency of their gill filaments and exposing them to higher salinities and/or predation as they flee downstream. Direct effects of sedimentation include mortality, reduced physiological function, and burrow smothering. Indirect effects of sedimentation include potential alteration to the food web, which could create cascading effects to higher trophic levels. A reduction in phytoplankton can result from increased turbidity, which can thereafter reduce zooplankton, in turn reducing benthic macroinvertebrates, and thus reduce prey available to tidewater gobies (Henley et al. 2000). Effects resulting from the proposed project would be minimized by Caltrans' and the County's proposed implementation of standard BMPs for the project, which include measures to minimize erosion and sedimentation.

Construction equipment and materials that have the potential to contribute pollutants to storm water discharges include vehicle fluids (e.g., oil, grease, petroleum, coolants, etc.) and general litter. These materials may injure or kill tidewater gobies. The release of these materials into tidewater goby habitat would be minimized by the implementation of the general BMPs, which includes measures to minimize or avoid the release of contaminants into tidewater goby habitat.

Critical Habitat

We expect that the principal adverse effects to the 0.65-acre area of aquatic habitat associated with the proposed activities, as well as the reach of Tecolotito Slough Channel within Goleta Slough extending from the Goleta Beach Park Bridge to the Pacific Ocean, would be disturbance to the substrate and sedimentation. Caltrans' and the County's measures to control sedimentation should help avoid any permanent changes to the primary constituent elements. We do not anticipate any permanent or long-term adverse effects to critical habitat for the tidewater goby as a result of the proposed action.

Recovery

The goal of the tidewater goby recovery plan is to conserve and recover the species throughout its range by managing threats and conserving viable metapopulations within each recovery unit while maintaining morphological and genetic adaptations to regional and local environmental conditions. We do not expect the replacement of the Goleta Beach Park Bridge to substantially affect the conservation of the tidewater goby within the Conception Recovery Unit, in terms of the recovery strategy described in the recovery plan because:

1. The tidewater goby recovery plan emphasizes the importance of the conservation of population units rather than individual fish, and the effects of the replacement of the Goleta Beach Park Bridge are not expected to cause population-level declines in Goleta Slough; and

2. The replacement of the Goleta Beach Park Bridge would not diminish the metapopulation dynamics between individual populations within the Conception Recovery Unit.

The proposed action could adversely affect tidewater goby adults, juveniles, and/or eggs that occur within Tecolotito Slough Channel through increased sedimentation or contamination. These effects will be minimized by Caltrans' and the County's implementation of the

minimization measures described above, and are not anticipated to substantially affect the survival of the species in Goleta Slough. Replacement of the Goleta Beach Park Bridge is not anticipated to compromise the recovery of the tidewater goby.

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. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any non-Federal actions that are reasonably certain to occur in the action area that are likely to adversely affect the tidewater goby and/or its critical habitat.

CONCLUSION

After reviewing the current status of the tidewater goby and its critical habitat, the environmental baseline for the action area, the effects of the project activities, and the cumulative effects, it is the Service's biological opinion that the that the Goleta Beach Park Bridge Replacement Project, as proposed, is not likely to jeopardize the continued existence of the tidewater goby, and is not likely to destroy or adversely modify its designated critical habitat.

The proposed action is designed to avoid most impacts to tidewater goby by relocating individuals from the action area and relocating them to areas with suitable habitat that will not be affected by project activities; however, some effects to tidewater gobies may occur. The County and Caltrans have proposed to have a Service-approved biologist monitor and direct the activities to avoid any tidewater gobies encountered in work areas. As a result, effects to tidewater gobies will be minor. We do not expect any permanent loss of breeding habitat, and few individual tidewater gobies would be affected. The tidewater goby is an annual species and thus has the capacity to produce many more offspring to replace entire populations. This strategy has evolved to compensate for high juvenile mortality due to predation, changing environmental conditions, and their short (typically 1-year) lifespan. For the rangewide status of the species, this means that minor impacts, like those we anticipate for the subject project, will be masked within the next breeding cycle. Because of this and because extensive, permanent habitat loss is not expected, we conclude that the proposed action will not reduce appreciably the likelihood of both the survival and recovery of the species in the wild.

The proposed action will only temporarily affect the PCE for designated critical habitat by dewatering the aquatic portion of the action area (i.e., there will be no long-term adverse effects). Furthermore, the proposed action will create an additional 2.7 acres of suitable habitat. While this newly inundated area is not within designated critical habitat for the tidewater goby, it is contiguous with the existing habitat and should fully compensate for the temporary effects in the designated portion of the action area. Therefore, we conclude that the conservation function of the critical habitat unit and the entire designation will not be diminished by the proposed action.

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 listed species 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 intended as part 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.

The measures described below are non-discretionary, and must be undertaken by Caltrans so that they become binding conditions of any grant or permit issued to the County, as appropriate, 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 (1) fails to assume and implement the terms and conditions or (2) fails to require the County to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the County or Caltrans must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement [50 CFR 402.14(i)(3)].

All tidewater gobies found within the action area may be subject to take in the form of capture during relocation efforts. As a result of capture, some tidewater gobies may suffer injury or direct mortality during capture and relocation. Any tidewater gobies that remain in the project area may desiccate as a result of decreasing water levels, be subject to increased predation, be crushed by workers conducting project activities, or be otherwise injured or killed.

The actual number of tidewater gobies that may be taken cannot be accurately predicted because of their small size and varying abundance in a given location; however, the Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to tidewater goby would likely be low given the nature of the proposed action and the measures proposed to reduce sedimentation.

We cannot determine the precise number of tidewater gobies that may be killed or injured as a result of the project activities. The quantification of take is difficult because of the species' small size, and life history characteristics. The numbers and locations of tidewater gobies within suitable habitat in Goleta Slough may vary from day to day or month to month. Despite our inability to anticipate a precise number of tidewater gobies that would be killed or injured during

project activities, we anticipate that few tidewater gobies are likely to be killed or injured during this project because Caltrans and the County will implement measures to minimize adverse effects to the tidewater goby and its habitat. However, we must determine a reasonable number for the purpose of establishing a limit beyond which formal consultation must be reinitiated. We recognize that for every tidewater goby found dead or injured, other individuals of this species may have been injured or killed and not detected.

The considerations we used in arriving at the number that would trigger reinitiation include: (1) tidewater goby populations fluctuate greatly in number of individuals; (2) dead or injured individuals are difficult to detect; (3) some tidewater gobies may be killed or injured by equipment or foot traffic and during pumping of water for diversions or dewatering; (4) because the number of tidewater gobies in a population may be high, many individuals could be taken without a substantial effect on the population; (5) minimization measures implemented by Caltrans and the County will be effective at minimizing adverse effects to tidewater gobies; and (6) the level of take we anticipate must be consistent with a non-jeopardy determination, in that it cannot appreciably reduce the numbers, reproduction, or distribution of the species. Therefore, based upon the proposed project activities, and the number of tidewater gobies observed in Goleta Slough, and the uncertainty of how many tidewater gobies would be present and captured and relocated, we have determined that take in the form of injury or mortality by the proposed project activities should be less than 10 percent of the total tidewater gobies captured at each project site. We assume that relocated individuals would normally survive, and injury or mortality is the result of unpredictable circumstances or mishandling. If 10 percent or more are found dead or injured as a result capture, Caltrans and the County must contact our office immediately to reinitiate formal consultation. In addition, Caltrans and the County should cease conducting actions resulting in take until the formal consultation reinitiation process is concluded.

We anticipate that some take will occur as a result of dewatering. The actual number of tidewater gobies that may be taken cannot be accurately predicted because of their small size and varying abundance in a given location. Because we are unable to reasonably anticipate the actual number of tidewater gobies that would be taken by the dewatering activities, we are limiting take to ten (10) dead or injured tidewater gobies. If ten (10) tidewater gobies are found dead or injured then the County or Caltrans must contact our office immediately so we can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the terms and conditions of this biological opinion have been, and continue to be, implemented.

This biological opinion provides an exemption from the prohibition against the taking of listed species, contained in section 9 of the Act, only for the activities described in the Description of the Proposed Action section of this biological opinion. Tidewater gobies may be taken only within the boundaries of the action area as defined in the Environmental Baseline section of this biological opinion.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure is necessary or appropriate to minimize the impacts (i.e., amount or extent) of the incidental take of the tidewater goby:

> Take of tidewater gobies must be minimized by using qualified individuals and procedures to monitor, capture, and relocate tidewater gobies.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans and the County must comply with the following terms and conditions, which implements the reasonable and prudent measure described above. These terms and conditions are non-discretionary.

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

1. Only qualified personnel authorized under the auspices of this biological opinion can survey for, capture, and relocate tidewater gobies. Caltrans and the County must request our approval of any biologists they wish to employ to survey for, capture and relocate tidewater gobies from work areas. The request must be in writing and be received by us at least 30 days prior to any such activities being conducted.

2. Prior to handling any tidewater goby, we recommend that the Service-approved biologist ensure that their hands are free of sunscreen, lotion, or insect repellent.

3. Tidewater gobies that are captured must be out of water for the least amount of time possible. 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.

4. Any tidewater goby exhibiting signs of physiological stress will be released immediately at the point of capture.

5. Individual tidewater gobies will be released as soon as possible, and as near as possible to points of capture.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), Caltrans must submit a project completion report to the Service's Ventura Fish and Wildlife Office (2493 Portola Road, Suite B; Ventura, California 93003). The report must include: (1) a table documenting the number of tidewater gobies observed, killed, or injured, during the subject project implementation; (2) a summary of how the terms and conditions of this biological opinion and the protective measures proposed by Caltrans

worked; and (3) any suggestions of how these measures could be revised to improve conservation of tidewater gobies while facilitating compliance with the Act. This information will assist the Service in evaluating future actions for the conservation of the tidewater goby. The report must be submitted to the Service's Ventura Fish and Wildlife Office within 60 days of project completion.

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 three (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.

Care must be taken in handling injured animals to ensure effective treatment and care, and 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 injured or dead specimens that are identified.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that any non-native predators of tidewater gobies be permanently removed from the wild if they can be captured while monitoring project activities. Anyone conducting such removals should be in compliance with the California Fish and Game Code.

- Caltrans should conduct studies to increase our understanding of the population dynamics of tidewater gobies in the project region. Such studies could include developing a metapopulation viability analysis. This type of research and the data obtained could greatly assist the Service and Caltrans in future consultations within tidewater goby habitat.

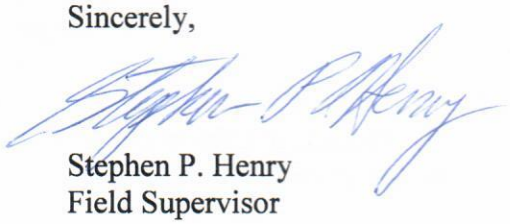
The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on Caltrans' proposal to remove and replace the Goleta Beach Park Bridge. 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) will have lapsed and any further take would 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 regarding this consultation, please contact Chris Dellith at (805) 644-1766, extension 227.

Sincerely,



Stephen P. Henry
Field Supervisor

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