Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
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of paved surfaces as much as is feasible, utilization of an open vegetated storm water conveyance system wherever feasible, flared culvert end sections, outlet protection/velocity dissipation devices, preservation of existing vegetation, and stabilization of disturbed soil with erosion and sediment control BMPs when soil disturbing activities cease.					
Geology/Soils/Seismic/Topography					
Project includes: 1. Normal maintenance of surface drainage and slope maintenance will be incorporated into the project plans. Sloped areas that will be disturbed during construction will be revegetated after completion of construction. New sloped areas will also be planted. Construction of sediment ponds or siltation basins will be considered to retain water during heavy rainfall periods. These basins would be connected to storm drainage system. 2. The project design will incorporate Caltrans standards and construction methods in order to minimize the potential risks associated with strong ground shaking. 3. The project design will incorporate Caltrans standards and construction methods in order to minimize the potential risks associated with potential liquefaction hazards.	Initial Study under Geology/Soils/Seismic/Topography	1.During final design and construction 2. During final design and construction 3.During final design and construction			
Hazardous Waste or Materials					
The City of Santa Cruz/Caltrans will implement the following mitigation measures: 1. A soil investigation will be performed to determine the potential presence of lead in site soils in the vicinity of any project improvement excavations. Additionally, if the project requires soil excavation at the existing Union Pacific Railroad right-of-way, a soil investigation will be conducted to determine the presence of metals, herbicides, and polycyclic aromatic hydrocarbons in site soil. If proposed construction activities extend to the depth of groundwater, sampling of groundwater will be included in the environmental investigation. These	Initial Study under Hazardous Waste or Materials	1.Between 60% and 95% design phases 2. Between 60% and 95% design phases 3. During construction 4. During construction			

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investigations will be conducted to evaluate potential environmental impairments, and soil and groundwater material management and possible disposal requirements. 2. An asbestos and lead-containing paint survey will be conducted at buildings proposed for demolition as part of the project to satisfy Monterey Bay Unified Air Pollution Control District requirements (asbestos) and demolition waste disposal characterization (asbestos and lead). 3. If construction workers encounter thermoplastic paint striping during construction, implement Caltrans' Special Provisions for handling this material. 4. If encountered during construction activities, undocumented underground storage tanks, septic systems and domestic/agricultural/oil wells will be properly removed or abandoned in accordance with Santa Cruz County requirements.					
Air Quality					
Project includes: Construction activities are subject to Caltrans Standard Specifications, Section 14-9.01, "Air Pollution Control" and Section 14.02, "Dust Control." The following measures will be performed: 1. <u>14-9.01 Air Pollution Control:</u> Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code § 11017 (Pub Cont Code 10231). Do not burn material to be disposed of. 2. <u>14-9.02 Dust Control</u>: Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01. Apply water under Section 17, "Watering." Apply dust palliative under Section 18, "Dust Palliative." If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work will be paid for as extra work as specified in Section 4-1.03D,	Initial Study under Air Quality	1.During construction 2.During construction			

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"Extra Work."					
Climate Change					
1. Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system. 2. In addition, the Santa Cruz County Regional Transportation Commission provides ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity. 3. The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost $60 to $70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10% of the electricity of traditional lights, which will also help reduce the project's CO_2 emissions.[21] 4. According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.	Initial Study under Climate Change	1.Ongoing (before, during and after Construction) 2.Ongoing (before, during and after Construction) 3. During or after construction 4. During construction			
BIOLOGICAL ENVIRONMENT					
Natural Communities					

[21] Knoxville Business Journal, "LED Lights Pay for Themselves," May 19, 2008 at http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/.

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
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The City of Santa Cruz/Caltrans will implement the following mitigation measures: 1. Caltrans/City or its contractor will install orange construction barrier fencing to identify environmentally sensitive areas including the creek channel and riparian areas. A qualified biologist will identify sensitive biological resources adjacent to the construction area before the final design plans are prepared so that the areas to be fenced can be included in the plans. Before construction begins, stakes will be placed around the sensitive resource sites to indicate these locations. The fencing will be maintained throughout the construction period and removed after completion of construction. 2. Caltrans/City will retain a U.S. Fish and Wildlife Service-approved biologist to develop and conduct environmental awareness training for construction employees on the importance of onsite biological resources, including sensitive natural communities; trees to be retained; special-status wildlife habitats; and nests of special-status birds. In addition, construction employees will be educated about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations. 3. Caltrans/City will retain a qualified biologist to conduct construction monitoring in and adjacent to all sensitive habitats in the construction area. The frequency of monitoring will range from daily to weekly depending on the biological resource. The monitor, as part of the overall monitoring duties, will inspect the fencing once a week along the creek and riparian vegetation in the construction area, surrounding trees, and special-status wildlife habitats. The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines. 4. Caltrans/City will avoid and minimize potential disturbance of riparian communities by implementing the following measures: – The potential for long-term loss of riparian vegetation will be minimized by trimming	Initial Study under Natural Communities	1.Prior to construction 2.Prior to construction 3.During construction 4.During construction and after construction is complete 5. See Water Quality and Storm Water Runoff above 6.After construction is complete			

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vegetation, where possible, rather than removing entire shrubs or trees. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. To protect nesting birds, Caltrans/City will not allow pruning or removal of woody riparian vegetation between February 1 and September 30 without preconstruction surveys. – A certified arborist will be retained to perform any necessary pruning or root cutting of retained riparian trees. – The areas that undergo vegetative pruning and tree removal will be inspected immediately before construction, immediately after construction, and 1 year after construction to determine the amount of existing vegetative cover, cover that has been removed, and cover that resprouts. If, after 1 year, these areas have not resprouted sufficiently to return the cover to the pre-project level, Caltrans/City will replant the areas with the same species (or native species if existing vegetation removed was non-native) to reestablish the cover to the pre-project condition. 5. Caltrans/City will implement Best Management Practices to maintain water quality. The practices are described above under Water Quality and Storm Water Runoff. 6. Caltrans/City will compensate for temporary construction-related loss of riparian vegetation by replanting disturbed areas with the native species including coast live oak and arroyo willow. A mitigation planting plan that includes a species list and number of each species, planting locations, timing for planting, maintenance requirements, and success criteria will be prepared and implemented for the replanting. Caltrans/City will also compensate for the permanent loss of riparian vegetation by restoring the riparian forest adjacent					

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to the permanent impact area along the Arroyo de San Pedro Regaldo at a minimum ratio of 1:1 (1 acre restored for every 1 acre permanently affected); this ratio will be confirmed through coordination with state and federal agencies as part of the permitting process for the proposed project. 7. Caltrans/ City would identify heritage trees to be removed once project design is finalized and comply with the City's ordinance for the preservation of heritage trees and heritage shrubs (City of Santa Cruz Municipal Code Section 9.56). Under this ordinance, a tree permit from the City Parks and Recreation Department is required for trimming or removing any heritage tree or shrub, including the redwood tree in the southeast quadrant of the intersection. Mitigation is required for heritage tree removal, with the option of either paying a $250.00 bond for each tree to be removed and then replanting onsite or making a $150.00 donation to the City's Tree Trust fund for each tree to be removed. The replanting option requires the applicant to plant three 15-gallon trees (representing a 3:1 ratio) or one 24-inch-box-size specimen tree (representing a 1:1 ratio) for each approved tree removal.					
Wetlands and Other Waters					
The City of Santa Cruz/Caltrans will implement the following mitigation measures: 1. Caltrans/City will restore portions of the creek channel temporarily disturbed by construction to original grade and preconstruction conditions following construction. 2. Caltrans/City will compensate for the permanent fill of other waters of the United States in creek channel habitat based on the requirements specified by the U.S. Army Corps of Engineers in the Nationwide Permit that is issued for this project by implementing one or a combination of the following options. – Purchase credits for created riparian stream channel at a locally approved mitigation bank.					

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– Replanting temporarily disturbed areas with the native species and restoring the riparian forest adjacent to the permanent impact area along the Arroyo de San Pedro Regaldo as described above in Section 2.3.1, *Natural Communities*.					
Animal Species					
The City of Santa Cruz/Caltrans will implement the following mitigation measures: 1. Within 48 hours of the start of work within or along the Arroyo de San Pedro Regaldo, a qualified biologist will conduct a preconstruction survey for foothill yellow-legged frogs and western pond turtle in the construction area and 500 feet upstream and downstream of the construction area. If the biologist discovers any frogs, tadpoles, or egg masses or western pond turtles in or near the construction area, a biological monitor will monitor construction activities within the Arroyo de San Pedro Regaldo. If any foothill yellow-legged frogs or western pond turtles are found during monitoring, a biologist with authorization from the California Department of Fish and Wildlife will relocate frogs and/or turtles outside of the construction area. 2. Vegetation removal will occur during the non-breeding season for most migratory birds (generally between October 1 and January 31) to the extent feasible. If possible, construction activities will begin prior to the nesting season for most birds (generally February 1 through September 30) to discourage noise-sensitive raptors and other birds from attempting to nest within or near the study area. If beginning construction activities (including vegetation removal) prior to the breeding season is not possible, Caltrans/City will retain a qualified wildlife biologist to conduct nesting surveys before the start of construction. If an active nest is found in the survey area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 30) or until after a	Initial Study under Animal Species	1.Prior to construction 2.During construction			

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qualified wildlife biologist determines that the young have fledged and moved out of the project area.					
Threatened and Endangered Species					
The City of Santa Cruz/Caltrans will implement the following measures prior to and during construction at the Arroyo de San Pedro Regaldo. **California red-legged frog and tidewater goby:** 1. Only U.S. Fish and Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs and tidewater gobies. 2. Ground disturbance will not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist is qualified to conduct the work. 3. Before any activities begin on the project, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and tidewater goby and their habitats, the specific measures that are being implemented to conserve the California red-legged frog and tidewater goby, and the boundaries within which the project may be accomplished. 4. A Service-approved biologist will be present at the work site until all California red-legged frogs and tidewater gobies have been removed and disturbance of habitat has been completed. After this time, the project proponent will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that the monitor receives the training outlined in meaure 3 above. If the monitor or Service-approved biologist recommends that work be stopped because California red-legged frogs and/or tidewater gobies would be affected to a degree that exceeds the levels anticipated by the Service during review of the proposed action, they will notify the construction foreman immediately. The construction foreman will either resolve the situation by eliminating the effect immediately or require that all actions which are causing these	Initial Study under Threatened and Endangered Species	1.Prior to and during construction 2.During construction			

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effects be halted. If work is stopped, the Service will be notified as soon as possible. 5. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas. 6. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would not drain directly towards aquatic habitat. The Service-approved biologist or designated monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure a plan is in place for prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. 7. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Service and Caltrans determine that it is not feasible or practical. 8. Project activities taking place in aquatic habitat will be restricted to July 1 through October 15. Construction activities taking place in riparian habitat (i.e., above the water line) will be restricted to May 1 through October 15. 9. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs and tidewater gobies from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during					

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construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. 10. A Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrongs (Rana catesbeiana) and centrarchid fishes from the project area, to the maximum extent possible. 11. Best management practices outlined in any authorizations or permits would be implemented to control sedimentation during and after project implementation. **California red-legged frog specific protective measures:** 1. A Service-approved biologist will survey the project site no later than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be effected by activities associated with the proposed project. The Service-approved biologist will maintain detailed records of any individuals that are moved to assist him or her in determining whether translocated animals are returning to the original point of capture. 2. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Caltrans will install orange construction barrier fencing along the creek channel and riparian forest to delineate the boundary of the work area and identify environmentally sensitive areas to be protected during construction. The Service-approved biologist or designated biological monitor will inspect the barrier fencing daily for California red-legged frogs.					

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3. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs. **Tidewater goby specific protective measure:** 1. Prior to and during incremental draining of the site, a Service-approved biologist will survey the area for tidewater gobies through the use of dip nets or seine nets. Any captured tidewater gobies will be released in appropriate habitat adjacent to the dewatered area. **Central California Coast steelhead and coho salmon:** 1. Caltrans/City proposes to conduct in-water construction activities during the dry season (July 1–October 15) to avoid the primary migration seasons of adult and juvenile salmonids and minimize the potential for adverse effects on water quality and aquatic habitat in the San Lorenzo River resulting from temporary increases in suspended sediment and turbidity. 2. Caltrans/City will require the contractor to bypass the flow of the creek around the construction area and isolate the construction area from the live stream to minimize downstream water quality effects during construction. A pump and/or gravity will be used to bypass the flow through a pipe (large enough to accommodate the entire flow of the creek) to a point downstream of the construction area. Temporary cofferdams will be constructed as needed to isolate the construction area from the live stream, and will be constructed of clean imported gravel, impermeable liners (e.g., plastic), water bladders, and/or sand bags. 3. During dewatering operations, water will be pumped out of the isolated construction area to water storage containers or a temporary detention or filtration basin away from the stream channel to prevent direct discharge of this water to the creek. All gravel, sand bags, liners, pipes, concrete debris, and other materials will be removed from the channel before stream flow is restored to the dewatered area.					

Appendix E U.S. Fish and Wildlife Service Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2012-F-0168

October 29, 2012

Jim Walth
Associate Biologist
Department of Transportation
50 Higuera Street
San Luis Obispo, California 93401-5415

Subject: Biological Opinion for the Route 1/Route 9 Intersection Improvement Project, Santa Cruz County, California (8-8-12-F-54)

Dear Mr. Walth:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the California Department of Transportation's (Caltrans) proposed Route 1/Route 9 Intersection Improvement Project, and its effects on the federally endangered tidewater goby (*Eucyclogobius newberryi*) and the federally threatened California red-legged frog (*Rana draytonii*). This biological opinion is issued in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your request for formal consultation, dated February 3, 2012, was received by our office on February 7, 2012.

This biological opinion was prepared using the biological assessment prepared by Caltrans (2012) that was included with your request for consultation as well as information contained in our files. A complete administrative record for this biological opinion can be made available at the Ventura Fish and Wildlife Office.

CONSULTATION HISTORY

Your February 7, 2012, letter, you requested our concurrence with your determination that the proposed project was not likely to adversely affect the California red-legged frog or tidewater goby. Following our review of the biological assessment Chad Mitcham (of our staff) contacted you by phone on February 10, 2012, to discuss our concern with this determination. Based on known occurrences of both California red-legged frog and tidewater goby within dispersal distance of the project site, we did not concur with your determination. You subsequently revised your determination and requested formal consultation for the effects of the project on California red-legged frog and tidewater goby.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Caltrans proposes to improve traffic operations and provide safety benefits at the existing intersection of Routes 1 and 9 by widening the existing intersection to accommodate additional turning lanes, bicycle lanes, and shoulders. Project activities proposed in and around surface waters involve extension of the existing culvert within Arroyo de San Pedro Regaldo (Arroyo) by 25 feet. A concrete apron and cutoff wall currently exists in the channel at the location of the culvert extension. These structures would remain in place of be replaced in kind and integrated into the culvert extension. An earthen embankment would be constructed to support the intersection widening over the drainage culvert that opens into the Arroyo. The embankment would have a 2:1 slope and would extend approximately 40 feet beyond the existing roadway. Dewatering a short reach of the Arroyo would be required to extend the culvert. This would be accomplished with small check dams and bypass pipes.

Caltrans proposes to implement the following protective measures for the California red-legged frog and tidewater goby:

1. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs and tidewater gobies.

2. Ground disturbance will not begin until written approval is received from the Service that the biologist is qualified to conduct the work.

3. Before any activities begin on the project, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and tidewater goby and their habitats, the specific measures that are being implemented to conserve the California red-legged frog and tidewater goby, and the boundaries within which the project may be accomplished.

4. A Service-approved biologist will be present at the work site until all California red-legged frogs and tidewater gobies have been removed and disturbance of habitat has been completed. After this time, the project proponent will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that the monitor receives the training outlined in measure 3 above. If the monitor or Service-approved biologist recommends that work be stopped because California red-legged frogs and/or tidewater gobies would be affected to a degree that exceeds the levels anticipated by the Service during review of the proposed action, they will notify the construction foreman immediately. The construction foreman will either resolve the situation by eliminating the effect immediately or require that all actions which are causing these effects be halted. If work is stopped, the Service will be notified as soon as possible.

5. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

6. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly towards aquatic habitat. The Service-approved biologist or designated monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure a plan is in place for 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.

7. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Service and Caltrans determine that it is not feasible or practical.

8. Project activities taking place in aquatic habitat will be restricted to July 1 through October 15. Construction activities taking place in riparian habitat (i.e., above the water line) would be restricted to May 1 through October 15.

9. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs and tidewater gobies from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

10. A Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*) and centrarchid fishes from the project area, to the maximum extent possible.

California red-legged frog specific protective measures:

1. A Service-approved biologist will survey the project site no later than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be effected by activities associated with the proposed project. The Service-approved

biologist will maintain detailed records of any individuals that are moved to assist him or her in determining whether translocated animals are returning to the original point of capture.

2. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Caltrans will install orange construction barrier fencing along the creek channel and riparian forest to delineate the boundary of the work area and identify environmentally sensitive areas to be protected during construction. The Service-approved biologist or designated biological monitor will inspect the barrier fencing daily for California red-legged frogs.

3. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.

Tidewater goby specific protective measure:

Prior to and during incremental draining of the site a Service-approved biologist will survey the area for tidewater gobies through the use of dip nets or seine nets. Any captured tidewater gobies will be released in appropriate habitat adjacent to the dewatered area.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATIONS

Jeopardy Determination

The jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the range-wide condition of the tidewater goby and California red-legged frog, the factors responsible for that condition, and the species' survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the tidewater goby and California red-legged frog in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of these species; (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 California red-legged frog; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the tidewater goby and California red-legged frog.

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 and California red-legged frog, 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 or California red-legged frog.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the tidewater goby and California red-legged frog and

the role of the action area in the survival and recovery of these species as the context for evaluation of the significance of the effects of the proposed federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

STATUS OF THE SPECIES

Tidewater goby

The tidewater goby was listed as endangered on March 7, 1994 (Service 1994). 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 to retain the tidewater goby's listing as endangered throughout its range (Service 2002a).

We originally designated critical habitat for the tidewater goby on November 20, 2000 (Service 2000). In November 2006, we proposed to revise that designated critical habitat (71 FR 68914), and subsequently designated critical habitat in January 2008 (Service 2008a). A recovery plan for the tidewater goby was completed on December 12, 2005 (Service 2005).

Much of the information in this species account is summarized from the following sources: Wang (1982), Irwin and Soltz (1984), Lafferty et al. (1999a, 1999b), Swift et al. (1989, 1993, 1997), Worcester (1992), Swenson (1995, 1999), and Swenson and McCray (1996).

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. They tend to be found in the upstream portions of lagoons. Tidewater gobies can withstand a range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 42 ppt, temperatures from 46 to 77 degrees Fahrenheit, and depths from approximately 10 inches to 6.5 feet.

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, course sand of open areas. Females then deposit eggs into the burrows, averaging 400 eggs per spawning effort. Males remain in the burrows to guard the eggs. They frequently foregoing 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. They live in vegetated areas in the lagoon 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.

Tidewater gobies feed on small invertebrates, including mysids, amphipods, ostracods, snails, aquatic insect larvae, and particularly chironomid midge larvae. Tidewater gobies of less than 0.30 inch probably feed on unicellular phytoplankton or zooplankton similar to many other early stage larval fishes.

Historically, the tidewater goby occurred in at least 126 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 98 locations, although the number of sites fluctuates with climatic conditions. Currently, the most stable populations are in lagoons and estuaries of intermediate size (5 to 124 acres) that are relatively unaffected by human activities.

In Santa Barbara County during the fall of 1994, tidewater gobies were reported as common in the Santa Ynez River at 4 miles distance above the lagoon (Swift et al. 1997), however, by January, 1995, they were absent at the upstream sites. Tidewater gobies that are found upstream of the 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.

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 streams, flood and breach lagoon barriers that create strong tidal conditions. As a result, populations plummet. Populations typically recover quickly in summer, with mean densities of between 54 to 323 fish per square foot recorded. Tidewater goby densities are greatest among emergent and submergent 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. Tidewater gobies have been extirpated from water bodies that are impaired by degraded water quality (e.g., Mugu Lagoon, Ventura County), but still occur in others (e.g., Santa Clara River, Ventura County). 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 and bass). These threats continue to affect some of the remaining populations of tidewater gobies.

California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (Service 1996). A recovery plan was published by the Service in 2002 and critical habitat designated on April 13, 2006. On September 16, 2008, revised designation of critical habitat was proposed to modify critical habitat boundaries to better reflect lands containing essential features for the California red-legged frog (Service 2008b). On April 28, 2009, an amended version of the proposed rule was reopened for comments to interested parties (Service 2009). The final designation of critical habitat for the California red-legged frog was published on March 17, 2010 (Service 2010).

Until recently, the California red-legged frog was recognized as two conspecific subspecies, *Rana aurora aurora* and *Rana aurora draytonii*. Recent genetic analysis of the *Rana aurora/draytonii* complex has concluded that the two *Rana aurora* subspecies are in fact separate species (Shaffer et al. 2004, Frost et al. 2006, as cited in Service 2009); this change in nomenclature was acknowledged in the final rule for revised designation of critical habitat for the California red-legged frog (Service 2010).

The California red-legged frog is the largest native frog in the western United States, ranging from 1.5 to 5.1 inches in length. The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger, irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers, and dorsolateral folds are prominent on the back. Tadpoles range from 0.6 to 3.1 inches in length and are dark brown and yellow with dark spots.

California red-legged frogs spend most of their lives in and near sheltered backwaters of ponds, marshes, springs, streams, and reservoirs. Deep pools with dense stands of overhanging willows and an intermixed fringe of cattails are considered optimal habitat. Eggs, larvae, transformed juveniles, and adults also have been found in ephemeral creeks and drainages and in ponds that do not have riparian vegetation. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting population numbers and distribution. Some California red-legged frogs have moved long distances overland between water sources during winter rains. Adult California red-legged frogs have been documented to move more than 2 miles in northern Santa Cruz County "without apparent regard to topography, vegetation type, or riparian corridors" (Bulger et al. 2003). Most of these overland movements occur at night. In another study conducted at the Point Reyes National Seashore and Golden Gate National Recreation Area in Marin County, radio tagged frogs often moved in a straight line between breeding and upland habitats up to 1.7 miles, again with no apparent regard to topography. Some of these frogs remained at breeding ponds all year, while others moved to non-breeding areas, even when the breeding sites retained water (Fellers and Kleeman 2007).

California red-legged frogs breed from November through March with earlier breeding records occurring in southern localities. California red-legged frogs are often prolific breeders, typically laying their eggs during or shortly after large rainfall events in late winter and early spring.

Female California red-legged frogs deposit egg masses on emergent vegetation so that the masses float on the surface of the water. Egg masses contain about 2,000 to 5,000 moderate-sized (0.08 to 0.11 inch in diameter), dark reddish-brown eggs. Embryos hatch 6 to 14 days after fertilization. Larvae generally undergo metamorphosis 3.5 to 7 months after hatching, but some larvae overwinter and metamorphose after up to 13 months (Fellers et al. 2001). Tadpoles probably experience the highest mortality rates of all life stages, with less than 1 percent of eggs laid reaching metamorphosis. Sexual maturity normally is reached at 3 to 4 years of age. California red-legged frogs may live 8 to 12 years. Juveniles can be active diurnally and nocturnally, whereas adults are mainly nocturnal.

The diet of California red-legged frogs is highly variable. Invertebrates are the most common food items for adults, although vertebrates such as Pacific treefrogs (*Hyla regilla*) and California mice (*Peromyscus californicus*) can constitute over half of the prey mass eaten by larger frogs (Hayes and Tennant 1985). Larvae eat algae and detritus.

The historical range of the California red-legged frog extended coastally from southern Mendocino County and inland from the vicinity of Redding, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985, Storer 1925). The California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Historically, this subspecies was found throughout the Central Valley and Sierra Nevada foothills. California red-legged frogs have been documented in 46 counties in California, but now remain in only 238 streams or drainages in 31 counties in California and one region in Baja California, Mexico (Grismer 2002, Fidenci 2004, Smith and Krofta 2005, Service 2009).

Over-harvesting, habitat loss, non-native species introduction, and urban encroachment are the primary factors that have negatively affected the California red-legged frog throughout its range (Jennings and Hayes 1985, Hayes and Jennings 1988). Ongoing causes of decline include direct habitat loss due to stream alteration and disturbance to wetland areas, indirect effects of expanding urbanization, and competition or predation from non-native species. Other causes of declines in amphibian species have been studied by Davidson et al. (2001). Results indicate that ozone depletion resulting in an increase in ultraviolet radiation is a potential factor of amphibian decline. In addition, upwind pesticides and/or other chemicals used for agricultural purposes have been identified as factors in a number of declining California amphibians.

An additional threat affecting amphibians worldwide is the chytrid fungus *Batrachochytrium dendrobatidis*. *Batrachochytrium dendrobatidis* causes chytridiomycosis, a skin disease that has been found to disrupt osmoregulatory function in the skin of amphibians, resulting in an imbalance of electrolytes and death (Voyles et al. 2009). Chytridiomycosis in amphibians may be marked by deformed mouthparts in tadpoles, wherein most infected tadpoles will die at metamorphosis (Service 2002b). Infected boreal toads (*Bufo boreas boreas*) showed few clinical signs of the disease but many appeared weak or lethargic, exhibited excessive shedding of skin and were reluctant to flee at the approach of humans (U.S. Geological Service 2000, as cited in Service 2002b). Chytrid fungi are widespread in the environment where they act as decomposers of keratin, chitin, cellulose, and other plant material, and are known parasites of fungi, algae,

higher plants, protozoa, invertebrates, and most recently in vertebrates. Chytrid fungi reproduce asexually by means of minute, fragile, motile spores, and are probably spread directly from amphibian to amphibian in water. These fungi most likely move from one water source to another on migrating amphibians, water birds, or flying insects (Daszak et al. 1999 as cited in Service 2002b).

Since its discovery in 1998, chytrid fungus has likely been responsible for die-offs of a number of amphibian species, including remaining populations of the endangered boreal toad in the southern Rocky Mountains, and Chiricahua leopard frogs (*Rana chiricahuensis*) in Arizona (Colorado Herpetological Society 2000, as cited in Service 2002b). Occurrences of infection have been observed in two amphibian species in the Sierra Nevada, the mountain yellow-legged frog (*Rana muscosa)* and the Yosemite toad (*Bufo canoris*). An infected California red-legged frog tadpole was collected in Calabasas Pond on the Ellicott Slough National Wildlife Refuge in Santa Cruz County (Service 2002b).

The chytrid fungus *Batrachochytrium dendrobatidis* is now recognized for its ability to spread quickly through amphibian populations and infect numerous species, causing high rates of mortality, and persisting at low host densities (Voyles et al. 2009). These recent findings validate the importance of taking precautions to prevent the spread of chytrid fungus or any disease agent into and/or between amphibian populations.

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 all areas where construction equipment and personnel would be working, areas downstream that may receive sediment, and all areas where California red-legged frogs and/or tidewater gobies area relocated.

Tidewater Goby

Tidewater gobies have been observed approximately 0.5 mile south of the project area during previous surveys (Caltrans 2012). Although tidewater gobies have not been observed within 0.5 mile of the project area; because no physical barriers exist to preclude the species from moving upstream and into the project area, Caltrans and the Service has assumed presence. The action area provides suitable aquatic habitat for the species.

California red-legged frog

California red-legged frogs are known to occur approximately 0.75 mile west of the project area in the Moore Creek drainage. Although no California red-legged frogs were observed during surveys in 2010, the action area provides suitable California red-legged frog breeding, non-

breeding, and upland habitat. If the species occurs in the vicinity of this portion of the San Lorenzo River watershed, dispersing individuals could also occur in the Arroyo de San Pedro Regaldo.

EFFECTS OF THE ACTION

Tidewater Goby

Construction of the earthen embankment and extension of the existing culvert within the creek channel would result in the permanent loss of 0.01 acre of tidewater goby habitat and the temporary loss of an additional 0.01 acre of tidewater goby habitat. Riparian vegetation and the stream bank would be subject to temporary adverse effects, but Caltrans will restore all temporarily impacted areas to pre-construction conditions to the maximum extent feasible.

The proposed project could cause temporary adverse effects to the tidewater goby. Sedimentation and noise and vibrations are likely to occur during the project activities. Noise and vibration are likely to disturb tidewater gobies to some degree, but these effects would last only for the duration of the project. Sedimentation of the habitat is possible, resulting in reduced water quality. Tidewater gobies are able to adapt to sedimentation to a certain extent because they breed in sandy substrates, but increased sedimentation usually creates large amounts of shallow, warm habitats that may be unsuitable (Moyle 2002). This effect would only occur for the duration of construction activities. Caltrans will implement best management practices to minimize the adverse effects of sedimentation.

Project construction within aquatic habitat is scheduled to occur between July 1 and October 15, when water levels would be at their lowest. The project requires the use of heavy equipment within the drainage, but access will be limited to the maximum extent practicable. Any tidewater gobies that are present within the work areas will be captured and relocated by a Service-approved biologist.

Tidewater gobies may be present at Arroyo de San Pedro Regaldo during construction activities. If dewatering of the aquatic habitat occurs, tidewater gobies may be entrained by the pump intakes. Screening pump intakes with wire, no greater than 0.2 inch mesh diameter, would reduce the potential for tidewater gobies to be caught in the inflow. Handling of tidewater gobies to move them from a work area may result in injury or mortality caused by the stress created by the capture efforts. Individuals could suffocate if water becomes depleted of oxygen as a result of a rise in temperature or from excessive crowding in the temporary holding containers. The use of Service-approved biologists to conduct the capture and relocation efforts, however, would minimize these adverse effects to tidewater gobies. Tidewater gobies could also be crushed in seines by the weighted lead line if it should roll inward while being pulled out of the water. To minimize this potential adverse effect, Caltrans will pull seines ashore in a deliberate manner, with care being taken to avoid rolling the weighted line inward.

California red-legged frog

The proposed project could permanently and temporarily cause direct adverse effects to the California red-legged frog. Impacts include the permanent loss of 0.01 acre of potential breeding habitat and the temporary loss of an additional 0.01 acre of potential breeding habitat. Additionally, construction would result in the permanent loss of 0.03 acre of riparian habitat and the temporary loss of 0.04 acre of riparian habitat. Caltrans proposes to minimize the adverse effects to breeding adults by scheduling construction to occur between May 1 and October 15, when water levels would be at their lowest. The project requires the use of heavy equipment within the drainage, but access will be limited to the maximum extent practicable.

Loud noises and vibration from construction activities may alter normal behaviors and disturb California red-legged frogs to the extent that they surface to seek alternate cover. This would expose these individuals to increased chance of desiccation and predation, as well as require an increased expenditure of energy that could result in a reduction in foraging efforts. Such effects will be reduced or prevented with the use of qualified biologist to capture and move California red-legged frogs.

Trash left at the work site during or after project activities could attract predators, which could, in turn, prey on California red-legged frogs. For example, raccoons are attracted to trash and also prey opportunistically on either species. This potential impact will be reduced or avoided by careful control of waste products at all work sites.

Direct adverse effects to California red-legged frogs would also be reduced by relocating individuals, including adults and sub-adults, if any are found, prior to the start of construction activities. California red-legged frogs could be injured or killed if they are improperly handled or contained during capture and relocation efforts. Such effects will be reduced or prevented with the use of qualified biologist to capture and move California red-legged frogs.

Chytrid fungus could be spread if infected California red-legged frogs are relocated to areas with uninfected California red-legged frogs. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and a spore that can move short distances through the water. The fungus only attacks the parts of an amphibian's skin that have keratin (thickened skin), such as the mouthparts of tadpoles and the tougher parts of adults' skin, such as the toes. The fungus can decimate amphibian populations, causing fungal dermatitis which usually results in death in 1 to 2 weeks, but not before infected animals may have spread the fungal spores to other ponds and streams. Once a pond has become infected with Chytrid fungus, the fungus stays in the water for an undetermined amount of time. Caltrans would reduce the risk of spreading Chytrid fungus by using Service-approved biologists.

CUMMULATIVE 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 would require separate consultation pursuant to section 7 of the Act. We are not currently aware of any non-federal actions that are reasonably certain to occur in the action area.

CONCLUSION

After reviewing the current status of the tidewater goby and California red-legged frog, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Route 1/Route 9 Intersection Improvement Project, as proposed, is not likely to jeopardize the continued existence of the tidewater goby or California red-legged frog.

We have reached this conclusion for the following reasons:

1. Caltrans has proposed measures to reduce the adverse effects of the proposed work on the tidewater goby and California red-legged frog;

2. Little effect on the number of California red-legged frogs is expected because few if any individuals are likely to be killed or injured during project implementation and natural breeding and mortality are expected to mask any project effects;

3. Little effect on the number of tidewater gobies is expected because few if any individuals are likely to be killed or injured during project implementation and it is anticipated that any effects would likely be countered by future recolonization of the project site; and,

4. Little to no effect on the distribution of California red-legged frogs and tidewater gobies are expected because only a small area of upland and aquatic habitat would be permanently degraded.

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 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 intentional or negligent actions that create the likelihood of injury to listed species 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.

We expect the level of incidental take of the California red-legged frog and tidewater goby to be very low because: (1) no individuals of these species have been observed in the project area to date; (2) the habitats where these species occur is distinct and readily identifiable; and (3) because Caltrans will ensure the implementation of measures to reduce the extent of incidental take. However, we anticipate that incidental take of the, California red-legged frog and tidewater goby may occur as a result of the following activities that are evaluated in this biological opinion: removal or destruction of habitat features (e.g., California red-legged frog upland habitat, California red-legged frog and tidewater goby aquatic habitat, etc.), soil excavation and grading, grade and stream channel stabilization, construction of earthen embankment, placement of fill, burial, trampling or crushing from equipment and foot traffic, limited removal of vegetation, use of equipment, or noise generated by workers and project activities.

All California red-legged frogs found within project footprint would be subject to take because Caltrans will attempt to capture and relocate all life stages of California red-legged frogs out of work areas prior to the onset of any project activities that may result in adverse effects to California red-legged frogs. We assume that a very small percentage of the captured California red-legged frogs could succumb to injury or mortality; however, the purpose of capturing and relocating is to reduce the overall risk to California red-legged frogs that could result from implementing the project actions. While California red-legged frogs that are not detected and moved out of harm's way may be killed or injured by the construction activities, we anticipate that few, if any, California red-legged will be injured or killed during the proposed action. Incidental take of California red-legged frogs is difficult to detect because of their small body size and finding a dead or injured specimen is unlikely. California red-legged frog may be taken only within the defined boundaries of the work area.

All tidewater gobies within project area would be subject to take because Caltrans will attempt to capture and relocate all life stages of tidewater gobies out of work areas prior to the onset of any project activities that may result in adverse effects to these species. We assume that a very small percentage of the captured tidewater gobies could succumb to injury or mortality; however, similar to the California red-legged frog, the purpose of capturing and relocating is to reduce the overall risk to tidewater gobies that could result from implementing the project actions. Quantification of take for the tidewater goby is similarly difficult to detect due to the species' small size, aquatic habitat, and annual life history. These factors make it difficult to detect where tidewater gobies are present and if any have been affected by the action. This also indicates that some individuals may not be captured and relocated and could be killed or injured by the activities. Tidewater goby may be taken only within the defined boundaries of the work area.

The measures described below are non-discretionary and Caltrans must include them as binding conditions of any contracts associated with the proposed action, 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 require its' contractors to adhere to the terms and

conditions of the incidental take statement through enforceable terms that are added to its authorization, or contracts, 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)].

Only forms of take that are incidental to implementation of the project are exempted from the prohibitions described in section 9 of the Act. If the amount of incidental take is reached, Caltrans has committed to cease project activities and will reinitiate formal consultation with the Service. This biological opinion does not authorize any form of take that is not incidental to implementation of the project within the boundaries of work areas under Caltrans oversight.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the California red-legged frog and tidewater goby:

1. Caltrans must ensure that the level of incidental take during project implementation is commensurate with the analysis contained in this biological opinion.

2. Biologists must be authorized by the Service before they survey for, capture, and move California red-legged frogs and (or) tidewater gobies from the construction area.

The Service's evaluation of the effects of the proposed action includes consideration of the measures developed by Caltrans and the Service and repeated in the Description of the Proposed Action portion of this biological opinion to minimize the adverse effects of the proposed action on the California red-legged frog and tidewater goby. Any subsequent changes in these measures may constitute a modification of the proposed action and may warrant re-initiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that were proposed by Caltrans as part of the proposed action.

TERMS AND CONDITIONS

To be exempted from the prohibitions of section 9 of the Act, Caltrans must ensure that the following terms and conditions, which implement the reasonable and prudent measures described above, are implemented:

1. The following terms and conditions implement reasonable and prudent measure 1:

    a. If one (1) adult or juvenile California red-legged frog or one (1) tadpole is found dead or injured, Caltrans must notify our office immediately. We will then review the project activities to determine if additional protective measures are needed. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

b. Because we are unable to anticipate with a great deal of certainty the number of tidewater gobies that may be killed or injured, Caltrans must notify the Service if more than two (2) individuals are found killed or injured. We will then review the project activities to determine if additional protective measures are needed. The cause of death or injury must be determined by a Service-approved biologist. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

2. The following terms and conditions implement reasonable and prudent measure 2:

a. Caltrans must request our approval of any biologists that they employ to conduct monitoring activities for the tidewater goby or California red-legged frog pursuant to this biological opinion. Such requests must be in writing, and be received by the Ventura Fish and Wildlife Office at least 15 days prior to any such activities being conducted.

b. To avoid transferring disease or pathogens between aquatic habitats during the course of surveys and handling of California red-legged frogs, the Service-approved biologist shall follow the Declining Amphibian Population Task Force's Code of Practice. A copy of this Code of Practice is enclosed. You may substitute a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water) for the ethanol solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

REPORTING REQUIREMENTS

Caltrans must provide a written report to the Service within 90 days following completion of the proposed project. The report must document the number and size of any California red-legged frogs and (or) tidewater gobies relocated from the action area, the date and time of relocation, and a description of relocation sites. The report must also state the number of California red-legged frogs and (or) tidewater gobies killed or injured, describing the circumstances of the mortalities or injuries if known. The report must contain a brief discussion of any problems encountered in implementing minimization measures, results of biological surveys and sighting records, and any other pertinent information such as the acreage affected and restored or undergoing restoration of each habitat type. We encourage you to submit recommendations regarding modification of or additional measures that would improve or maintain protection of the California red-legged frog and tidewater goby, while simplifying compliance with the Act.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead or injured tidewater goby or California red-legged frog, you must notify the Ventura Fish and Wildlife Office by telephone (805-644-1766) and in writing (2493 Portola Road, Suite B, Ventura, California 93003). The report must include the date, time, and location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured tidewater gobies or California red-legged frogs survive, the Service must be contacted regarding their final disposition. The remains must be placed with educational or research institutions holding the appropriate State and Federal permits, such as the Santa Barbara Natural History Museum (Contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93105, telephone 805/682-4711 ext. 321).

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. The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions that minimize or avoid adverse effects or that benefit listed species and their habitats.

Caltrans should work with local agencies and governments towards the implementation of recovery actions identified in the California red-legged frog and tidewater goby recovery plans.

REINITIATION NOTICE

This concludes formal consultation on the Route 1/Route 9 Intersection Improvement Project in Santa Cruz County, California. 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 biological 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 biological opinion; or 4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Chad Mitcham of my staff at (805) 512-6805.

Sincerely,

for Diane K. Noda
Field Supervisor

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The Declining Amphibian Populations Task Force Fieldwork Code of Practice

A. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each work site.

B. Boots, nets, traps, and other types of equipment used in the aquatic environment should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond. wetland, or riparian area.

C. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or "base camp" Elsewhere, when washing-machine facilities are available, remove nets from poles and wash in a protective mesh laundry bag with bleach on the "delicates" cycle.

D. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean them as directed above and store separately at the end of each field day.

E. When amphibians are collected, ensure that animals from different sites are kept separately and take great care to avoid indirect contact (e.g., via handling, reuse of containers) between them or with other captive animals. Isolation from unsterilized plants or soils which have been taken from other sites is also essential. Always use disinfected and disposable husbandry equipment.

F. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.

G. Used cleaning materials and fluids should be disposed of safely and, if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK. E-mail: DAPTF@open.ac.uk Fax: +44 (0) 1908-654167

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
81440-2010-F-0382

May 4, 2011

Rich Krumholz, District Director
California Department of Transportation
50 Higuera Street
San Luis Obispo, California 93401-5415

Subject: Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program (8-8-10-F-58)

Dear Mr. Krumholz:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding projects funded under the Federal Highway Administration's (FHWA) Federal Aid Program that are likely to adversely affect the federally threatened California red-legged frog (*Rana draytonii*) and its designated critical habitat. This document also contains our programmatic concurrence for projects conducted under the Federal Aid Program that are not likely to adversely affect the California red-legged frog or its critical habitat. The development of this programmatic biological opinion and concurrence are the result of a collaborative effort between the California Department of Transportation (Caltrans) and the Service.

Pursuant to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the FHWA assigned and Caltrans assumed responsibilities for consultation and coordination with resource agencies for most projects within the state of California (FHWA 2007). The delegation of authority stipulates that correspondence regarding consultations be addressed to Caltrans, even if the FHWA initiated the consultation. Consequently, we have developed this biological opinion in accordance with this direction.

This biological opinion, which has been prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), evaluates the effects of certain activities, authorized by Caltrans, on the California red-legged frog and its critical habitat, within the Ventura Fish and Wildlife Office's area of responsibility in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara, Counties, California. We believe that California red-legged frog populations in Ventura and Los Angeles Counties are so isolated from other California red-legged frog populations, that they do not meet the eligibility criteria described in the Description of the Proposed Action section of this biological opinion (Criterion 4.).

TAKE PRIDE® IN AMERICA

This biological opinion and programmatic concurrence were prepared primarily with information provided by the California Department of Transportation and information in our files. A complete record of this consultation can be made available upon on request.

CONSULTATION HISTORY

Since the listing of the California red-legged frog in 1996, the FHWA, in conjunction with Caltrans, consulted with the Service's Ventura Fish and Wildlife Office on numerous projects that the FHWA determined were likely to adversely affect the California red-legged frog. The FHWA, Caltrans, and the Service recognized that many of these projects resulted in minor effects to the California red-legged frog and its habitat. Additionally, many of the protective measures included in our previous biological opinions were very similar. Consequently, the Service, FHWA, and Caltrans determined that a programmatic approach to the consultation process was appropriate. Staff from the Service's Ventura Fish and Wildlife Office, FHWA, and Caltrans coordinated extensively during the preparation of a programmatic biological opinion we issued to FHWA in 2003 (Service 2003).

The Service designated critical habitat for the California red-legged frog, on March 17, 2010, (75 Federal Register (FR) 12816). The 2003 programmatic biological opinion does not address critical habitat for the California red-legged frog, so any biological opinion tiered from the 2003 programmatic and issued after critical habitat was designated must include a complete analysis of the effects of the proposed action on critical habitat for the California red-legged frog. Therefore, to further streamline the consultation process achieved with the 2003 programmatic, a complete analysis of the effects of the proposed actions on critical habitat for the California red-legged frog is included in this biological opinion.

Since 2003, we have issued 26 biological opinions that are tiered off of our programmatic biological opinion (Service 2003). Construction on 16 of those projects is complete and we have included additional information on those projects in the Environmental Baseline section of this biological opinion. Caltrans and the Service consider this biological opinion a reinitiation of formal consultation on the 14 projects that have not been completed, or where the proposed action would adversely affect critical habitat for the California red-legged frog.

Although we have strived to issue biological opinions tiered from the 2003 programmatic in a much shorter timeframe than required by Federal regulation (50 CFR 402), at times the large number of formal consultations to be completed has limited our ability to provide these documents within expedited timeframes. Therefore, Caltrans and the Service recognize that we could further streamline the 2003 programmatic by avoiding tiered biological opinions, resulting in a more efficient process.

ADMINISTRATION OF THE PROGRAMMATIC BIOLOGICAL OPINION

Caltrans will prepare all required environmental documents for individual projects that would be conducted pursuant to this biological opinion, including those needed to satisfy its

responsibilities under the Act, the National Environmental Policy Act, and the California Environmental Quality Act.

For all proposed actions that Caltrans determine are likely to adversely affect the California red-legged frog or its critical habitat, Caltrans will consider whether the action:

1. Meets the suitability criteria, as described in the Description of the Proposed Action section of this biological opinion; and

2. Whether the proposed activities and anticipated effects to California red-legged frogs fall within the scope of this biological opinion.

At least 90 days prior to conducting any activities that it determines are likely to adversely affect the California red-legged frog or its critical habitat, Caltrans will notify the Ventura Fish and Wildlife Office, in writing, of projects they propose to conduct under the auspices of this biological opinion. If the Service determines that use of this programmatic biological opinion is not appropriate for the proposed action, we will notify Caltrans in writing within 30 days, and the standard provisions for section 7 consultation will apply. The regulations which implement section 7 allow the Service up to 90 days to conclude formal consultation and an additional 45 days to prepare our biological opinion. If we require additional information to complete our biological opinion, we will describe our needs in our letter; if additional information is not required, we will consider consultation to have been initiated on the date we received the original notification of Caltrans' intent to conduct their proposed project pursuant to the programmatic consultation.

At a minimum, the following information will accompany Caltrans' project notification to the Service:

1. A 7.5-minute topographic map (and aerial photographs if possible) of the proposed project site, as well as photographs of the project site;

2. A written description of the activity, including, but not limited to, construction methods, time of year the work would occur, a habitat restoration plan, and a construction monitoring plan;

3. One cross-section and a minimum of one plan view indicating water bodies, vegetation types, work areas, roads (including temporary construction access roads), restoration sites, refueling and staging areas that will be located within the existing or proposed public right-of-way or temporary construction easements, and environmentally sensitive areas proposed to protect habitat of the California red-legged frog;

4. The names and credentials of biologists who will conduct surveys for, monitor, and handle California red-legged frogs will be provided to the Service 30 days prior to the start of construction. Once the Service approves a biologist, Caltrans would not need to

provide their credentials for subsequent projects conducted pursuant to this consultation; and

5. Information resulting from any site visits, surveys, or habitat assessments conducted for the proposed action.

By January 31 of each year this consultation is in effect, Caltrans will provide to the Service's Ventura Fish and Wildlife Office, a list of projects for which it used this consultation. Caltrans will provide sufficient information on the list to identify the projects that occurred in the previous year under the provisions of this biological opinion. The annual list will assist the Ventura Fish and Wildlife Office in ensuring that it has received the required Project Completion Reports that are described later in this document. Caltrans may also use the occasion of providing the list to recommend changes to the consultation that are more protective of the California red-legged frog and its habitat while simplifying compliance with the Act.

ADMINISTRATION OF THE PROGRAMMATIC INFORMAL CONSULTATION

For all proposed actions that Caltrans determines may affect, but are not likely to adversely affect, the California red-legged frog or its critical habitat, Caltrans will determine if the proposed action meets the suitability criteria for our programmatic concurrence, as described in the Description of the Proposed Action section of this biological opinion. If Caltrans determines the proposed action meets the suitability criteria for concurrence, it will notify our office in writing, at least 30 days prior to the start of construction. We will review Caltrans' notification and respond in in writing, or via electronic mail, if we have concerns or questions regarding the proposed action, or if we have any additional information that we believe may influence Caltrans' determination.

At a minimum the following information will accompany the notification:

1. Caltrans must include a rationale in its notification to us, as to how adverse effects to the California red-legged frog and its critical habitat will be avoided.

2. A 7.5-minute topographic map and aerial photographs of the project site, as well as photographs of the project site. The location of the project, any restoration sites, and all known locations of California red-legged frogs within 2 miles of the project site will be identified on the map and photographs;

3. A written description of the activity, including, but not limited to, construction methods, avoidance measures in addition to those required under this programmatic biological opinion, time of year the work would occur, habitat restoration plans, and construction monitoring plans;

4. One cross-section and a minimum of one plan view indicating water bodies, vegetation types, work areas, roads (including temporary construction access roads), restoration

sites, refueling and staging areas that will be located within the existing or proposed public right-of-way or temporary construction easements, and Environmentally Sensitive Areas proposed to protect habitat of the California red-legged frog; and

5. The results of information gathered by following the procedures in the Service's guidance for assessing habitat quality and field surveys for the California red-legged frog.

Staff from the Service's Ventura Fish and Wildlife Office will be available to provide technical assistance during all phases of consultation. Technical assistance can include assisting Caltrans with determinations of effects, development of project-specific designs and protective measures, modifications of survey protocols, and any other issues that may arise. Technical assistance may be transmitted by the Service in the form of telephone calls, electronic mail, or written correspondence.

BIOLOGICAL OPINION

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

The jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the range-wide condition of the California red-legged frog, the factors responsible for that condition, and the species' survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the California red-legged frog in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the California red-legged frog; (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 California red-legged frog; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the California red-legged frog.

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 California red-legged frog, 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 California red-legged frog.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the California red-legged frog and the role of the action area in the survival and recovery of the subspecies as the context for evaluation of the significance of the effects of the proposed federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse Modification Determination

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 ESA 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 evaluates the range-wide condition of designated critical habitat for the California red-legged frog 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 evaluates 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 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 California red-legged frog 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 California red-legged frog.

The analysis in this biological opinion places an emphasis on using the intended range-wide recovery function of critical habitat for the California red-legged frog and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

DESCRIPTION OF THE PROPOSED ACTION

Eligibility Criteria for the Programmatic Biological Opinion

To make use of this programmatic biological opinion, the Caltrans must ensure that a proposed project satisfies the following criteria:

Criterion 1: Actions that would be appropriately considered in this biological opinion are likely to result in adverse effects to the California red-legged frog and its critical habitat, but would not affect the long-term viability of the population in the action area Caltrans and the Service have previously consulted on numerous projects that met these criteria. These projects include: retrofitting of bridges to reduce damage that may be caused by earthquakes; repair, widening,

and replacement of bridges; repair of stream bank protection; replacement of low-flow stream crossings with bridges; small-scale stabilization of stream slopes; minor improvement of drainage; replacement of culverts; rehabilitation of highway surfaces; and improvement of the safety and operation of highways.

Criterion 2: To qualify for use of this programmatic biological opinion, the measures to reduce or avoid adverse effects to the California red-legged frog and its critical habitat, provided herein, must be implemented; these measures may be modified on a project-specific basis upon the agreement of the Caltrans and the Service.

Criterion 3: The projects must be single and complete, and not part of larger actions or associated with other development projects including, but not limited to, housing subdivisions, commercial or industrial developments, or golf courses.

Criterion 4: The projects must not, in the Service's view, take place in areas where populations of California red-legged frogs are so isolated that even the small effects described in this biological opinion may have substantial impacts.

Minimization of Adverse Effects

Caltrans will ensure that projects implemented in accordance with this biological opinion will be designed to avoid or minimize adverse effects to the California red-legged frog and its critical habitat. At a minimum, the following measures will be incorporated into the projects:

1. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. Biologists authorized under this biological opinion do not need to re-submit their qualifications for subsequent projects conducted pursuant to this biological opinion, unless we have revoked their approval at any time during the life of this biological opinion.

2. Ground disturbance will not begin until written approval is received from the Service that the biologist is qualified to conduct the work, unless the individual(s) has/have been approved previously and the Service has not revoked that approval.

3. A Service-approved biologist will survey the project site no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work begins. The Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and that will not be affected by activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. Caltrans will coordinate with the Service on the relocation site prior to the capture of any California red-legged frogs.

4. Before any activities begin on a project, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

5. A Service-approved biologist will be present at the work site until all California red-legged frogs have been relocated out of harm's way, workers have been instructed, and disturbance of habitat has been completed. After this time, the State or local sponsoring agency will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that this monitor receives the training outlined in measure 4 above and in the identification of California red-legged frogs. If the monitor or the Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by Caltrans and the Service during review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the adverse effect immediately or require that all actions causing these effects be halted. If work is stopped, the Service will be notified as soon as possible.

6. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for 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.

8. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Service and Caltrans determine that it is not feasible or modification of original contours would benefit the California red-legged frog.

9. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confine access routes and

construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

10. Caltrans will attempt to schedule work activities for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frogs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and coordination between Caltrans and the Service during project planning will be used to assist in scheduling work activities to avoid sensitive habitats during key times of the year.

11. To control sedimentation during and after project implementation, Caltrans, and the sponsoring agency will implement best management practices outlined in any authorizations or permits issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, Caltrans will attempt to remedy the situation immediately, in coordination with the Service.

12. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the stream bed will be minimized to the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project.

13. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.

14. A Service-approved biologist will permanently remove any individuals of non-native species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus; Procambarus clarkii*), and centrarchid fishes from the project area, to the maximum extent possible. The Service-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

15. If Caltrans demonstrates that disturbed areas have been restored to conditions that allow them to function as habitat for the California red-legged frog, these areas will not be included in the amount of total habitat permanently disturbed.

16. To ensure that diseases are not conveyed between work sites by the Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times. A copy of the code of practice is enclosed.

17. Project sites will be re-vegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Service and Caltrans determine that it is not feasible or practical.

18. Caltrans will not use herbicides as the primary method used to control invasive, exotic plants. However, if Caltrans determines the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the California red-legged frog:

    a. Caltrans will not use herbicides during the breeding season for the California red-legged frog;

    b. Caltrans will conduct surveys for the California red-legged frog immediately prior to the start of any herbicide use. If found, California red-legged frogs will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur;

    c. Giant reed and other invasive plants will be cut and hauled out by hand and the painted with glyphosate or glyphosate-based products, such as Aquamaster® or Rodeo®;

    d. Licensed and experienced Caltrans staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site;

    e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.

    f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).

    g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 miles per hour.

    h. No herbicides will be applied within 24 hours of forecasted rain.

i. Application of all herbicides will be done by a qualified Caltrans staff or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Caltrans will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

19. Upon completion of any project for which this programmatic consultation is used, Caltrans will ensure that a Project Completion Report is completed and provided to the Ventura Fish and Wildlife Office. A copy of the form is enclosed. Caltrans should include recommended modifications of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation. In addition, Caltrans will reinitiate formal consultation in the event any of the following thresholds are reached as a result of projects conducted under the provisions of this consultation:

Caltrans will reinitiate consultation when, as a result of projects conducted under the provisions of this consultation:

a. 10 California red-legged frog adults or juveniles have been killed or injured in any given year. (For this and all other standards, an egg mass is considered to be one California red-legged frog.);

b. 50 California red-legged frogs have been killed or injured in total;

c. 20 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in any given year;

d. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in total;

e. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in any given year; or

f. 500 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in total.

Total acreages of dispersal habitat that may be adversely affected would be confined to the Caltrans or County rights-of-way that occur adjacent to roads, and would be linear in nature. Dispersal habitat for the California red-legged frog adjacent to roads and highways, within these rights-of-way, is generally less ecologically valuable to the California red-legged frog than larger blocks of habitat. Road corridors and associated disturbances may lead to reduced habitat quality resulting in decreased abundance or density of breeding individuals (Forman et al. 2003).

PROGRAMMATIC INFORMAL CONSULTATION

In addition to the numerous formal consultations we have conducted with Caltrans, we have also conducted many informal consultations and concurred that many of Caltrans' proposed projects are not likely to adversely affect the California red-legged frog or its critical habitat. Many of these projects are very similar to the type of projects we are considering in the subject formal consultation (e.g., bridge and culvert replacements). Because many of the avoidance measures associated with our previous concurrences are very similar, and we are often working on multiple concurrence letters simultaneously, Caltrans and the Service believe a programmatic approach to projects that are not likely to adversely affect the California red-legged frog or its critical habitat is appropriate.

Criteria for the Programmatic Concurrence

Projects that are not likely to adversely affect the California red-legged frog, or its critical habitat, must have only discountable, insignificant, or completely beneficial effects to the subspecies and its critical habitat. The Services (1998) defines the term discountable as extremely unlikely and unexpected; the term insignificant relates to the size of the impact (i.e., unable to meaningfully measure, detect, or evaluate). To make use of this programmatic informal consultation for actions that may affect, but are not likely to adversely affect the California red-legged frog or its critical habitat, Caltrans must demonstrate that the project satisfies the following criteria:

Criterion 1: California red-legged frogs are not known to occur at the proposed project site and were not found during surveys following the Guidelines for surveys and habitat assessments (Service 2007); however, the potential may exist for individuals to occur at the proposed project site because no barriers exist to preclude dispersal of California red-legged frog from nearby suitable habitat.

Criterion 2: Any effects to critical habitat must be discountable, insignificant. or completely beneficial to the California red-legged frog.

Criterion 3: The measures to avoid adverse effects to the California red-legged frog and its critical habitat, provided herein, must be implemented; these measures may be modified on a

project-specific basis to achieve avoidance of adverse effects upon the agreement of Caltrans and the Service.

Measures to Avoid Adverse Effects

For projects to qualify for the programmatic concurrence, at a minimum Caltrans will ensure that the following measures are implemented to avoid adverse effects to the California red-legged frog and its critical habitat:

1. A biologist with experience in the identification of all life stages of the California red-legged frog, and its critical habitat (75 FR 12816), will survey the project site no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is detected the Service will be notified prior to the start of construction. If Caltrans and the Service determine that adverse effects to the California red-legged frog or its critical habitat cannot be avoided, the proposed project will not commence until the Caltrans completes the appropriate level of consultation with the Service.

2. Work activities will take place during the dry season, between April 1 and November 1, when water levels are typically are at their lowest, and California red-legged frogs are likely to be more detectable. Should activities need to be conducted outside of this period, Caltrans may conduct or authorize such activities after obtaining the Service's written approval.

3. Before work begins on any proposed project, a biologist with experience in the ecology of the California red-legged frog, as well as the identification of all its life stages, will conduct a training session for all construction personnel, which will include a description of the California red-legged frog, its critical habitat, and specific measures that are being implemented to avoid adverse effects to the subspecies during the proposed project.

4. If any life stage of the California red-legged frog is detected in the project area during construction, work will cease immediately and the resident engineer, authorized biologist, or biological monitor will notify the Ventura Fish and Wildlife Office via telephone or electronic mail. If Caltrans and the Service determine that adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation.

5. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

6. Prior to the onset of work, Caltrans will ensure that a plan is in place for 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 implement should a spill occur.

7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from aquatic or riparian habitat and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of aquatic or riparian habitat does not occur during such operations by implementing the spill response plan described in measure 6.

8. Plants used in re-vegetation will consist of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or practical.

9. Habitat contours will be returned to their original configuration at the end of project activities in all areas that have been temporarily disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or modification of original contours would benefit the California red-legged frog.

10. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to habitat for the California red-legged frog; this goal includes locating access routes and construction areas outside of aquatic habitat and riparian areas to the maximum extent practicable.

11. To control sedimentation during and after project implementation, Caltrans will implement best management practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, Caltrans will attempt to remedy the situation immediately, in coordination with the Service.

12. If a work site is to be temporarily dewatered by pumping, the intake will be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected from entering the pump system. If California red-legged frogs are detected during dewatering, and adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation.

13. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the creek bed will be minimized to the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project.

14. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.

15. A qualified biologist will permanently remove any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

16. To ensure that diseases are not conveyed between work sites by the Service-approved biologist, the enclosed fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.

This concurrence is based on the proposed avoidance measures, as well as the other criteria that a specific project must meet to qualify for use of this informal consultation. This concurrence does not authorize capture, handling, or relocation of California red-legged frogs. If at any time Caltrans determines: 1) their proposed action is likely to adversely affect the California red-legged frog or its critical habitat; and 2) the proposed project meets criteria for the programmatic biological opinion, Caltrans should notify our office immediately. If Caltrans is able to adhere to the protective measures described previously in the programmatic biological opinion, the work may continue and Caltrans will notify the Service in writing that they are proceeding with the project under the programmatic biological opinion. If at any time Caltrans or the Service conclude that the proposed action does not meet the suitability criteria for the programmatic biological opinion, all work must cease until the appropriate level of consultation has been completed.

STATUS OF THE SPECIES/CRITICAL HABITAT

California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (61 FR 25813). The Service has published a recovery plan (Service 2002).

The historical range of the California red-legged frog extended coastally from southern Mendocino County and inland from the vicinity of Redding, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985; Storer 1925). The California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Historically, this species was found throughout the Central Valley and Sierra Nevada foothills. Four additional occurrences have been recorded in the Sierra Nevada foothills since listing, bringing the total to five extant populations, compared to approximately 26 historical records (71 FR 19244). Currently, California red-legged frogs are only known from 3 disjunct regions in 26 California counties and 1 disjunct region in Baja California, Mexico (Grismer 2002; Fidenci 2004; R. Smith and D. Krofta, in litt. 2005).

California red-legged frogs have been found at elevations that range from sea level to about 5,000 feet. In the Sierra Nevada Mountains, California red-legged frogs typically occur below 4,000 feet and occurrences above this elevation are atypical for the subspecies (71 FR 19244).

The California red-legged frog uses a variety of habitat types, including various aquatic systems, riparian, and upland habitats. The diet of California red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food item of adults. Vertebrates, such as Pacific chorus frogs (*Pseudacris regilla*) and California mice (*Peromyscus californicus*), represented over half of the prey mass eaten by larger frogs (Hayes and Tennant 1985). Feeding activity occurs along the shoreline and on the surface of the water. Hayes and Tennant (1985) found juveniles to be active diurnally and nocturnally, whereas adults were largely nocturnal.

California red-legged frogs breed from November through March; earlier breeding has been recorded in southern localities (Storer 1925). Males appear at breeding sites from 2 to 4 weeks before females (Storer 1925). Female California red-legged frogs deposit egg masses on emergent vegetation so that the masses float on the surface of the water (Hayes and Miyamoto 1984). Egg masses contain about 2,000 to 5,000 moderate-sized, dark reddish brown eggs (Storer 1925; Jennings and Hayes 1985). Eggs hatch in 6 to 14 days (Storer 1925). Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925; Wright and Wright 1949). Sexual maturity can be attained at 2 years of age by males and 3 years of age by females (Jennings and Hayes 1985); adults may live 8 to 10 years (Jennings et al. 1992) although the average life span is considered to be much lower. The California red-legged frog is a relatively large aquatic frog ranging from 1.5 to 5 inches from the tip of the snout to the vent (Stebbins 1985).

California red-legged frogs breed in aquatic habitats. Larvae, juveniles and adults have been collected from streams, creeks, ponds, marshes, plunge pools and backwaters within streams, dune ponds, lagoons, and estuaries. California red-legged frogs frequently breed in artificial impoundments, such as stock ponds, if conditions are appropriate. Although California red-legged frogs successfully breed in streams and riparian systems, high spring flows and cold temperatures in streams often make these sites risky environments for eggs and tadpoles. The importance of riparian vegetation for this species is not well understood. When riparian vegetation is present, California red-legged frogs spend considerable time resting and feeding in it; the moisture and camouflage provided by the riparian plant community likely provide good foraging habitat and may facilitate dispersal in addition to providing pools and backwater aquatic areas for breeding.

Juvenile and adult California red-legged frogs may disperse long distances from breeding sites throughout the year. They can be encountered living within streams at distances exceeding 1.8 miles from the nearest breeding site, and have been found up to 400 feet from water in adjacent dense riparian vegetation (Bulger et. al 2003). During periods of wet weather, starting with the first rains of fall, some individuals may make overland excursions through upland habitats. Most of these overland movements occur at night. Bulger et al. (2003) found marked California red-legged frogs in Santa Cruz County making overland movements of up to 2 miles over the course

of a wet season. These individual frogs were observed to make long-distance movements that are straight-line, point to point migrations over variable upland terrain rather than using riparian corridors for movement between habitats. For the California red-legged frog, suitable habitat is potentially all aquatic and riparian areas within the range of the species and includes any landscape features that provide cover and moisture (61 FR 25813).

Habitat loss and alteration, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid-1900s. Continuing threats to the California red-legged frog include direct habitat loss due to stream alteration and loss of aquatic habitat, indirect effects of expanding urbanization, competition or predation from non-native species including the bullfrog, catfish (*Ictalurus* spp.), bass (*Micropterus* spp.), mosquito fish (*Gambusia affinis*), red swamp crayfish, and signal crayfish. Chytrid fungus (*Batrachochytrium dendrobatidis*) is a waterborne fungus that can decimate amphibian populations, and is considered a threat to California red-legged frog populations.

Critical Habitat for the California Red-legged Frog

On March 17, 2010, the Service designated critical habitat for the California red-legged frog (75 FR 12816). In total, 1,636,609 million acres was designated as critical habitat for the California red-legged frog in 27 California counties. The current designation better reflects the lands containing those essential habitat features necessary for the conservation of the California red-legged frog than did earlier designations that had been subject to litigation. A detailed discussion of the methods used in developing proposed critical habitat can be found in the final rule (75 FR 12816).

We have identified the physical or biological features essential to the conservation of the species, the Primary Constituent Elements (PCEs), that may require special management considerations or protection. Because not all life-history functions require all the PCEs, not all areas designated as critical habitat will contain all the PCEs. Based on our current knowledge of the life-history, biology, and ecology of the California red-legged frog, we determined the California red-legged frog's PCEs to consist of: 1) aquatic breeding habitat; 2) aquatic non-breeding habitat; 3) upland habitat;, and 4) dispersal habitat. Detailed descriptions of these PCEs can be found in the final rule (75 FR 12816). The following is a brief summary of the PCEs:

1) Aquatic breeding habitat consists of standing bodies of fresh water (with salinities less than 4.5 part per thousand), including natural and manmade (stock) ponds, slow moving streams or pools within streams and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years.

2) Aquatic non-breeding habitat consists of the freshwater habitats as described for aquatic breeding habitat but which may or may not hold water long enough for the subspecies to complete the aquatic portion of its lifecycle but which provide for shelter, foraging,

predator avoidance, and aquatic dispersal habitat of juvenile and adult California red-legged frogs.

3) Upland habitat consists of upland areas adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat up to a distance of one mile in most cases (i.e., depending on surrounding landscape and dispersal barriers) including various vegetation types such as grassland, woodland, forest, wetland, or riparian areas that provide shelter, forage, and predator avoidance for the California red-legged frog. Upland habitat should include structural features such as boulders, rocks and organic debris (e.g., downed trees, logs), small mammal burrows, or moist leaf litter.

4) Dispersal habitat consists of accessible upland or riparian habitat within and between occupied or previously occupied sites that are located within one mile of each other, and that support movement between such sites. Dispersal habitat includes various natural habitats, and altered habitats such as agricultural fields, that do not contain barriers (e.g., heavily traveled roads without bridges or culverts) to dispersal. Dispersal habitat does not include moderate- to high-density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large lakes or reservoirs over 50 acres in size, or other areas that do not contain those features identified in PCE 1, 2, or 3 as essential to the conservation of the species.

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 areas within Santa Cruz, San Benito Monterey, San Luis Obispo, Santa Barbara Counties that support the California red-legged frog, or its critical habitat, and that have the potential to be affected directly or indirectly by federally-funded projects. Caltrans projects that would be appropriately conducted pursuant to this biological opinion would occur within the Caltrans or County rights-of-way. Based on the anticipated impacts of the 26 projects we have consulted on and the documented effects of the 15 projects that Caltrans has completed under our previous programmatic biological opinion (Service 2003), we are not aware of any indirect effects which extend beyond the Caltrans or County right-of-way. Therefore, we assume the area within the right-of-way of each of the projects conducted pursuant to this programmatic biological opinion will encompass the direct and indirect effects of the proposed action.

All or portions of the following three recovery units (as defined in the Recovery Plan for the California red-legged frog (Service 2002) are included in the action area:

The Central Coast Recovery Unit includes, generally, the coastal portions of Santa Cruz, Monterey, and San Luis Obispo Counties. This recovery unit supports the greatest number of drainages currently occupied by the California red-legged frog.

The Diablo Range and Salinas Valley Recovery Unit includes, generally, San Benito County and the inland portions of Santa Cruz, Monterey, and San Luis Obispo Counties. This recovery unit supports "no more than 10 percent of the historic localities (of the California red-legged frog) within the Salinas basin and inner Coast Ranges " (Service 2002). Santa Barbara County and portions of San Luis Obispo Counties are within the Northern Transverse Ranges and Tehachapi Mountains Recovery Unit. California red-legged frogs are patchily distributed in the interior portion of this recovery unit and occur in numerous coastal streams in Santa Barbara County.

From April 2003 through June 2010, we issued 26 biological opinions that were tiered off of our previous programmatic biological opinion with FHWA (Service 2003). Under those 26 biological opinions we authorized the incidental take of 34 California red-legged frogs in the form of injury or mortality. Five tiered biological opinions authorized the incidental take of two California red-legged frogs, one biological opinion authorized the incidental take of four California red-legged frogs, and 20 biological opinions authorized the incidental take of one California red-legged frog.

Based on the information contained in the requests for consultation, we calculated the amount of aquatic and upland habitats that we estimate will be permanently lost and temporarily disturbed when construction of these projects has been completed (Appendix 1).

Construction has been completed on 15 projects (Appendix 2) that were conducted under the programmatic biological opinion (Service 2003). No California red-legged frogs were injured or killed during construction of these 15 projects. Five of the Project Completion Reports for these 15 projects did not include the amount of wetland or upland habit impacts. Of the 10 other completed projects, none exceeded the reinitiation thresholds identified in our 2003 programmatic biological opinion (Service 2003).

Critical Habitat

Because our previous programmatic biological opinion (Service 2003) did not address critical habitat, the Project Completion Reports associated with that biological opinion do not include the amount of critical habitat affected by each completed project in terms of the PCEs. Instead, the Project Completion Reports require that the amount of wetland and riparian habitat temporarily and permanently affected by a project be reported. We interpret the amount of wetland habitat affected by a project to include either breeding, non-breeding habitat, or both, and the riparian habitat component to include upland habitat and/or dispersal habitat. The amount of critical habitat for the California red-legged frog that has been adversely affected as a result of the 15 completed projects consists of: 0.033-acre of aquatic habitat for the California red-legged frog that was permanently lost and 0.1-acre that was temporarily disturbed; 0.20-acre of upland habitat that were permanently lost and 0.12-acre that were temporarily disturbed.

Nineteen critical habitat units may be adversely affected by actions conducted pursuant to this biological opinion. These critical habitat units occur in Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara Counties. The physical and biological features important to the

conservation of the California red-legged frog are included in the following descriptions from the final rule 75(FR) 12816:

SCZ-1, North Coastal Santa Cruz County

This unit consists of approximately 72,249 acres of land and is located along the coastline of northern Santa Cruz County, plus a small area in southern San Mateo County, from approximately Green Oaks Creek to Wilder Creek. The unit includes the following watersheds: Green Oaks Creek, Waddell Creek, East Waddell Creek, Scott Creek, Big Creek, Little Creek, San Vicente Creek, Laguna Creek, and Majors Creek. The unit is mapped from occurrences recorded at the time of listing and subsequent to the time of listing and is currently occupied. SCZ-1 contains the features that are essential for the conservation of the species. The unit also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SCZ-1 provides connectivity between occupied sites along the coast and farther inland. In addition, it contains high-quality habitat, indicated by high density of extant occurrences, permanent and ephemeral aquatic habitat suitable for breeding, and accessible upland areas for dispersal, shelter, and food. The unit represents one of two areas designated for critical habitat in Santa Cruz County and is the northern extent of the central coast recovery unit.

The physical and biological features essential to the conservation of California red-legged frog in the SCZ-1 unit may require special management considerations or protection due to water diversions, which may alter aquatic habitats and thereby result in the direct or indirect loss of egg masses, juveniles, or adults.

SCZ-2, Watsonville Slough

This unit consists of approximately 4,057 acres of land and is located along the coastal plain in southern Santa Cruz County, north of the mouth of the Pajaro River and seaward of California Highway 1. It includes locations in the Watsonville Slough system, including all or portions of Gallighan, Hanson, Harkins, Watsonville, Struve, and the West Branch of Struve sloughs. The unit includes portions of the Corralitos Lagoon and Mouth of the Pajaro River watersheds. The unit is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. SCZ-2 contains the features that are essential for the conservation of the species. This unit is currently occupied, and contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and contains upland habitat for foraging, dispersal activities, and shelter (PCE 3 and PCE 4). SCZ-2 also provides connectivity between occupied sites along the coast and farther inland.

The physical and biological features essential to the conservation of California red-legged frog in the SCZ-2 unit may require special management considerations or protection due predation by nonnative species, and due to urbanization and the presence of introduced invasive plants, both of which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

MNT-1, Elkhorn Slough

This unit consists of approximately 519 acres of land and is located along the coastal plain in northern Monterey County, inland from the town of Moss Landing, and it is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. This unit is currently occupied. The unit includes the eastern edge of the Elkhorn Slough watershed and the western edge of the Strawberry Canyon watershed. MNT-1 contains the features that are essential for the conservation of the species. This unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). The designation of MNT-1 is expected to prevent further fragmentation of habitat in this portion of the species' range, contains permanent and ephemeral aquatic habitats suitable for breeding, and contains upland areas for dispersal, shelter, and food. We have determined that these attributes are essential to the conservation of the species. Elkhorn Slough is unique in that it is a large estuary/freshwater slough system not typically found on the California coast. The unit consists entirely of private land.

The physical and biological features essential to the conservation of California red-legged frog in the MNT-1 unit may require special management considerations or protection due to pesticide exposure, trematode infestation, disease, and predation by nonnative species, which may affect aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

MNT-2, Carmel River

This unit consists of approximately 119,492 acres of land, is located south and southeast of the city of Monterey, and includes locations in the Carmel River drainage and nearby San Jose Creek. The unit includes the following watersheds and portions of watersheds: the southern portion of Carmel Bay, Carmel Valley, Robinson Canyon, San Jose Creek, Las Garces Creek, Hitchcock Canyon, the western portion of Lower Tularcitos Creek, Klondike Canyon, Black Rock Creek, Pine Creek, Danish Creek, Cachagua Creek, Lower Finch Creek, Bear Canyon, Bruce Fork, and Miller Canyon. It is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. MNT-2 contains the features that are essential for the conservation of the species. The unit is currently occupied and contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging, dispersal activities, and shelter (PCE 3 and PCE 4). The unit is the largest designated within Monterey County.

The physical and biological features essential to the conservation of California red-legged frog in the MNT-2 unit may require special management considerations or protection due to predation by nonnative species, urbanization, and water pumping and diversions, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

MNT-3, Big Sur Coast

This unit consists of approximately 27,542 acres of land; is located along the Big Sur coastline in Monterey County, approximately from the mouth of the Little Sur River south to McWay Canyon; and includes locations in and around the Big Sur River drainage. The unit includes the following watersheds: Point Sur, Big Sur River, Ventana Creek, Sycamore Canyon, and Partington Creek. This unit was not known to be occupied at the time of listing, but surveys conducted subsequent to the time of listing show that this unit is currently occupied. Based on life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. MNT-3 is essential for the conservation of the species because it contains the largest coastal habitat within Monterey Bay region and provides for connectivity to more interior units further north. MNT-3 also contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging, dispersal activities, and shelter (PCE 3 and PCE 4). MNT-3 is currently occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the MNT-3 unit may require special management considerations or protection due to predation by non-native species, urbanization, and water pumping and diversions, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

SNB-1, Hollister Hills/San Benito River

This unit consists of approximately 36,294 acres of land and is located in northwestern San Benito County in the San Benito River drainage. The unit includes the following watersheds and portions of watersheds: the southern portions of San Justo Reservoir, Northeast Hollister Hills, and Upper Bird Creek; Left Fork Bird Creek; Sulfur Canyon; and the western portions of Arroyo Hondo, Willow Grove School, Paicines Ranch, and Lower Pescadero Creek. It is mapped from occurrences recorded at the time of listing and subsequent to the time of listing near Saint Frances Retreat, San Juan Oaks, Azalea Canyon, Bird Creek, Hollister Hills State Vehicle Recreation Area, Paicines Reservoir, and Tres Pinos Creek. SNB-1 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SNB-1 also provides essential connectivity between sites on the coast plain and inner Coast Range. SNB-1 is occupied by the species, is expected to prevent further fragmentation of habitat in this portion of the species' range, and contains permanent and ephemeral aquatic habitats suitable for breeding and accessible upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the SNB-1 unit may require special management considerations or protection due to predation by nonnative species, and habitat disturbance, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

SNB-2, Antelope Creek/Upper Tres Pinos Creek

This unit consists of approximately 17,356 acres of land and is located in central San Benito County along the Tres Pinos Creek drainage within the Antelope Creek watershed. This unit was not known to be occupied at the time of listing, but surveys conducted subsequent to the time of listing show that this unit is currently occupied, and based on life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. It is mapped from occurrence records in and along Tres Pinos Creek between the confluences of Boulder and Willow Springs Creeks. SNB-2 is essential for the conservation of the species because it provides aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SNB-2 is occupied by the species, is expected to prevent fragmentation of habitat in this portion of the species' range, and contains permanent and ephemeral aquatic habitats suitable for breeding and accessible upland areas for dispersal, shelter, and food. The unit consists entirely of private land. The physical and biological features essential to the conservation of California red-legged frog in the SNB-2 unit may require special management considerations or protection due to predation by nonnative species, overgrazing and trampling of aquatic and upland habitat by feral pigs, and recreational activities, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

SNB-3, Pinnacles National Monument

This unit consists of approximately 63,753 acres of land; is located in the Gabilan Range at Pinnacles National Monument, about 3.5 miles west of the town of San Benito in southern San Benito County; and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Gloria Lake, Bickmore Canyon, Sulfur Creek, and George Hansen Canyon. SNB-3 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SNB-3 is expected to prevent further fragmentation of habitat in this portion of the species' range; contains permanent and ephemeral aquatic habitat suitable for breeding; contains accessible upland areas for dispersal, shelter, and food; and is occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the SNB-3 unit may require special management considerations or protection due to predation by nonnative species, overgrazing and trampling of aquatic and upland habitat by feral pigs, and recreational activities, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

SLO-1, Cholame

This unit consists of approximately 18,018 acres of land; and is located in northeastern San Luis Obispo, northwestern Kern, and southwestern Kings Counties; includes locations in the Cholame Creek drainage; and is mapped from occurrences recorded at time of listing and subsequent to

the time of listing. The unit includes portions of the following watersheds: the southern portion of Blue Point, the western portion of Jack Canyon, and the eastern portion of Palo Prieto Canyon. SLO-1 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SLO-1 contains permanent and ephemeral aquatic habitats suitable for breeding; contains accessible upland areas for dispersal, shelter, and food; and is occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-1 unit may require special management considerations or protection due to highway construction, overgrazing, and water diversions, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

SLO-2, Piedras Blancas to Cayucos Creek

This unit consists of approximately 82,673 acres of land and is located along the coast in northwestern San Luis Obispo County from approximately Arroyo de Los Chinos southward to just before but not including Whale Rock Reservoir. The unit includes the following watersheds: Arroyo de los Chinos, Lower Arroyo de la Cruz, Arroyo del Corral, Oak Knoll Creek, Broken Bridge Creek, Pico Creek, Upper San Simeon Creek, Lower San Simeon Creek, Steiner Creek, Upper Santa Rosa Creek, Lower Santa Rosa Creek, and Lower Green Valley Creek. The unit is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. SLO-2 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SLO-2 provides connectivity within the Santa Lucia Range, and between this range and the inner Coast Range in San Luis Obispo County. This unit is occupied by the species. The unit contains high-quality habitat, indicated by high density of extant occurrences, permanent and ephemeral aquatic habitats suitable for breeding, and accessible upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-2 unit may require special management considerations or protection due to predation by nonnative species, water diversion, overgrazing, and urbanization, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification.

SLO-3, Willow and Toro Creeks to San Luis Obispo

This unit consists of approximately 116,517 acres of land and is located near the coast in central San Luis Obispo County and extends about 1.9 miles north of the town of Morro Bay southward to just north and east of the city of San Luis Obispo. The unit includes the following watersheds: Old Creek, Whale Rock Reservoir, the southern portion of Hale Creek, Morro Bay, San Luisito Creek, the western and southern portions of Santa Margarita Creek, Choro Reservoir, Stenner Lake, Reservoir Canyon, Trout Creek, and Big Falls Canyon. The unit is mapped from

occurrences recorded at the time of listing and subsequent to the time of listing. SLO-3 contains the features that are essential for the conservation of the species. The unit is currently occupied and contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging, dispersal, and shelter (PCE 3 and PCE 4). SLO-3 provides connectivity within the Santa Lucia Range, and between this range and the inner Coast Range in San Luis Obispo County.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-3 unit may require special management considerations or protection due to predation by nonnative species, water diversion, overgrazing, and urbanization, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification.

SLO-4, Upper Salinas River

This unit consists of approximately 34,463 acres of land, is located at the base of Garcia Mountain about 17 miles east of the City of San Luis Obispo, is mapped from occurrences recorded subsequent to the time of listing, and is currently occupied by the species. Based on the life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. The unit includes the following watersheds: Horse Mesa, Douglas Canyon, American Canyon, and Coyote Hole. This unit is essential for the conservation of the species because it is the only unit in San Luis Obispo County entirely within the interior Coast Range and provides connectivity between populations in the coastal areas and populations farther inland. SLO-4 also contains permanent and ephemeral aquatic habitats consisting of natural and manmade ponds surrounded by emergent vegetation and marshland with upland dispersal habitat comprised of riparian areas for dispersal, shelter, and foraging.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-4 unit may require special management considerations or protection due to predation by nonnative species, and due to water diversion, overgrazing, and urbanization, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification.

STB-1, La Brea Creek

This unit consists of approximately 25,164 acres of land, is located in Los Padres National Forest in northern Santa Barbara County, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Bear Canyon, the southern portion of Smith Canyon, Rattlesnake Canyon, Lower South Fork La Brea Creek, and the eastern portion of Lower La Brea Creek. STB-1 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4).

The physical and biological features essential to the conservation of California red-legged frog in the STB-1 unit may require special management considerations or protection due to recreational activities, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

STB-2, San Antonio Terrace

This unit consists of approximately 12,066 acres of land, is located in northwestern Santa Barbara County near the coast, extends from about Casmalia south to the Santa Lucia Canyon near the Purisima Hills, and is mapped from occurrences recorded subsequent to the time of listing. Based on the life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. The unit includes the following watersheds: Graciosa Canyon and Lions Head. STB-2 provides connectivity between coastal populations and populations in the Transverse Ranges. STB-2 also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). This unit is currently occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the STB-2 unit may require special management considerations or protection due to recreational activities, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

STB-3, Sisquoc River

This unit consists of approximately 47,559 acres of land and is located in northern Santa Barbara County and includes locations in the Sisquoc River drainage and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit contains the following watersheds: the southern portion of Tunnel Canyon, Burro Canyon, Sulphur Creek, Lower Manzano Creek, Middle Manzano Creek, Fir Canyon, Upper Cachuma Creek, and the northern portion of Happy Canyon. STB-3 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-3 is occupied by the species, provides connectivity between locations along the coast and the Transverse Ranges, and is essential in stabilizing populations of the species in tributaries to the Santa Ynez River.

The physical and biological features essential to the conservation of California red-legged frog in the STB-3 unit may require special management considerations or protection due predation by nonnative species, recreational activities, and poor water management practices which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

STB-4, Jalama Creek

This unit consists of approximately 7,685 acres of land and is located along the coast in southwestern Santa Barbara County about 4.4 miles south of the City of Lompoc, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the Casper Creek watershed. STB-4 contains the features that are essential for the conservation of the species. The unit includes aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-4 is occupied by the species and provides connectivity between locations along the coast and the Santa Ynez River watershed.

The physical and biological features essential to the conservation of California red-legged frog in the STB-4 unit may require special management considerations or protection due to predation by nonnative species and habitat disturbance, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

STB-5, Gaviota Creek

This unit consists of approximately 12,888 acres of land, is located along the coast in southern Santa Barbara County about 3 miles southwest of the town of Buellton, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Cañada de las Cruces and Cañada de la Gavota. STB-5 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for shelter, foraging and dispersal activities (PCE 3 and PCE 4). STB-5 is occupied by the species and provides connectivity between locations along the coast and the Santa Ynez River watershed.

The physical and biological features essential to the conservation of California red-legged frog in the STB-5 unit may require special management considerations or protection due to predation by nonnative species and poor water management practices, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults. Populations in this unit may also require special management or protection due to their potential importance in stabilizing California red-legged frog populations in tributaries to the Santa Ynez River.

STB-6, Arroyo Quemado to Refugio Creek

This unit consists of approximately 11,985 acres of land, is located along the coast in southern Santa Barbara County about 5 miles south of the town of Solvang, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the Tajiguas Creek watershed. STB-6 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-6 is occupied by the species, provides connectivity between locations along the

coast and the Santa Ynez River watershed, and contains permanent and ephemeral aquatic habitats suitable for breeding, and upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the STB-6 unit may require special management considerations or protection due to predation by nonnative species and poor water management practices, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults. Populations in this unit may also require special management or protection due to their potential importance in stabilizing California red-legged frog populations in tributaries to the Santa Ynez River.

STB-7, Upper Santa Ynez River and Matilija Creek

This unit consists of approximately 145,121 acres of land, is located in southeastern Santa Barbara County about 5 miles north of the City of Santa Barbara, and extends into western Ventura County at Matilija Creek. It is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Los Lauveles Canyon, Redrock Canyon, Oso Canyon, Buckhorn Creek, Camuesa Creek, Devils Canyon, Indian Creek Campground, Upper Mono Creek, Lower Mono Creek, Blue Canyon Upper Agua Caliente Canyon, Diablo Canyon, Lower Agua Caliente Canyon, Juncal Canyon, Lower Matilija Creek, North Fork Matilija Creek, and Cozy Dell Canyon. STB-7 contains the features that are essential for the conservation of the species. This unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-7 is occupied by the species and provides connectivity between locations along the coast, in the Sierra Madre Mountains, and in the Ventura River watershed. It is important to species conservation and the persistence of the species in the Matilija watershed because it contains permanent and ephemeral aquatic habitats suitable for breeding, and upland areas for dispersal, shelter, and food in that portion of the unit, which will provide connectivity between populations within the Transverse Ranges and will prevent further isolation of breeding locations near the limit of the geographic range of the species. The unit as a whole contains high-quality habitat, indicated by the high density of extant occurrences, permanent and ephemeral aquatic habitat suitable for breeding, and accessible upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the STB-7 unit may require special management considerations or protection due to predation by nonnative species, flood control activities, road maintenance, and recreational activities, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or direct death of adults.

EFFECTS OF THE ACTION

California Red-legged Frog

Activities that are evaluated under this biological opinion are those that would not cause ecosystem-scale changes and are not likely to contribute to the decline of the California red-legged frog. These activities would also not preclude any of the potentially affected critical habitat units from providing the primary constituent elements necessary to support the essential life history functions (i.e., reproduction, feeding, and sheltering) of the California red-legged frog.

Direct impacts to adults, sub-adults, tadpoles, and eggs of the California red-legged frog in the footprint of projects evaluated by this biological opinion may include injury or mortality from being crushed by earth moving equipment, construction debris, and worker foot traffic. These impacts will be reduced by minimizing and clearly demarcating the boundaries of the project areas and equipment access routes and locating staging areas outside of riparian areas or other water bodies. Scheduling work activities to avoid sensitive areas, such as breeding pools during the breeding season and isolated aquatic refuges during dry periods, as proposed by Caltrans, would substantially reduce adverse effects.

The capture and handling of California red-legged frogs to move them from a work area may result in injury or mortality. Mortality may occur as a result of improper handling, containment, or transport of individuals or from releasing them into unsuitable habitat. Improper handling, containment, or transport of individuals would be reduced or prevented by use of a Service-approved biologist. California red-legged frogs may attempt to return to the capture site, especially if it contains suitable breeding habitat and the relocation site is a different pond or creek than the capture site. California red-legged frogs attempting to return to capture sites are likely to be more susceptible to predation, exposure to the elements, and vehicle stikes if they attempt to return to the original capture site. Relocating California red-legged frogs within the same drainage or water body, if possible, will reduce this threat. Overall, relocation as proposed by Caltrans is intended to reduce the risk of injury or mortality from the direct effects described above.

Construction activities, including noise and vibration, may cause California red-legged frogs to temporarily abandon habitat adjacent to work areas. This disturbance may increase the potential for predation and desiccation when California red-legged frogs leave shelter sites.

Tadpoles may be entrained by pump intakes if such devices are used to dry out work areas. However, Caltrans will ensure that pump intakes are covered with wire mesh not larger than 0.2 inch to preclude juvenile California red-legged frogs and tadpoles from entering pump intakes.

Some potential also exists for disturbance of habitat to cause the spread or establishment of non-native invasive species, such as giant reed (*Arundo donax*) or salt cedar (*Tamarix* spp.). Once established, these species degrade habitat values through several mechanisms (Service 1999).

Breeding pools surrounded by large amounts of salt cedar and giant reed may dry faster because their rates of evapotranspiration are generally greater than those of native riparian species. The abundance and diversity of prey species are generally less in dense stands of giant reed and salt cedar than in areas dominated by native plants. Additionally, these invasive species can eventually out-compete native plant species and displace them; dense aggregations of salt cedar can cause soils to become hypersaline because these plants concentrate salt from water and then excrete it onto the surrounding ground. Caltrans has proposed measures to prevent the spread or introduction of these species, such as minimizing the number of access routes, size of staging areas, and the total area of the activity; restoring disturbed areas with native species. These measures should reduce or eliminate this adverse effect.

Some actions proposed by Caltrans may involve the use of herbicides to control or eliminate non-native plant species. There are currently 66 pesticides are not approved for use in habitat for the California red-legged frog (Center for Biological Diversity v. Johnson and Nastri; case number C-02-1580-JSW). Caltrans has been exempted from this injunction for upland and riparian projects and projects that are 60 feet or more from bodies of water (G. Ruggerone pers. comm. 2007). However because California red-legged frogs may occur in upland habitat up to one mile from suitable aquatic habitat, there is still a potential for California red-legged frogs to be adversely affected by Caltrans' use of herbicides in uplands.

If Caltrans uses herbicides, Glyphosate (formulated as Rodeo® or Aquamaster®) is probably the most likely herbicide to be used. Glyphosate is the active ingredient in a variety of herbicides including Roundup®, Rodeo®, Aquamaster®, Buccaneer®, Glyfos®, Honcho®, Touchdown®, Vision®, Duramax®, Rattler®, and others. Glyphosate is a systemic herbicide that will kill broadleaf and grass species by inhibiting the production of aromatic amino acids in plants and some microorganisms that are necessary to build proteins (Devine et al. 1993). Because many animals lack the synthesis pathway that glyphosate disrupts, it is considered to have low potential to cause toxicity in animals (Devine et al. 1993). Most glyphosate products are formulated to contain surfactants that allow the active ingredients to spread over and penetrate the plant cuticles. Surfactants can be the most toxic portion of a pesticide product. The surfactant associated with many glyphosate products is a polyethoxylated tallowamine (POEA) surfactant.

California red-legged frog eggs, tadpoles, juveniles and adults can be exposed to glyphosate products and POEA surfactants in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. The half-life of glyphosate in pond water ranges between 12 days and 10 weeks (Extoxnet 1996). Additionally, juvenile and adult California red-legged frogs can also be exposed to glyphosate in terrestrial habitats that have been treated. Glyphosate and POEA readily binds to soil particles and can be degraded by microbes in 7 to 70 days depending on soil conditions (Giesy et al. 2000). The half-life of glyphosate in soil can range from three to 249 days and the POEA surfactant in Roundup has a soil half-life of less than one week (Forest Service 1997).

No information is available regarding the toxicity of glyphosate products specifically to California red-legged frogs. Studies exploring the lethal and sublethal effects of glyphosate products on other amphibians, including similar frog species classified in the same genus as the California red-legged frog (*Rana*) are available but are largely focused on aquatic life stages of the species and formulations of glyphosate that include surfactants. Roundup Original Max®, a glyphosate product with POEA surfactant, was demonstrated to be moderately to highly toxic to nine species of frog and toad tadpoles including five *Rana* species: wood frog (*Rana sylvatica)*, leopard frog (*Rana pipiens*), Cascades frog (*Rana cascadae*), green frog (*Rana clamitans*), and American bullfrog (*Rana catesbeiana*) (Relyea and Jones 2009). Because the biology of these species is very similar to the California red-legged frog, we assume the effects of POEA surfactants and glyphosate formulations containing POEA, would be the same on the California red-legged frog. Mann and Bidwell (1999) also found evidence of acute toxicity to four Australian frog species exposed to Roundup,® while the isopropylamine (IPA) salt of glyphosate (the active constituent in Roundup®) was found to be non-toxic. The mortality of tadpoles is hypothesized to be caused by the lysis of gill cells from exposure to surfactants (Lajmanovich et al. 2003, Edington et al. 2004) resulting in either to asphyxiation or loss of osmotic stability (Able 1974) indicating that the life stage during which frogs and toads have gills may be particularly vulnerable. Glyphosate products containing POEA surfactants have also been shown to have sub-lethal effects to amphibians including decreased size, increased time to metamorphosis, tail malformations, and gonadal abnormalities (Govindarajulu 2008, Howe et al. 2004).

Several studies suggest that the toxicity of glyphosate products is linked with the surfactant, and not the glyphosate. Howe et al. (2004) compared the toxicity of glyphosate alone, to glyphosate with POEA surfactant, and POEA alone, on green frogs. Results indicated that the toxicity of glyphosate with POEA surfactant was similar to the POEA surfactant alone, which was much greater than glyphosate alone, indicating that the POEA was responsible for the toxic effects. In a comprehensive review of studies involving the effects of glyphosate on amphibians Govindarajulu (2008) concluded that the toxic effect of glyphosate products containing POEA are due to the POEA rather than the active glyphosate ingredient.

These studies indicate that glyphosate products formulated with POEA surfactants will likely kill or injure California red-legged frogs in aquatic habitats, with tadpoles being particularly vulnerable. Because glyphosate and POEA readily bind to soil and sediments, these chemicals may be less available to California red-legged frogs in terrestrial habitats; however, research is needed to determine toxicity mechanisms and thresholds from terrestrial exposure. Based on the literature (Howe 2004, Govindarajulu 2008), adverse effects to California red-legged frogs from the use of glyphosate products can be minimized through the use of products that do not contain a surfactant. Formulations that lack a surfactant include Rodeo and Aquamaster, which have been approved by the Environmental Protection Agency, through their registration process, for aquatic use.

A low-toxicity, non-POEA surfactant that works well with Rodeo® or Aquamaster® is Agri-Dex®, produced by Helena Chemicals. We are not aware of any information regarding the

toxicity of Agri-Dex® on amphibians, but based on the data available, Monheit et al. (2004) concluded crop oil-based surfactants (i.e. Agri-Dex®) are probably less acutely toxic to fish, aquatic invertebrates and one frog species tested, than some other types of surfactants. The amount of Agri-Dex® that resulted in acute toxicity (i.e., >1000 parts per million (ppm) (Helena Chemical Company 2004, Washington State Department of Ecology and Agriculture 2004) was levels of magnitude higher than other surfactants tested including POEA (1.6 to 0.65ppm in Haller and Stocker 2003, Giesy et al. 2000, Folmar et al. 1979). It is important to note that so called crop oil-based surfactants, which suggest these products are vegetable-based, are actually petroleum products (Forest Service 1997). There could be sub-lethal adverse effects or long-term adverse effects to California red-legged frogs, from chronic exposure to these chemicals, that have not been documented. Overall, Agri-Dex® may be less toxic than other surfactants, but the use of glyphosate without a surfactant is probably even less toxic to the California red-legged frog.

The protective measures proposed by Caltrans, including surveys prior to the application of herbicides, capture and relocation of California red-legged frogs out of harm's way and restricting the use of herbicides to the non-breeding season (dry summer months) will greatly reduce the potential for injury or mortality of the California red-legged frog as a result of herbicide use.

If water that is impounded during or after work activities creates favorable habitat conditions fornon-native predators, such as bullfrogs, crayfish, and centrarchid fishes, California red-legged frogs may suffer abnormally high rates of predation. Additionally, any time California red-legged frogs are concentrated in a small area at unusually high densities, native predators such as herons, egrets, opossums (*Didelphis virginiana*), and raccoons (*Procyon lotor*) may feed on them opportunistically. Finally, if impoundments occupied by California red-legged frogs were to dry out as a result of construction activity, California red-legged frogs may die of desiccation or be eaten by predators as they attempt to find other suitable habitat. Caltrans' proposal to avoid creating impoundments of water within project areas is likely to reduce these effects.

Trash left during or after project activities could attract predators to work sites, which could, in turn, prey on California red-legged frogs. For example, raccoons are attracted to trash and also prey opportunistically on California red-legged frogs. This potential impact will be reduced or avoided by careful control of waste products at all work sites as proposed by Caltrans.

Chytridiomycosis is an infectious disease that affects amphibians worldwide, and is caused by the chytrid fungus. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and by a spore that can move short distances through the water. The fungus only attacks the parts of a frog's skin that have keratin (thickened skin), such as the mouthparts of tadpoles and the tougher parts of adults' skin, such as the toes. The fungus can decimate amphibian populations, causing fungal dermatitis which usually results in death in 1 to 2 weeks, but not before infected animals may have spread the fungal spores to other ponds and streams. Once a pond or waterway has become infected with chytrid fungus, the fungus stays in the water for an undetermined amount of time. Chytrid fungus could be spread if infected

California red-legged frogs are relocated and introduced into areas with healthy California red-legged frogs. It is also possible during the relocation of California red-legged frogs that infected equipment or clothing could introduce chytrid fungus into areas where it did not previously occur. Caltrans proposes to implement the fieldwork code of practice developed by the Declining Amphibian Populations Task Force which should reduce or eliminate the potential for movement of chytrid fungus.

Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment could degrade aquatic or upland habitat to a degree where California red-legged frogs are adversely affected or killed. The potential for this impact to occur will be reduced by Caltrans' proposal to require: all refueling, maintenance, and staging of equipment and vehicles to occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat; the monitor to ensure contamination of habitat does not occur during such operations; that a plan is in place for prompt and effective response to any accidental spills; and all workers to be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Workers may intentionally or unintentionally disturb, injure, or kill California red-legged frogs. The potential for this impact to occur will be reduced by Caltrans' proposal to conduct pre-construction training informing workers of the presence and protected status of this species and the measures that are being implemented to protect it during project activities.

Work in streams or in floodplains could cause unusually high levels of siltation downstream. This siltation could smother eggs of the California red-legged frog and alter the quality of habitat to the extent that use by individuals of the species is precluded. Implementing best management practices and reducing the area to be disturbed to the minimum necessary, as proposed by Caltrans, will likely assist in reducing the amount of sediment that is washed downstream, as a result of project activities.

Caltrans has proposed that consultation would be reinitiated if 10 California red-legged frogs or 20 tadpoles are killed or injured in any given year, or if 50 California red-legged frogs are killed or injured in total. However, because of the measures that Caltrans has proposed to reduce the level of injury or morality, we expect that few California red-legged frogs would be killed or injured in any given year. Additionally, based on reproductive biology the subspecies, loss of 10 California red-legged frogs or 20 tadpoles in any given year, throughout the seven counties covered by this consultation, is not likely to compromise the conservation of the subspecies because this number represents a very small portion of the total breeding individuals assumed to be present in this region.

Critical Habitat for the California Red-legged Frog

Actions conducted pursuant to this biological opinion may be located within any one of the 19 aforementioned critical habitat units in five counties. The PCEs of critical habitat for the

California red-legged frog include: (1) aquatic breeding habitat, (2) aquatic non-breeding habitat, (3) upland habitat, and (4) dispersal habitat.

The PCEs associated with individual project sites may be permanently or temporarily altered as a result of projects conducted pursuant to this biological opinion. However, we anticipate that the effects of those projects, which must meet the criteria for use of this biological opinion, will be of such a small scale that they will not preclude the PCEs from supporting the essential life history functions of the California red-legged frog. For example, a bridge retrofitted for earthquake safety may have slightly larger footings as a result of the project. Such a minor permanent loss of aquatic habitat is not likely to compromise the ability of a stream to support the aquatic life stages of the California red-legged frog.

The reinitiation thresholds that Caltrans has proposed will ensure that the conservation of the California red-legged frog is not compromised within the affected critical habitat units. These upper limits for permanent loss of aquatic, upland, and dispersal habitat (20 acres in any given year or 100 acres in total) and upland habitat (20 acres in any given year or 100 acres in total), and temporary disturbance (100 in any given year, or 500 acrestotal over the life of the biological opinion) would be spread across the 19 critical habitat units, in which the activities covered by this biological opinion would be implemented. Given the wide distribution of a relatively minor amount of disturbance or loss of aquatic, upland, and dispersal habitat, and the high potential that most disturbance would recover within a few years, we expect the PCEs in each of the affected critical habitat units to continue to provide the life history functions essential to the conservation of the California red-legged frog.

The protective measures included in the Description of the Proposed Action section of this biological opinion would minimize adverse effects to the PCEs of critical habitat for the California red-legged frog. Based on the suitability criteria to qualify for use of this biological opinion, and the protective measures Caltrans would implement, we anticipate that any effects to critical habitat for the California red-legged frog would be temporary or minor. We do not expect such minor or temporary effects to preclude a critical habitat unit from supporting the PCEs and associated life history functions (i.e., reproduction, dispersal, feeding, and sheltering) of critical habitat for the California red-legged frog.

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 unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

At this time, we do not know the specific locations of future projects that may be conducted pursuant to this biological opinion, other than that they would be sited within the Caltrans rights-of-way in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties. We

are unaware of any future non-Federal actions that are reasonably certain to occur within the action area.

CONCLUSION

After reviewing the current status of the California red-legged frog, its critical habitat, the environmental baseline, the effects of the action, projects that could be authorized under the provisions of this programmatic biological opinion, and the cumulative effects, it is the Service's biological opinion that the Caltrans' proposed action is not likely to jeopardize the continued existence of the California red-legged frog or destroy or adversely modify its critical habitat.

We have reached this conclusion because:

1. The notification process described previously allows us to review each proposed action to determine if it meets falls within the scope of this programmatic biological opinion, and to ensure the effects are not likely to be outside of the limited levels we anticipate;

2. Few California red-legged frogs are likely to be killed or injured during project activities;

3. Caltrans has established a threshold that will trigger reinitiation of formal consultation (based on a finite number of California red-legged frogs that would be injured or killed), which would not result in population level impacts to this species;

4. In comparison with the amount of critical habitat available to the California red-legged frog in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties, a relatively small amount of critical habitat would be permanently lost within each critical habitat unit and relative to the entire critical habitat designation;

5. Although we anticipate that some minor or temporary adverse effects to the PCEs in each of the 19 affected critical habitat units may occur, we do not anticipate effects of this nature to preclude those PCEs from providing the essential life history functions (i.e., reproduction, dispersal, feeding, and sheltering) necessary to ensure the conservation of the California red-legged frog because Caltrans has established a threshold of affected acres of habitat types that comprise the PCEs, that will trigger reinitation of formal consultation; and

6. Caltrans has proposed numerous measures to reduce the adverse effects of the proposed activities on the California red-legged frog and its critical habitat.

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 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 intentional or negligent actions that create the likelihood of injury to listed species 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 an incidental take statement contained in a biological opinion.

The measures described below are non-discretionary and Caltrans must make them binding conditions of any contract, permit, or funding to contractors or County Governments for the exemption in 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activities covered by this incidental take statement. If Caltrans fails to adhere to the terms and conditions of the incidental take statement, 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)].

This biological opinion evaluates the effects of a certain scope and scale of actions that Caltrans may undertake in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties on the California red-legged frog, and its critical habitat. Because of the protective measures that Caltrans has proposed, we expect that few California red-legged frogs would be killed in any given year. All California red-legged frogs found within project areas that meet the suitability criteria described in this biological opinion may be captured and relocated. However, because capture and relocation is intended to reduce the potential for injury or mortality, and Caltrans will use biologists experienced in the capture and handling of California red-legged frogs, we anticipate that few, if any, California red-legged frogs will be injured or killed as a result of capture and relocation efforts. Finally, there is a potential for a number of California red-legged frogs to be taken as a result of exposure to herbicides, during which some may be killed or injured. The protective measures Caltrans has proposed, including conducting surveys prior to the application of herbicides, capture and relocating California red-legged frogs out of harm's way, and restricting the use of herbicides to the non-breeding season (dry summer months) of the California red-legged frog will greatly reduce the potential for injury or mortality as a result of herbicide use.

Based on the triggers for reinitiation of formal consultation that Caltrans has identified in their proposed action, we anticipate that no more than 10 adult or subadult California red-legged frogs, 10 egg masses, or 20 tadpoles would be injured or killed in a given year, or 50 California red-legged frogs during the life of this biological opinion, will be injured or killed as a result of the proposed action.

Incidental take of California red-legged frog adults, subadults, or tadpoles may be difficult to detect for the following reasons: (1) the California red-legged frog is generally difficult to detect

due to its small body size; (2) finding a dead or impaired specimen is unlikely; (3) losses may be masked by seasonal fluctuations in hydrology unrelated to the project. However, the maximum number of individuals proposed to be killed or injured each year is a relatively small portion of the population of California red-legged frogs in the action area. We do not expect the loss of these few California red-legged frog adults, subadults, egg masses, or tadpoles to compromise the ability of the species to survive and recover. Given the reproductive biology of the species, described in the Status of the Species section of this biological opinion, this number also represents a very small portion of the total number of individuals assumed to be present throughout the sub species' range. Given the wide distribution of a relatively minor amount of disturbance or temporary loss of habitat, the high potential that most disturbed areas would recover within a few years, and the ability of the California red-legged frog to survive in varying conditions, we expect the overall effect on the habitat of the California red-legged frog by the proposed activities to be minor.

This biological opinion does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. Take that occurs outside of demarcated work areas or from any activity not described in this biological opinion is not exempted from the prohibitions against take described in section 9 of the Act.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the take of California red-legged frogs:

1. Biologists must be authorized by the Service before they survey for, capture, and relocate California red-legged frogs from work areas.

2. Caltrans must further minimize the potential for transmitting Chytrid fungus to new locations.

The Service's evaluation of the effects of the proposed action includes consideration of the measures to minimize the adverse effects of the proposed action on the California red-legged frog that were developed by Caltrans and the Service and repeated in the Description of the Proposed Action portion of this biological opinion. Any subsequent changes in these measures proposed by Caltrans may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that were proposed by Caltrans as part of the proposed action.

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. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:

1.1 Chuck Cesena, Mitch Dallas, Tom Edell, Jennifer Moonjian, Morgan Robertson, Lisa Schicker, Nancy Siepel, Jim Walth, Lisa Schicker, Cathy Stettler, and Sarah Paulson are authorized to capture, handle, relocate, survey and monitor for California red-legged frogs. Paul Holmes is authorized to independently survey and monitor for California red-legged frogs, and may capture, handle, and relocate California red-legged frogs under the direct supervision of the biologists authorized above. If Caltrans wishes to use additional biologists, it must provide their qualifications to the Service at least 30 days before they are to begin work. Additional biologists must not capture, handle, or monitor California red-legged frogs (unless under the direct, on-site supervision of the biologists authorized above) without written approval from the Service.

1.2 Prior to the onset of grading and construction activities, Service-approved biologists must identify appropriate areas to receive translocated California red-legged frog adults and tadpoles in the action area. These areas must be in proximity to the capture site, outside of any area likely to be adversely impacted by construction activities, provide suitable habitat, and be free of exotic predatory species (e.g., bullfrogs, crayfish) to the best of the Service-approved biologist's knowledge.

1.3 If the affected aquatic habitat includes a creek or river system, the relocation site must be within the same drainage.

1.4 If the affected aquatic habitat includes a pond or other isolated water body, Caltrans must receive the Services approval, in writing, prior to relocating any California red-legged frogs.

If Chytrid fungus is known to occur in the drainage or pond where the proposed action would occur, California red-legged frogs must not be relocated into different drainages or ponds, without prior written approval from the Service.

REPORTING REQUIREMENTS

In addition to the pre-project notification, Caltrans must submit an annual list of projects they conducted under this programmatic concurrence and programmatic biological opinion, as described in the Description of the Proposed Action section of this document. In addition, the

enclosed Project Completion form describes the information that Caltrans must provide to the Ventura Fish and Wildlife Office upon the completion of each specific project conducted under this programmatic concurrence and programmatic biological opinion.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Within 3 days of locating any dead or injured California red-legged frogs, Caltrans must notify the Ventura Fish and Wildlife Office by telephone [(805) 644-1766] and in writing (2493 Portola Road, Suite B, Ventura, California 93003). The report must include the date, time, and location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured California red-legged frogs survive, the Service must be contacted regarding their final disposition.

The remains of California red-legged frogs found in San Benito, Santa Cruz, or Monterey Counties must be placed with the California Academy of Sciences Herpetology Department (Contact: Jens Vindum, Senior Collections Manager, California Academy of Sciences Herpetology Department (herpetology@calacademy.org), 55 Music Concourse Drive, San Francisco, California 94118.

The remains of California red-legged frogs found in San Luis Obispo, Santa Barbara, Ventura, or Los Angeles Counties must be placed with the Santa Barbara Natural History Museum (Contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93460, (805) 682-4711, extension 321). Caltrans must make arrangements regarding proper disposition of potential museum specimens prior to implementation of any actions conducted pursuant to this biological opinion.

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.

1. We recommend that Caltrans expand its regional planning efforts for the California red-legged frog to further facilitate an ecosystem approach to conservation while attempting to recognize, at an early stage of planning, where conflicts between conservation of the California red-legged frog and future transportation projects may arise.

2. We encourage Caltrans, biological consultants, and/or other researchers to participate in research on California red-legged frogs. Research topics could include, but are not limited to: metapopulation dynamics, dispersal and migration studies, and the effects of

predation and habitat quality on California red-legged frogs. We encourage Caltrans to coordinate with the Service and the California Department of Fish and Game to develop research proposals under the Service's Endangered Species Conservation Grants (Section 6 Traditional) Program.

The Service requests notification of the implementation of any conservation recommendations, so we may be kept informed of actions that minimize or avoid adverse effects to or benefit the California red-legged frog and its habitat.

REINITIATION NOTICE

This concludes formal consultation on projects funded under the Federal Highway Administration's Federal Aid program that are likely to adversely affect the California red-legged frog, its critical habitat, or its proposed critical habitat. 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 maintained (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 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 on listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action.

If you have any questions, please contact Steve Kirkland of my staff at (805) 644-1766, extension 267.

Sincerely,

Diane K. Noda

Diane K. Noda
Field Supervisor

Enclosures
Caltrans Project Completion Report
The Declining Amphibian Populations Task Force Fieldwork Code of Practice

Project	Biological Opinion	Permanent Aquatic	Permanent Upland	Temp Aquatic	Temp. Upland	Critical Habitat
Picachio Road Bridge	2006	.5	0.18		.39	no
Bob Jones Bike	2007	0	0		0.39	no
Chittendon Pass	2006	0	0.27	0	0.25	no
Harkin Slough Br. Over Struve slough	2006	0.004	0.12	.08	1.16	no
Harkin Slough Br. Over Watsonville Slough	2004	0.25	0.22	0	0.71	no
Cienega Rd. Bridge	2006	0.404	0.404	0	1.19	no
San Benito River Bridge	2006	0	0	0.002	0.159	no
Salinas Rd. Interchange	2006	0.9	0.09	0	0.43	no
Pfeifer Big Sur Left Turn Lane	2006	0.002	0.26	0.002	1.2	no
Hwy 101 widening-SR 135-166	2006	0	0.22	0.25	0	no
San Simeon Creek Bridges	2006	0.3	1.8	0.4	0.25	yes*
San Luis Bay Drive	2005	0	0.25	0.005	3	no
Hollister Ave. Interchange	2005	0	0.21	0	0.084	no
Lone Tree Rd. Bridge	2005	0.005	0.19	0.005	0.27	no
Breaker Point CURE	2004	0.06	0	0.006	0	no
Jalama Creek Bridge	2004	0	0	0.24	0	yes*
Murphy Rd. Bridge	2004	0	0	0	0.22	no
Paulsen-Whiting Bridge	2004	0	0.09	0.06	0.03	no
Hollister Road Bridge	2004	0.04	0.03	0.16	0.3	yes(proposed)
Amesti Road Repair (lost funding)	2003	0.04	0.03	0.16	0.323	no
Main Street Bridge Replacement, Cambria	2007	0.19	1.13	.03	0.03	yes*
Harmony Left turn lane	2007	0.1	0.8	0.029	0.28	no
Gilardi Road Bridge Replacement	2009	0	0.1	0.035	0.333	yes*
Los Osos Valley Road Widening	2008	0.35	1.75	0.5	4.2	yes*
California Coastal Trail Gaviota Segment	2009	0	0.15	0	0.5	yes*
Guadalupe Ditches Project	2010	0	0	3.42	0	no

Appendix 1. Amount of California red-legged frog habitat anticipated to be permanently lost and temporarily disturbed.
*Construction not completed and project within March 17, 2010 critical habitat designation

Project	Biological Opinion	Construction completed	Perm. Aquatic	Temp. Aquatic	Perm. Upland	Temp. Upland
Picachio Road Bridge	2006	2007	Not reported	Not reported	Not reported	Not reported
Bob Jones Bike Path #3	2007	2008	None reported	None reported	None reported	0.138
Chittendon Pass	2006	2009	None reported	Not reported	Not reported	Not reported
Harkin Slough Road over Struve slough	2006	2008	0.004	0.61	0.44	0.71
Harkin Slough Road over Watsonville Slough	2004	2007	0.007	2.88	0	0
Cienega Rd. Bridge	2006	2007	0.032	None reported	0.404	0.159
Pfiefer Big Sur Left Turn Lane	2006	2009	Not reported	Not reported	Not reported	Not reported
Lone Tree Rd. Bridge	2005	2008	0.005	0.005	0.19	None reported
Breaker Point CURE	2004	2006	0.138	0.219	(Included in acres of riparian)	1.33
Murphy Rd. Bridge	2004	2006	Not reported	Not reported	Not reported	Not reported
Paulsen-Whiting Bridge	2004	2006	Not reported	Not reported	Not reported	0.3
San Luis Bay Drive Bridge	2005	2007	0.002	0.034	0.238	0.562
Hollister Road Bridge	2004	2009	0.033	0.15	0.20	0.12
Harmony Left turn lane	2007	2008	0.37	.014	0.016	0.10
San Benito River Bridge Seismic Retrofit	2006	2007	Not reported	Not reported	Not reported	Not reported

Appendix 2. Amount of California red-legged frog habitat permanently lost and temporarily disturbed as a result of the completed project.

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PERSONAL COMMUNICATIONS

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Project Completion Report for Caltrans projects that may affect California red-legged frogs

Caltrans must ensure that this form is completed or that the requested information is provided in a written report upon completion of the project and restoration activities.

Mail completed form or report to: U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003

1. Project title and location:
2. Project Completion Dates A. Construction: B: Restoration:
3. Type of actions that occurred: 4. 5. 6. 7. 8.
9. Habitat type and number of acres affected (e.g., upland, riparian) 10. 11. 12. 13. 14.
15. Linear feet of work in a stream:
16. How the site was restored and a description of the area after completion of the action: 17. 18. 19. 20. 21.
22. If no restoration occurred, the justification for not conducting this work: 23. 24. 25. 26. 27.
28. Which measures were employed to protect California red-legged frogs: 29. 30. 31. 32. 33.
34. The number of California red-legged frogs taken and the form of take: 35. 36. 37. 38. 39.
I. The number of California red-legged frogs removed from work areas to nearby undisturbed habitat and the location of that habitat: II. III. IV. V.
VI. Recommendations of any modifications to future measures to enhance protection of the California red-legged frog while simplifying compliance with the Endangered Species Act. VII. VIII. IX.

The Declining Amphibian Populations Task Force Fieldwork Code of Practice

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each study site.

2. Scrub boots, nets, traps, and other types of equipment used in the aquatic environment with 70 percent ethanol solution or a bleach solution of one-half to one cup of bleach in one gallon of water and rinse clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.

3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or a "base camp." Elsewhere, when laundry facilities are available, remove nets from poles and wash (in a protective mesh laundry bag) with bleach on a "delicate" cycle.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable vinyl[1] gloves and change them between handling each animal. Dedicate separate sets of nets, boots, traps, and other equipment to each site being visited. Clean and store them separately at the end of each field day.

5. Safely dispose of used cleaning materials and fluids. Do not dispose of cleaning materials and fluids in or near ponds, wetland, and riparian areas; if necessary, return them to the lab for proper disposal. Safely dispose of used disposable gloves in sealed bags.

6. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid indirect contact (e.g., via handling or reuse of containers) between them or with other captive animals. Do not expose animals to unsterilized vegetation or soils which have been taken from other sites. Always use disinfected and disposable husbandry equipment.

7. If a dead amphibian is found, place it in a sealable plastic bag and refrigerate (do not freeze). If any captured live amphibians appear unhealthy, retain each animal in a separate plastic container that allows air circulation and provides a moist environment from a damp sponge or sphagnum moss. For each collection of live or dead animals, record the date and time collected, location of collection, name of collector, condition of animal upon collection, and any other relevant environmental conditions observed at the time of collection. Immediately contact the Ventura Fish and Wildlife Office at (805) 644-1766 for further instructions.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, the Open University, Walton Hall, Milton Keynes, MK7 6AA, UK. Email: DAPTF@open.ac.uk. Fax: +44 (0) 1908-65416

[1] Do not use latex gloves. Latex is toxic to amphibians.

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY Arnold Schwarzenegger, Governor

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
TELEPHONE: (805) 542-4657
TDD (805) 549-3259
http://www.dot.ca.gov/dist05

February 3, 2012
Route 1/Route 9 Intersection
Improvement Project

Chad Mitcham
U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, CA 93003

Dear Mr. Mitcham,

The California Department of Transportation (Caltrans) is requesting initiation of formal consultation with the U.S. Fish and Wildlife Service for the Route 1/Route 9 Intersection Improvement Project for tidewater gobi and California red-legged frog individuals under the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (HDA-CA, File #: Section 7 with Ventura USFWS, Document #: S38192) (1-8-02-F-68).

The California Department of Transportation (Caltrans) and the City of Santa Cruz (City) propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9) in the City of Santa Cruz, Santa Cruz County, California.

Based on the limited scope of work for this project Caltrans believes that the project would not likely adversely affect the CRLF or tidewater gobi.

If you have any questions please contact William Mitchell at (916) 737-3000 or WMitchell@icfi.com. As an alternative you can contact Jim Walth at (805) 543-4657 or Jimmy_Walth@dot.ca.gov

Sincerely,

Jim Walth
Associate Biologist, Caltrans D5

Attachments: (5)

Supporting Information for Consultation under the Programmatic Biological Opinion for California Red-Legged Frog for the Route 1/9 Intersection Improvements Project, Santa Cruz County

The following information is provided to support consultation for the finding that the Route 1/9 Intersection Improvements Project would likely adversely affect the California red-legged frog (*Rana draytonii*) under the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (U.S. Fish and Wildlife Service 2011).

Description of the Proposed Action

The California Department of Transportation (Caltrans) and City of Santa Cruz (City) propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9 intersection) in the City of Santa Cruz, Santa Cruz County, California (Figure 1). The Route 1/9 Intersection Improvements Project (proposed action) would improve traffic operations and provide safety benefits at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional turning vehicle lanes, bicycle lanes, and shoulders. The proposed action would be funded with local, State Transportation Improvement Program, and Federal Transportation Improvement Program funds. The limits of the action area are shown in Figure 2.

The proposed improvements, all of which are standard lane and shoulder width dimensions, would require widening the existing intersection. The majority of the improvements would affect ruderal and landscaped areas along Route 1 and Route 9. Specific information on the types, width, number, and location of vehicle lanes, bicycle lanes, and shoulders is provided in the Natural Environment Study for the proposed action.

At the northeast corner of the Route 1/9 intersection, an earthen embankment would be constructed to support the intersection widening over the drainage culvert that opens into a stream channel known as Arroyo de San Pedro Regaldo (Figure 3). The Arroyo de San Pedro Regaldo extends approximately 450 feet from the existing culvert to its outlet with the San Lorenzo River. The embankment would have a 2:1 slope with the toe of the embankment extending approximately 40 feet beyond the existing roadway (Figure 4). The existing culvert would be extended approximately 25 feet. The existing concrete apron and cutoff wall that extend approximately 25 feet from the existing culvert would remain in place or be reconstructed "in-kind". All in-water construction activities within the Arroyo de San Pedro Regaldo would be conducted during the dry season (July 1 through October 15) to avoid effects on juvenile steelhead. Because the creek is perennial, dewatering would be needed. Dewatering would be accomplished by using small check dams and a bypass pipe to isolate all in-channel activities from flowing water and bypass the flow past the construction site. Construction activities along