



United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

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IN REPLY REFER TO:
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Subject: Programmatic Biological Opinion for Projects that May Affect the California Red-legged Frog, Authorized by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and Sections 10 and 14 of the Rivers and Harbors Act

Dear Mr. Mazza and Mr. Castanon:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion for projects authorized by the U.S. Army Corps of Engineers (Corps) and their effects on the federally threatened California red-legged frog (*Rana draytonii*) and its critical habitat, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). This document also contains our programmatic concurrence for projects authorized by the Corps 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 Corps and the Service.

This biological opinion addresses certain activities authorized by the Corps pursuant to the Clean Water Act and Rivers and Harbors Act within the Ventura Fish and Wildlife Office's (VFWO) area of responsibility in San Benito, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, California. We have based this biological opinion on information provided by the Corps and information in our files. These documents, and others relating to the consultation, are located at the VFWO.

The Service published a final rule on August 27, 2019 (84 Federal Register 44976) that changed the definitions of some of the terms that we use in section 7(a)(2) consultations. The changes became effective on October 28, 2019. We developed this biological opinion in accordance with the changes in the final rule.

PROGRAMMATIC INFORMAL CONSULTATION

We have conducted many informal consultations with the Corps, and concurred that many of the Corps' proposed authorizations are not likely to adversely affect the California red-legged frog or its critical habitat. These projects may include activities typically authorized under the Corps' Nationwide Permit Program (culvert repair, bridge replacement, etc.), and other small-scale activities with relatively minor impacts on aquatic resources. Because many of the avoidance measures associated with our previous concurrences are very similar, and we often work on multiple concurrence letters simultaneously, the Corps 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.

To further streamline the informal consultation process, we have developed a form for the applicant to use. The form focuses on essential information to determine whether a project meets the below criteria for informal consultation (see Appendix A). Along with the form, the Corps will submit the names and credentials of biologists who will conduct surveys for California red-legged frogs and perform training sessions for project personnel. The Corps will also submit the names and credentials of biological monitors who will monitor for California red-legged frogs and ensure compliance of avoidance measures. If this information is unknown during submittal, it will be provided to the Service at least 14 days prior to the start of construction. Once the Service approves a biologist, the Corps would not need to provide their credentials for subsequent projects conducted pursuant to this consultation.

Projects that the Service finds to be consistent with this programmatic informal consultation will benefit from expedited consultation relative to our regulatory standard of 60 days for the completion of an informal consultation (84 Federal Register 44976). The Service will endeavor to complete informal consultation within 30 days of receipt of the Corps' informal consultation request. Electronic informal consultation request submissions are preferred, and can be sent to: FW8VenturaSection7@fws.gov.

Criteria for the Programmatic Informal Concurrence

Projects that are not likely to adversely affect the California red-legged frog or its critical habitat must have only beneficial, insignificant, or discountable effects to the species and its critical habitat. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. 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, the Corps 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 or were not found during surveys following the guidelines for surveys and habitat assessments (Service 2005); 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 suitable habitat into the project area.

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

Criterion 3: The measures to avoid adverse effects to the California red-legged frog and its critical habitat, provided below, must be implemented. These measures may be modified on a project-specific basis to achieve avoidance of adverse effects upon agreement between the Corps and the Service.

Measures to Avoid Adverse Effects

For projects to qualify for programmatic concurrence, the Corps will ensure that the applicant incorporates the following measures into the proposed project to avoid adverse effects to the California red-legged frog and its critical habitat:

1. A Service-approved 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 applicant must notify the Service and the Corps prior to the start of construction. If the Corps 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 Corps completes the appropriate level of consultation with the Service.
2. The applicant will conduct work activities between May 1 and October 31 to avoid the breeding season of the California red-legged frog, when activities would be most disruptive to the species. Should the applicant need to conduct activities outside of this period, the Corps may authorize the applicant to conduct such activities after obtaining the Service's written approval.
3. Before work begins on any proposed project, a Service-approved biologist 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 species and critical habitat during the proposed project.

4. A Service-approved biological monitor will be present during all Corps-authorized construction activities. If the Service-approved biological monitor detects any life stage of the California red-legged frog in the project area during construction, work will cease immediately and the resident engineer, Service-approved biologist, or biological monitor will notify the VFWO and Corps via telephone and electronic mail. If the Corps and the Service determine that adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until the Corps and the Service complete the appropriate level of consultation.
5. During project activities, the applicant will properly contain all trash that may attract predators by removing it from the work site and disposing of it regularly. Following construction, the applicant will remove all trash and construction debris from work areas.
6. Prior to the onset of work, the applicant will have a plan in place for prompt and effective response to any accidental spills. The plan will include informing all workers of the importance of preventing spills and of the appropriate measures to implement should a spill occur.
7. The applicant will conduct all refueling, maintenance, and staging of equipment and vehicles 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 Service-approved biological 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. The applicant will return habitat contours 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 the Corps and the Service determine that it is not feasible, or modification of original contours would benefit the California red-legged frog.
9. The applicant will revegetate project sites with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. The applicant will use locally collected plant materials to the extent practicable. The applicant will control invasive, exotic plants to the maximum extent practicable. The applicant will monitor the success of revegetation efforts and submit documentation of revegetation success to the Corps and the Service three years after the completion of restoration.
10. The applicant will limit the number of access routes, size of staging areas, and the total area of the activity to the minimum necessary to achieve the project goals. The applicant will delineate Environmentally Sensitive Areas 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, the applicant 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, as determined by the Service-approved biological monitor, the applicant will attempt to remedy the situation immediately, in coordination with the Service and the Corps.
12. The Service-approved biological monitor will inspect all holes and trenches each morning. If the Service-approved biological monitor finds a California red-legged frog in a hole or trench, the procedures from measure 4 above will apply.
13. If a work site is to be temporarily dewatered by pumping, the applicant will screen the intake 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, the applicant will halt work activities and will contact the Service and the Corps to determine what measures may be necessary to avoid take of California red-legged frogs.
14. Upon completion of construction activities, the applicant will remove any diversions or barriers to flow in a manner that would allow flow to resume with the least disturbance to the substrate. The applicant will minimize alteration of the creek bed to the maximum extent possible and remove any imported material from the stream bed upon completion of the project.
15. Unless approved by the Service and the Corps, the applicant will not impound water in a manner that may attract California red-legged frogs.
16. A Service-approved 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 (<https://fgc.ca.gov/Regulations/Current>).
17. To ensure that diseases are not conveyed between work sites by the Service-approved biologist(s) or biological monitor(s), the biologist(s) and biological monitor(s) will adhere to the following fieldwork practices:
 - 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, 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. Used cleaning materials and fluids will be disposed of safely and, if necessary, taken back to the lab for proper disposal.

We have based our concurrence on the proposed avoidance measures, as well as the other criteria that a specific project must meet to qualify for use of this programmatic informal consultation. Our concurrence does not authorize capture, handling, or relocation of California red-legged frogs. If at any time the Corps determines the proposed action is likely to adversely affect the California red-legged frog or its critical habitat, the Corps should notify our office immediately, so that consultation can be completed at the appropriate level.

PROGRAMMATIC FORMAL CONSULTATION

Consultation History

Since the listing of the California red-legged frog in 1996, the Corps has consulted with the Service's VFWO on numerous projects that the Corps determined were likely to adversely affect the species or its critical habitat. The Corps and the Service recognized that many of these projects resulted in minor effects to the California red-legged frog and its habitat, and that many of the protective measures included in our biological opinions were very similar. Consequently, the Corps and the Service determined that a programmatic approach to the formal consultation process was appropriate and would save time and effort. We issued a biological opinion in 1999, in conjunction with the Sacramento Fish and Wildlife Office (Service 1999), which addressed the repeated consultations and provided some streamlining.

We have been implementing the 1999 biological opinion since then; however regulatory changes compel us to revisit the consultation and develop this new biological opinion that updates the 1999 document.

In 2017, the Service and Corps reached an agreement in principle clarifying the consultation process in instances where the Corps' involvement is limited to making a permitting decision

for a small component of a larger project (e.g., installation of a culvert across a small stream that will provide access to a larger upland development area), known as the Small Federal Handle agreement (Service 2017a, Corps 2017). Due to the complexity involved in preparing a biological opinion that satisfies the 2017 agreement, and the limited scope of projects that satisfy the criteria for this programmatic biological opinion, projects that meet the criteria under the 2017 agreement are excluded from this programmatic process (see Criterion #3 under Eligibility Criteria, below).

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

This section describes the processes and criteria by which the Corps' authorization of a proposed action will be deemed consistent with this biological opinion. Projects that the Service finds to be consistent with this biological opinion will benefit from expedited consultation relative to our regulatory standard of 90 days for consultation and 45 days to prepare a biological opinion [50 CFR 402.14(e)].

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

Administration of the Biological Opinion

The Corps 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 and the National Environmental Policy Act.

For all proposed actions that the Corps determines are likely to adversely affect the California red-legged frog or its critical habitat, the Corps will consider whether the action: (a) meets the suitability criteria, as explained in the Description of the Proposed Action section of this biological opinion; and (b) whether the proposed activities and anticipated effects to California red-legged frogs fall within the scope of this biological opinion.

This programmatic biological opinion is effective for a period of ten (10) calendar years from the date of its issuance and can be extended if deemed appropriate by both agencies. The Service will review this programmatic consultation, as appropriate, to ensure that its application is consistent with the intended criteria.

Submittal Requirements

At least 60 days prior to authorizing any activities that the Corps determines are likely to adversely affect the California red-legged frog or its critical habitat, the Corps will notify the VFWO, in writing, of any project it proposes to authorize under the auspices of this biological opinion. This timeline will provide sufficient time for the Service to review projects proposed to be appended to the biological opinion. If the Service concurs that use of the biological opinion is appropriate, and consultation is completed in less than 60 days, the Corps may issue authorization upon receipt of such notification from the Service. Electronic submissions are preferred, and can be sent to: FW8VenturaSection7@fws.gov. At a minimum, the following information will accompany the Corps' 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 (if appropriate, as determined by the Corps), 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 that may provide habitat for the California red-legged frog;
4. Information resulting from any site visits, surveys, or habitat assessments conducted for the proposed action;
5. A summary of project effects on all life stages of the California red-legged frog; and
6. The names and credentials of biologists who will conduct surveys for, monitor, and handle California red-legged frogs. If this information is unknown during submittal, it will be provided to the Service at least 14 days prior to the start of project work activities. Once the Service approves a biologist, the Corps would not need to provide their credentials for subsequent projects conducted pursuant to this consultation.

Service Response

The Service will respond to the Corps within 15 days of receiving the information listed above, providing a completeness determination or list of additional information required to complete the request. Our response will be in writing, via electronic mail. If the Service determines that use of this programmatic biological opinion is appropriate, we will notify the Corps within 45 days of receiving a complete information package. Our notification will be in writing, via letter or

electronic mail. Once the Corps has received the notification, it may authorize the proposed activities pursuant to its own regulations.

If the Service determines that the Corps' proposed authorization does not satisfy the applicable criteria, we will notify the Corps in writing (via electronic mail) within 30 days, and the standard provisions for section 7(a)(2) consultation will apply. The regulations which implement section 7(a)(2) 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 initial response. The formal consultation process for the project will not begin until we receive all the information, or a statement explaining why that information cannot be made available.

Reporting

By January 31 of each year this consultation is in effect, the Ventura Corps Office will provide to the VFWO, a list of projects for which the Ventura and San Francisco Offices used this consultation. The Corps will provide sufficient information with 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 VFWO in ensuring that it has received the required Project Completion Reports that are described later in the Reporting Requirements section of this document. The Corps may also suggest changes to the consultation that are more protective of the California red-legged frog and its habitat while simplifying compliance with the Act.

Eligibility Criteria

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

Criterion 1: Actions that would be appropriately considered for using this biological opinion are likely to result in adverse effects to the California red-legged frog and/or its critical habitat, but would not affect the long-term viability of the population in the action area. The Corps and the Service have previously consulted on numerous projects that meet these criteria. These projects include, but are not limited to: repair, replacement, and maintenance 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; connection of pipelines; and habitat restoration activities.

Criterion 2: 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.

Criterion 3: The applicant must implement the measures to reduce or avoid adverse effects to the California red-legged frog and its critical habitat, provided in the Minimization of Adverse

Effects section; these measures may be modified on a project-specific basis on agreement between the Corps and the Service.

Criterion 4: The projects must be single and discrete, and not part of larger actions or associated with other projects such as residential development, projects of long duration, ongoing dam maintenance, etc. Projects with adverse effects to the California red-legged frog and/or its critical habitat outside of the Corps' jurisdiction that the Corps is unable to regulate are excluded (i.e., where a "small federal handle" exists or that may be subject to the 2017 agreement discussed earlier).

Criterion 5: For any project resulting in permanent losses of suitable California red-legged frog habitat within the Corps' permit area, the Corps, through the applicant, will include as a conservation measure the submittal of an appropriate habitat compensation proposal (described in Mitigation of Adverse Effects section). If appropriate, this may include a restoration, monitoring, and management plan. The proposal will be submitted to the Service prior to the date of initial ground disturbance, as outlined in the Mitigation of Adverse Effects section.

Criterion 6: Each project must have less than one half (0.5) acre of temporary impacts and/or less than one half (0.5) acre permanent impacts in the Corps' permit area. Temporary effects of the project must be restored to pre-project conditions within three years of project initiation. Exemptions to these impact acreage limits may be approved on a project-specific basis with documented agreement between the Service and the Corps.

For the purposes of this biological opinion, temporary losses and permanent losses are defined as:

1. Temporary losses: The effects resulting from project activities that are short term and do not result in effects to California red-legged frog habitat that are longer than three years; all habitat will be restored to equal or better condition than before the impact within three years following project initiation.
2. Permanent losses: The effects resulting from project activities which remove existing habitat or essential habitat components that cannot be restored to pre-project conditions of equal or greater value within three years.

Additionally, the Corps has proposed limits for loss of California red-legged frog critical habitat. Critical habitat is defined as the specific areas within the geographical area occupied by the species that contain the physical and biological features essential to the conservation of the species, which may require special management considerations or protection; and, specific areas outside the geographical area occupied by the species that are determined essential to the conservation of the species. The limits for permanent loss and temporary disturbance of critical habitat are listed as follows:

- a. No more than 2 acres of critical habitat for the California red-legged frog, occurring within the Corps' permit area, that include the physical and biological features of breeding and non-breeding aquatic habitat, upland, or dispersal habitat will be permanently lost in any given year;
- b. No more than 15 acres of critical habitat for the California red-legged frog, occurring within the Corps' permit area, that include the physical or biological features of breeding and non-breeding aquatic, upland, or dispersal habitat will be permanently lost in total during the 10-year duration of this biological opinion;
- c. No more than 4 acres of critical habitat for the California red-legged frog, occurring within the Corps' permit area, that include the physical or biological features of breeding and non-breeding aquatic habitat, upland, or dispersal habitat will be temporarily disturbed in any given year; and
- d. No more than 20 acres of critical habitat for the California red-legged frog, occurring within the Corps' permit area, that include the physical or biological features of breeding and non-breeding aquatic habitat, upland, and dispersal habitat will be temporarily disturbed in total during the 10-year duration of this biological opinion.

Projects that meet the suitability criteria and may involve some or all of the following activities are often authorized by the Corps under the Nationwide Permit program. To guide the Corps during project evaluation, the Service has reviewed Nationwide Permits the Corps has issued under 33 CFR 330.3 and has determined that projects typically authorized under the Nationwide Permits listed below may be appropriate for appendage to this programmatic biological opinion:

Nationwide Permit Activities:

- (#3) Maintenance
- (#5) Scientific Measuring Devices
- (#6) Survey Activities
- (#7) Outfall Structures
- (#12) Utility Line Discharges
- (#13) Bank Stabilization, provided that activity is less than 50 feet in length
- (#14) Road Crossings
- (#15) U.S. Coast Guard Approved Bridges
- (#17) Hydropower Projects
- (#18) Minor Discharges
- (#19) Minor Dredging
- (#23) Approved Categorical Exclusions
- (#25) Structural Discharges
- (#27) Wetland and Riparian Restoration and Creation Activities

- (#31) Maintenance of Existing Flood Control Facilities
- (#32) Completed Enforcement Actions
- (#33) Temporary Construction, Access and Dewatering
- (#37) Emergency Watershed Protection and Rehabilitation
- (#38) Cleanup of Hazardous and Toxic Waste

Projects that do not qualify for authorization under the Nationwide Permits listed above may be considered for appendage to this programmatic biological opinion on a project-specific basis as long as they satisfy Eligibility Criteria 1 – 6 above.

Minimization of Adverse Effects

The Corps 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. The Corps will ensure that the below measures are incorporated into the applicant's project within the entire action area. Any removal of measures from the project description must be approved by the Service.

1. For any project with permanent impacts to suitable aquatic or upland California red-legged frog habitat within the Corps' permit area, the Corps, through the applicant, will submit an appropriate habitat compensation proposal (described in Mitigation of Adverse Effects below). If appropriate, this may include a restoration, monitoring, and management plan, which will be developed in coordination with the Service. The proposal must be approved by the Service prior to initial ground disturbance.
2. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. The applicant will not begin ground disturbance until they receive written approval from the Service that the biologist is qualified to conduct the work. Biologists approved 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.
3. A Service-approved biologist will survey the project site no more than 48 hours before the onset of work activities. If the Service-approved biologist finds any life stage of the California red-legged frog and these individuals are likely to be killed or injured by work activities, the applicant will allow the Service-approved biologist 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.

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. The Service-approved biologist may use brochures, books, and briefings 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 Service-approved biologist 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 the Corps 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 the engineer stops work, the Service will be notified as soon as possible.
6. During project activities, the applicant will properly contain all trash that may attract predators by removing it from the work site and disposing of it regularly. Following construction, the applicant will remove all trash and construction debris from work areas.
7. Prior to the onset of work, the Corps 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 should a spill occur.
8. The applicant will conduct all refueling, maintenance, and staging of equipment and vehicles 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 Service-approved biologist or biological monitor will ensure contamination of aquatic or riparian habitat does not occur during such operations by implementing the spill response plan described in measure 7.
9. The applicant will limit the number of access routes, size of staging areas, and the total area of the activity to the minimum necessary to achieve the project goals. The applicant will delineate Environmentally Sensitive Areas 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. The Corps will encourage applicants 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 will take place between May 1 and October 31, to the maximum extent practicable, in order to avoid the breeding season of the California red-legged frog. The applicant will avoid isolated pools that are important to maintain California red-legged frogs through the driest portions of the year, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and coordination between the Corps 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. The Service-approved biological monitor will inspect all holes and trenches each morning. A Service-approved biologist will relocate any California red-legged frogs found in a hole or trench.
12. To control sedimentation during and after project implementation, the Corps will require the applicant to 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, as determined by the Service-approved biologist or biological monitor, the Corps will require the applicant to remedy the situation immediately, in coordination with the Service.
13. If a work site is to be temporarily dewatered by pumping, the applicant will completely screen intakes with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. The applicant will release or pump water downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, the applicant will remove any diversions or barriers to flow in a manner that would allow flow to resume with the least disturbance to the substrate. The applicant will minimize alteration of the stream bed to the maximum extent possible and remove any imported material from the stream bed upon completion of the project.
14. Unless approved by the Service, the applicant will not impound water in a manner that may attract California red-legged frogs.
15. Any biologist approved by the Service to conduct activities under this biological opinion will also 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 (<https://fgc.ca.gov/Regulations/Current>).

16. To ensure that diseases are not conveyed between sites, the Service-approved biologist, will follow the fieldwork code of practice developed by the Declining Amphibian Populations Task Force at all times. A copy of the code of practice is enclosed (Appendix B) and will be provided by the Corps with any authorization it issues under this biological opinion.
17. The applicant will develop a habitat restoration plan for areas of temporary disturbance and submit it to the Corps and the Service at least 14 days prior to project initiation. This plan will be developed in coordination with the Service. The applicant will revegetate areas of temporary disturbance within the project site with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. The applicant will use locally collected plant materials to the extent practicable. The applicant will control invasive, exotic plants to the maximum extent practicable. The applicant will monitor the success of revegetation efforts and submit documentation of revegetation success to the Corps and the Service within three years from project initiation. If restoration is not successful after three years, the Service and the Corps will require the applicant to provide compensatory mitigation as a permanent loss, as detailed below in Mitigation of adverse effects. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Corps and the Service determine that it is not feasible or practical.
18. The applicant will return habitat contours 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 the Corps and the Service determine that it is not feasible or modification of original contours would benefit the California red-legged frog.
19. The Corps' authorization will prohibit the use of herbicides as the primary method used to control invasive, exotic plants; however, if the applicant convinces the Corps and the Service that the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, the applicant will implement the following additional protective measures for the California red-legged frog:
 - a. The applicant will not use herbicides during the breeding season for the California red-legged frog.
 - b. The applicant will conduct surveys for the California red-legged frog immediately prior to the start of any herbicide use. If found, a Service-approved biologist will relocate the California red-legged frogs to suitable habitat far enough from the project area that no direct contact with herbicides would occur.
 - c. Any use of glyphosate or glyphosate-based products will be done without polyoxyethyleneamine (POEA) surfactants. Formulations that lack a surfactant

include Rodeo® and Aquamaster®, which have been approved by the U.S. Environmental Protection Agency (EPA), through their registration process, for aquatic use.

- d. The applicant will apply all herbicides at half the maximum rate indicated on the product label, and must maintain a Hazard Quotient of less than or equal to 1. Hazard Quotients can be determined using the Herbicide Risk Charts in the California Invasive Plant Council and Pesticide Research Institute's Best Management Practices (download at <https://www.cal-ipc.org/resources/library/publications/herbicidesandwildlife>, see pp. 22-32). The Service has provided a copy of the practices to the Corps, and the Corps will provide the practices with any authorization it issues under this biological opinion for which herbicides will be used. For assessing risk to amphibians, small birds are used as a surrogate for amphibians in terrestrial phase, and fish as a surrogate for amphibians in egg and larval phase (in accordance with EPA risk assessments). The Hazard Quotient must be less than or equal to 1 for both surrogates.
- e. The applicant will cut and haul out giant reed (*Arundo donax*) and other invasive plants by hand and paint the stems with glyphosate or glyphosate-based products, such as Aquamaster® or Rodeo®.
- f. Licensed and experienced personnel or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands of non-native vegetation occur at an individual project site.
- g. The applicant will take all precautions to ensure that no herbicide is applied to native vegetation.
- h. The applicant will not apply herbicides on or near open water surfaces (no closer than 60 feet from open water).
- i. The applicant will not apply herbicides within 24 hours of forecasted rain.
- j. Application of all herbicides will be done by qualified personnel or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations (with the one exception of applying at half the maximum application rate, as indicated above in measure 18d), 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 EPA's Office of Pesticide Programs, Endangered Species Protection Program county bulletins found at: <https://www.epa.gov/endangered-species>.

- k. The applicant will store, pour, and refill all herbicides, fuels, lubricants, and equipment at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. The Corps will require the applicant to ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the Corps will ensure that the applicant has a plan in place for a prompt and effective response to accidental spills. The applicant will inform all workers of the importance of preventing spills and of the appropriate measures to take should a spill occur.
20. The activities the Service 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 physical and biological features necessary to support the essential life history functions (i.e., reproduction, feeding, and sheltering) of the California red-legged frog.

Mitigation of adverse effects

For all projects appended to this biological opinion that result in permanent losses of suitable California red-legged frog habitat, the Corps will ensure compensatory mitigation is provided through the applicant, as discussed below. Mitigation requirements can be fulfilled through use of the following: (1) Acquire and protect occupied habitat (including a long-term management plan with financial assurances), by itself, or possibly in conjunction with a conservation organization, State park, State Wildlife Area, National Wildlife Refuge, or local regional park; (2) purchase the appropriate number of credits at a Service-approved conservation bank; (3) purchase the appropriate number of credits from an in-lieu fee program; (4) purchase the appropriate credits for a species conservation account; or (5) accomplish habitat restoration in an area suitable to support the California red-legged frog that is otherwise protected (including a long-term management plan with financial assurances). The Service and the Corps will assess and approve the suitability of a proposed site for restoration on a case-by-case basis to ensure the mitigation will benefit the species. The standard compensation ratio for permanent impacts to occupied habitat is 3:1. Additionally, permanent losses of habitat will be compensated for by habitat of equal or higher quality.

The Corps will ensure the applicant provides appropriate compensatory mitigation for projects appended to this programmatic biological opinion. As per the guidance provided in the memorandum regarding compensatory mitigation guidance for California red-legged frog (Service 2017b), the Corps will strive to provide mitigation within the same critical habitat unit and/or recovery core area in which the impact takes place. The Service will consider the proximity of proposed mitigation in relation to the impacts of a project when considering approval of the appropriate compensation ratio.

Due to the large geographical area covered by this biological opinion, mitigation options may vary based on the location of the project. Conservation banks and in-lieu fee programs both have geographic service areas. A project must fall within those service areas in order to be eligible for that given mitigation option, unless specially approved by the Service. The applicant or the Corps should coordinate with the Service to determine the appropriate mitigation options and compensation ratio.

Conservation credits or appropriate habitat obtained by the applicant will consist of the following measures:

1. At least 14 days prior to initiation of project activities, the applicant will acquire habitat occupied by the California red-legged frog or habitat that is important to the species, such as movement corridors, that the Service has concurred in writing is appropriate to offset the impacts. The property will have a conservation easement or other appropriate real estate protection, a management plan, and endowment to manage the habitat in perpetuity. The Service will review and approve all of these documents. The conservation easement will name the Service as a third-party beneficiary and it will be held by an entity qualified to hold conservation easements subject to approval by the Service. The applicant will secure an in-perpetuity endowment to manage the land and monitor the conservation easement using an escrow account or other funding assurance acceptable to and approved by the Service. The Service-approved entity will hold the endowment in an amount agreed to by the Service, with an approved endowment agreement. The applicant will develop a Service-approved management plan prior to initial ground disturbance that will include, but not be limited to; a description of existing habitats and planned habitat creation, restoration and/or enhancement; monitoring criteria for the California red-legged frog; an integrated pest management and monitoring plan to control invasive species; habitat creation, restoration and/or enhancement success criteria; and adaptive management strategies if success criteria are not met or to incorporate new scientific data.

OR

2. The applicant will purchase an appropriate number of credits at a Service-approved conservation bank whose service area includes the action area for the proposed appendage to this programmatic biological opinion, unless otherwise approved by the Service. The applicant will purchase conservation credits and provide documentation to the Service comprising the Agreement for Sale of Conservation Credits, Bill of Sale, Payment Receipt and Updated Credit Ledger prior to initiation of project activities.

OR

3. The applicant will purchase the appropriate credits from a Service-approved in-lieu fee program whose service area includes the action area for the proposed appendage to this programmatic biological opinion, unless otherwise approved by the Service. The

applicant will provide a copy of the signed and dated Certificate of Credit Sale and documentation of fee transfer prior to initiation of project activities.

OR

4. The applicant will provide compensatory mitigation through a Service-approved mitigation and conservation account held in trust by the National Fish and Wildlife Foundation. The account funds will be used to address Service-approved recovery priorities for the California red-legged frog with guidance from the Service. The applicant will make the deposit prior to initiation of project activities and provide copies of Deposit Documents to the Service.

OR

5. The applicant will provide a restoration, monitoring and management plan for a proposed location to the Service and Corps at least 30 days prior to initiating project activities for review and approval. The plan will include, at a minimum, success criteria and information about site preservation and long-term management with financial assurances. The plan may also include removal of invasive species. If the applicant chooses this option, the Corps will work with the Service and applicant to ensure the proposed mitigation is commensurate with project impacts before consultation is formally initiated.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

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

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the rangewide condition of the California red-legged frog, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes 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 all consequences to the California red-legged frog caused by the proposed action that are reasonably

certain to occur in the action area; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the 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 reduce appreciably the likelihood of both the survival and recovery of the California red-legged frog in the wild by reducing the reproduction, numbers, and distribution of that species.

Adverse Modification Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies insure that any action they authorize, fund, or carry out is not likely to destroy or to adversely modify designated critical habitat. A final rule revising the regulatory definition of “destruction or adverse modification” was published on February 11, 2016 (81 FR 7214), which became effective on March 14, 2016. The Service published a subsequent final rule further revising the definition on August 27, 2019 (84 FR 44976), which became effective on October 28, 2019. The revised definition states:

“Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.”

The destruction or adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which describes the rangewide condition of the critical habitat for the California red-legged frog, the factors responsible for that condition, and the intended function of 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 are all consequences to critical habitat caused by the proposed action that are reasonably certain to occur in the action area; and (4) Cumulative Effects, which evaluate the effects of future non-Federal activities in the action area on critical habitat that are reasonably certain to occur.

For the section 7(a)(2) determination regarding destruction or adverse modification, the Service begins by evaluating the effects of the proposed Federal action and the cumulative effects. The Service then examines those effects against the condition of all critical habitat described in the listing designation to determine if the proposed action’s effects are likely to appreciably diminish the value of critical habitat as a whole for the conservation of the species.

STATUS OF THE SPECIES AND ITS CRITICAL HABITAT

California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (61 Federal Register (FR) 25813, Service 1996). Revised critical habitat for the California red-legged frog was designated on March 17, 2010 (75 FR 12816, Service 2010). The Service issued a recovery plan for the species on May 28, 2002 (Service 2002). Detailed information on the biology of California red-legged frogs can be found in Storer (1925), Stebbins (2003), and Jennings et al. (1992). This species is the largest native frog in the western United States, ranging from 1.5 to 5.1 inches long. The abdomen and hind legs of adults are often red or salmon pink; 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. Larvae range from 0.6 to 3.1 inches long and are dark brown and yellow with dark spots.

The California red-legged frog uses a variety of habitat types, including various aquatic systems, riparian, and upland habitats. They have been found at elevations ranging from sea level to approximately 5,000 feet. California red-legged frogs use the environment in a variety of ways, and in many cases, they may complete their entire life cycle in a particular area without using other components (i.e., a pond is suitable for each life stage and use of upland habitat or a riparian corridor is not necessary). Populations appear to persist where a mosaic of habitat elements exists, embedded within a matrix of dispersal habitat. Adults are often associated with dense, shrubby riparian or emergent vegetation and areas with deep (greater than 1.6 feet) still or slow-moving water; the largest summer densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*) (Hayes and Jennings 1988, p. 147). Hayes and Tennant (1985, p. 604) found juveniles to seek prey diurnally and nocturnally, whereas adults were largely nocturnal.

California red-legged frogs breed in aquatic habitats; larvae, juveniles, and adult frogs have been collected from streams, creeks, ponds, marshes, deep pools and backwaters within streams and creeks, dune ponds, lagoons, and estuaries. They frequently breed in artificial impoundments such as stock ponds, given the proper management of hydro-period, pond structure, vegetative cover, and control of exotic predators. While frogs successfully breed in streams and riparian systems, high spring flows and cold temperatures in streams often make these sites risky egg and tadpole environments. An important factor influencing the suitability of aquatic breeding sites is the general lack of introduced aquatic predators. 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.

During periods of wet weather, starting with the first rains of fall, some California red-legged frogs may make long-distance overland excursions through upland habitats to reach breeding

sites. In Santa Cruz County, Bulger et al. (2003, p. 90) found marked California red-legged frogs moving up to 1.7 miles through upland habitats, via point-to-point, straight-line migrations without regard to topography, rather than following riparian corridors. Most of these overland movements occurred at night and took up to 2 months. Similarly, in San Luis Obispo County, Rathbun and Schneider (2001, p. 1302) documented the movement of a male California red-legged frog between two ponds that were 1.78 miles apart in less than 32 days; however, most California red-legged frogs in the Bulger et al. (2003, p. 93) study were non-migrating frogs and remained within 426 feet of their aquatic site of residence (half of the frogs stayed within 82 feet of water). Rathbun et al. (1993, p. 15) radio-tracked three California red-legged frogs near the coast in San Luis Obispo County at various times between July and January; these frogs also stayed close to water and never strayed more than 85 feet into upland vegetation. Scott (2002, p. 2) radio-tracked nine California red-legged frogs in East Las Virgenes Creek in Ventura County from January to June 2001, which remained relatively sedentary as well; the longest within-channel movement was 280 feet and the farthest movement away from the stream was 30 feet.

After breeding, California red-legged frogs often disperse from their breeding habitat to forage and seek suitable dry-season habitat. Cover within dry-season aquatic habitat could include boulders, downed trees, and logs; agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay-ricks, and industrial debris. California red-legged frogs use small mammal burrows and moist leaf litter (Rathbun et al. 1993, p. 15; Jennings and Hayes 1994, p. 64); incised stream channels with portions narrower and deeper than 18 inches may also provide habitat (61 FR 25814). This type of dispersal and habitat use, however, is not observed in all California red-legged frogs and is most likely dependent on the year-to-year variations in climate and habitat suitability and varying requisites per life stage.

Although the presence of California red-legged frogs is correlated with still water deeper than approximately 1.6 feet, riparian shrubbery, and emergent vegetation (Jennings and Hayes 1994, p. 64), California red-legged frogs appear to be absent from numerous locations in its historical range where these elements are well represented. The cause of local extirpations does not appear to be restricted solely to loss of aquatic habitat. The most likely causes of local extirpation are thought to be changes in faunal composition of aquatic ecosystems (i.e., the introduction of non-native predators and competitors) and landscape-scale disturbances that disrupt California red-legged frog population processes, such as dispersal and colonization. The introduction of contaminants or changes in water temperature may also play a role in local extirpations. These changes may also promote the spread of predators, competitors, parasites, and diseases.

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). California red-legged frogs have been found at elevations that range from sea level to about 5,000 feet (61 FR 25813). The California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Historically, this species was present throughout the Central Valley and Sierra Nevada foothills. In the Sierra Nevada Mountains, California red-legged frogs typically

occur below 4,000 feet in elevation (61 FR 25813). California red-legged frogs are known to occur in 243 streams or drainages in 22 counties, primarily in central coastal California. 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 in that area (61 FR 25813). Currently, California red-legged frogs are known from three disjunct regions in 26 California counties and one region in Baja California, Mexico (Grismer 2002, Fidenci 2004, Smith and Krofta 2005).

The most secure aggregations of California red-legged frogs are found in aquatic sites that support substantial riparian and aquatic vegetation and lack non-native predators. 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). Habitat loss and degradation, 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 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, bass (*Micropterus* spp.), mosquitofish, red swamp crayfish, and signal crayfish (*Pacifastacus leniusculus*). 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

The Service first designated critical habitat for the California red-legged frog on March 13, 2001 (66 FR 14626). We revised the designation in a final rule published on March 17, 2010 (75 FR 12816). The final rule describes 48 separate units, encompassing approximately 1,636,609 acres, in 27 counties in California. The designation includes lands supporting those features necessary for the conservation of the California red-legged frog. A detailed discussion of the history and methods used in developing 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 physical or biological features (PBFs), which may require special management considerations or protection. Because not all life-history functions require all the PBFs, not all areas designated as critical habitat will contain all the PBFs. 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 PBFs to consist of: (1) aquatic breeding habitat; (2) aquatic non-breeding habitat; (3) upland habitat; and (4) dispersal habitat. Detailed descriptions of these PBFs can be found in the final rule (75 FR 12816). The PBFs are briefly summarized as:

1. Aquatic breeding habitat consists of standing bodies of fresh water (with salinities less than 4.5 parts 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 species 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 PBF 1, 2, or 3 as essential to the conservation of the species.

Recovery Plan for the California Red-legged Frog

The 2002 final recovery plan for the California red-legged frog states that the goal of recovery efforts is to reduce threats and improve the population status of the California red-legged frog sufficiently to warrant delisting. The recovery plan describes a strategy for delisting, which includes the following actions: (1) Protect known populations and reestablish populations; (2) Protect suitable habitat, corridors, and core areas; (3) Develop and implement management plans for preserved habitat, occupied watersheds, and core areas; (4) Develop land use guidelines; (5) Gather biological and ecological data necessary for conservation of the species; (6) Monitor existing populations and conduct surveys for new populations; and (7) Establish an outreach program. This Service will consider this species for delisting when:

1. Suitable habitats within all core areas are protected and/or managed for California red-legged frogs in perpetuity, and the ecological integrity of these areas is not threatened by adverse anthropogenic habitat modification (including indirect effects of upstream/downstream land uses);

2. Existing populations throughout the range are stable (i.e., reproductive rates allow for long-term viability without human intervention). Population status will be documented through establishment and implementation of a scientifically acceptable population monitoring program for at least a 15-year period, which is approximately 4 to 5 generations of the California red-legged frog. This 15-year period should coincide with an average precipitation cycle;
3. Populations are geographically distributed in a manner that allows for the continued existence of viable metapopulations despite fluctuations in the status of individual populations (i.e. when populations are stable or increasing at each core area);
4. The species is successfully reestablished in portions of its historical range such that at least one reestablished population is stable/increasing at each core area where California red-legged frog are currently absent; and
5. The amount of additional habitat needed for population connectivity, recolonization, and dispersal has been determined, protected, and managed for California red-legged frogs.

The recovery plan identifies eight recovery units based on the assumption that various regional areas of the species' range are essential to its survival and recovery. The Service considers the recovery status of the California red-legged frog within the smaller scale of recovery units as opposed to the overall range. These recovery units correspond to major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit.

Within each recovery unit, the Service has delineated core areas that represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that combined with suitable dispersal habitat, will support long-term viability within existing populations. This management strategy allows for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of the California red-legged frog.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) (50 CFR 402.02) define the environmental baseline as "the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early

section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.”

Action Area

The implementing regulations for section 7(a)(2) of the Act (50 CFR 402.02) 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. The action area for this biological opinion includes all areas within the responsibility of the VFWO in Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties that support the California red-legged frog, or its critical habitat, and that have the potential to be affected directly or indirectly by projects authorized or funded by the Corps.

There are no areas within VFWO jurisdiction that are not within a recovery unit. All or portions of the following three recovery units, as defined in the recovery plan for the California red-legged frog (Service 2002, p. 49), 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, p. 9).

The Northern Transverse Ranges and Tehachapi Mountains Recovery Unit includes Santa Barbara and Ventura Counties and portions of San Luis Obispo County. 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.

Condition (Status) of Critical Habitat in the Action Area

There are twenty-two critical habitat units, totaling approximately 876,384 acres within the action area. These critical habitat units occur in Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties. Detailed descriptions of the critical habitat units and the physical and biological features important to the conservation of the California red-legged frog are available in the final rule 75 FR 12816. The map in Appendix C depicts the twenty-two critical habitat units included in this biological opinion.

Critical habitat for the California red-legged frog is threatened by many of the same factors that the Recovery Plan identifies as threatening California red-legged frog habitat in general. These threats include habitat degradation or loss from: agriculture, non-native species, livestock operations, mining, human recreation, timber harvest, urbanization, and water management or diversion projects. Not all of these factors threaten each critical habitat unit. Based on section 7 consultations from the VFWO from 1999 to present, water diversion, agriculture, and urbanization present the most prevalent threats to California red-legged frog habitat. We would expect these threats to also impact critical habitat resulting in loss, fragmentation, or degradation, however, we cannot quantify the extent of these threats at this time.

According to the Protected Areas Database of the United States, approximately 431,530 acres of critical habitat are protected as open space or resource lands for the preservation of biological diversity, and other natural, recreational or cultural uses (USGS 2016). This includes lands owned in fee by agencies and non-profits, such as national and State parks, forests, preserves and wildlife areas. These designations may provide some level of protection against certain threats (e.g. urbanization, mining), but do not guarantee that these areas are managed to maintain or improve the PBFs of California red-legged frog critical habitat.

EFFECTS OF THE ACTION

Effects of the Proposed Action on the California Red-legged Frog

The implementing regulations for section 7(a)(2) define effects of the action as “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action” (50 CFR 402.02).

The Corps will ensure the applicants mitigate for permanent habitat loss with in-perpetuity preservation and/or restoration of appropriate amounts of California red-legged frog habitat. Preservation of high value habitat through a conservation bank, in-lieu fee program, or species conservation account will allow for the permanent protection, long-term management, and enhancement of habitat for the California red-legged frog, which will contribute to the recovery of the species. In some cases, the applicant may choose to use a site they acquire, which would need to be protected in perpetuity and be managed for the benefit of the frog. In addition, for small in-stream impacts revegetation/restoration of the site may be appropriate and this may benefit the species by improving the functions of the habitat. We anticipate that this mitigation, combined with the implementation of the other conservation measures described, will offset the adverse effects resulting from project-related habitat modification or loss.

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 the Corps, 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 unknowingly releasing them into unsuitable habitat. Use of a Service-approved biologist would reduce or prevent the improper handling, containment, or transport of individuals. 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 strikes. Relocating California red-legged frogs within the same drainage or water body, if possible, will reduce this threat. Overall, relocation by a Service-approved biologist as proposed by the Corps 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 dewater work areas; however, the Corps will condition its authorization or 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 2002, pp. 26-27). 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. The Corps 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; and restoring disturbed areas with native species. These measures should reduce or eliminate this adverse effect.

If herbicides are used to control weeds in conjunction with proposed activities, California red-legged frog eggs, tadpoles, juveniles and adults could be exposed as a non-target species. California red-legged frogs could be exposed in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. The principle herbicide likely to be used would be glyphosate, and the applicant would use formulations that do not contain polyoxyethyleneamine (POEA) surfactants.

Glyphosate is a broad-spectrum herbicide used primarily to kill weeds and grasses. Several studies suggest that the toxicity of glyphosate products to amphibians is linked with the surfactant, and not the glyphosate. Howe et al. (2004, pp.1932-1933) found that the toxicity of glyphosate with POEA, a surfactant used as a wetting agent and emulsifier, was similar to the POEA surfactant alone, which was much greater than glyphosate alone, indicating that the POEA was responsible for the toxic effects to amphibians. In a comprehensive review of studies involving the effects of glyphosate on amphibians, Govindarajulu (2008, p. 31) 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. 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 EPA, through their registration process, for aquatic use.

The protective measures proposed by the Corps, 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. The Corps will ensure any herbicides are applied at half the maximum rate indicated on the label, and maintain a hazard quotient of less than or equal to one. According to the California Invasive Plant Council Best Management Practices, a hazard quotient of less than or equal to one should have no effect on California red-legged frogs.

If water that is impounded during or after work activities creates favorable habitat conditions for non-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, predators such as herons, egrets, 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. The Corps' 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 the Corps.

Chytridiomycosis is an infectious disease that affects amphibians worldwide, and is caused by the chytrid fungus. Chytrid fungus (*Batrachochytrium dendrobatidis*) is a water-borne fungus that can 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 chytrid fungus infects a pond or waterway, the fungus stays in the water for an undetermined amount of time. Chytrid fungus could 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. The Corps proposes to require biologists to implement the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (Appendix B), 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 the Corps' 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 the Corps' proposal to require 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 the Corps, will assist in reducing the amount of sediment that is washed downstream, as a result of project activities.

The Corps has proposed numerous measures that will reduce the injury and mortality of California red-legged frogs as a result of project activities. We expect that few California red-legged frogs would be injured or killed in any given year, and these losses are not likely to compromise the recovery of the species.

Effects of the Proposed Action on Critical Habitat for the California Red-legged Frog

Actions conducted pursuant to this biological opinion may be located within any one of the 22 aforementioned critical habitat units, which total approximately 876,384 acres. The PBFs 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 PBFs 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 PBFs from supporting the essential life history functions of the California red-legged frog. For example, a culvert replaced due to storm damage may have a slightly larger footprint 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 the Corps 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 critical habitat (a maximum of 2 acres in any given year or 15 acres over the 10-year life of this biological opinion), and temporary disturbance of critical habitat (a maximum of 4 acres in any given year, or 20 acres total over the 10-year life of this biological opinion) would be spread across 22 critical habitat units in which the proposed activities in this biological opinion would be implemented. We expect the PBFs 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 because the relatively small amount of disturbance or loss of aquatic, upland, and dispersal habitat would be distributed across a wide geographic area and throughout the 10-year life of the biological opinion. Furthermore, areas of temporary disturbance are likely to recover within a few years, and the minimal permanent losses of habitat will be compensated for by habitat of equal or higher quality.

The protective measures included in the Description of the Proposed Action section of this biological opinion would minimize adverse effects to the PBFs 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 the Corps would require, we anticipate that the effects to critical habitat for the California red-legged frog would not appreciably diminish the value of a critical habitat unit for supporting the PBFs 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. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act. At this time, we are unaware of any future non-Federal actions that are reasonably certain to occur within the action area.

CONCLUSION

California Red-legged Frog and Jeopardy

The regulatory definition of “to jeopardize the continued existence of the species” focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the California red-legged frog’s status as the basis to assess the overall effect of the proposed action on the species.

Reproduction

The loss of reproductive individuals, eggs and larvae, and breeding habitat could lower the reproductive capacity of a local population. We expect such effects to be minor because measures the Corps has proposed to avoid and minimize effects on individual California red-legged frogs and their habitat would be effective. In particular, a Service-approved biologist will capture and relocate individuals to suitable habitat, which will greatly reduce the number of individuals removed from the breeding population through injury or mortality. As such, we expect minimal impacts to breeding California red-legged frogs locally and conclude that the proposed action will not appreciably reduce the reproduction of the species locally or rangewide.

Numbers

California red-legged frogs may be injured or killed as a result of activities authorized by the Corps pursuant to this programmatic opinion. However, we expect those numbers to be low due to the measures proposed by the Corps to avoid and minimize the number of California red-legged frogs injured or killed as a result of project activities. These measures include capture and relocation of California red-legged frogs out of harm’s way, which will further reduce the number of individuals affected by project activities. We conclude that loss of small numbers of individuals, which may occur as a result of actions covered by this programmatic opinion would not appreciably reduce the local or rangewide population of the California red-legged frog.

Distribution

Individual actions proposed to be covered by this programmatic consultation would affect only a small amount of the California red-legged frog habitat available. Even combined, these areas would constitute a small percentage of the habitat available in the California red-legged frog's geographic range. The Corps would require mitigation to compensate for permanent losses of habitat, which we anticipate will help maintain the California red-legged frog's distribution and may increase the total amount of protected habitat available to the species. We conclude that actions proposed to be covered by this programmatic opinion will not appreciably reduce the distribution of the California red-legged frog rangewide.

Recovery

As discussed in the Status of the Species section, the 2002 recovery plan for the California red-legged frog states that the goal of recovery efforts is to reduce threats and improve the population status of the California red-legged frog sufficiently to warrant delisting. While actions proposed to be covered by the programmatic opinion would have some negative effects on California red-legged frogs and their habitat, we do not expect that these activities will diminish the likelihood of the species' recovery because the effects would be small, and the proposed measures would reduce impacts to individuals and habitat. Also, the Corps would require mitigation to compensate for permanent losses and these mitigation efforts are intended to contribute to the California red-legged frog's recovery.

After reviewing the current status of the California red-legged frog, the environmental baseline for the action area, the effects of the 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 Corps' proposed actions pursuant to this program are not likely to jeopardize the continued existence of the California red-legged frog.

Critical Habitat and Destruction or Adverse Modification

As discussed earlier, "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species." In making our conclusion, we focus on how the proposed actions affect the quantity and quality of the physical or biological features in the designated critical habitat for a listed species and, especially in the case of unoccupied habitat, on any impacts to the critical habitat itself. Specifically, the Service will generally conclude that a Federal action is likely to "destroy or adversely modify" designated critical habitat if the action results in an alteration of the quantity or quality of the essential physical or biological features of designated critical habitat, or that precludes or significantly delays the capacity of that habitat to develop those features over time, and if the effect of the alteration is to appreciably diminish the value of critical habitat as a whole for the conservation of the species.

We conclude that the sum of the actions likely to be authorized by the Corps pursuant to this biological opinion is not likely to destroy or adversely modify critical habitat for the California red-legged frog. We have based this conclusion on the following: The activities likely to be covered by this consultation would be small; the Corps' proposed measures would mostly avoid and minimize effects to critical habitat; the Corps, through the applicant, would compensate for permanent loss of critical habitat in perpetuity through mitigation; and on-site restoration would minimize the temporary loss of critical habitat. Although the proposed action may negatively affect the PBFs of critical habitat, these effects will not prevent critical habitat from providing essential life functions for the California red-legged frog. All critical habitat units will retain their PBFs, and the PBFs within each critical habitat unit will remain functional. Thus, we have determined that implementation of the activities covered by this biological opinion would not appreciably diminish the value of critical habitat for the conservation of the species.

After reviewing the current status of the critical habitat of California red-legged frog, the environmental baseline of critical habitat for the action area, the effects of the projects that could be authorized under the provisions of this programmatic biological opinion on critical habitat, and the cumulative effects, it is the Service's biological opinion that the actions are not likely to result in the destruction or adverse modification of California red-legged frog critical habitat.

Summary Conclusion

We have reached these conclusions because:

1. The notification process described previously allows us to review each proposed action to determine if it 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. The Corps will ensure, through the applicant, that permanent loss of habitat will be compensated for by habitat of equal or higher quality.
4. The Corps will ensure, through the applicant, the on-site restoration and monitoring of temporary losses of California-red legged frog habitat.
5. In comparison with the amount of critical habitat available to the California red-legged frog in San Benito, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, only a small amount of critical habitat would be permanently lost within each critical habitat unit and relative to the entire critical habitat designation.
6. Although we anticipate that some minor or temporary adverse effects to the PBFs in each of the critical habitat units within the scope of this opinion may occur, we do not anticipate effects of this nature to preclude those PBFs 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. We conclude this because the Corps has established a limit of affected acres of habitat types that comprise the PBFs, and that reaching this limit will trigger reinitiation of formal consultation.

7. The Corps has proposed numerous measures that would be effective at reducing 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 wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

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

AMOUNT OR EXTENT OF TAKE

We anticipate that some California red-legged frogs could be taken as a result of the proposed action. We expect the incidental take to be in the form of capture, injury, and mortality. We cannot quantify the precise number of California red-legged frogs that may be taken as a result of proposed activities authorized by the Corps because California red-legged frogs move over time; for example, animals may have entered or departed the action area since the time of pre-construction surveys. Other individuals may not be detected due to their cryptic nature, small size, and low mobility. The protective measures proposed by the Corps, including Service-approved biologists relocating frogs out of harm's way into suitable habitat, are likely to prevent mortality or injury of most individuals.

Similarly, for estimating the number of California red-legged frogs that would be taken by capture, we cannot predict how many may be encountered for reasons stated earlier. While the benefits of relocation (i.e., minimizing mortality) outweigh the risk of capture, we must provide a limit for take by capture at which consultation would be reinitiated because high rates of capture may indicate that some important information about the species' in the action area was not apparent (e.g., it is much more abundant than thought). Conversely, because capture and relocation can be highly variable, depending upon the species and the timing of the activity, we do not anticipate a number so low that reinitiation would be triggered before the effects of the activity were greater than what we determined in the Effects Analysis.

Consequently, we are unable to reasonably anticipate the actual number of California red-legged frogs that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to California red-legged frogs would likely be low given the nature of the proposed activities, and we, therefore, anticipate that take of California red-legged frogs would also be low. We also recognize that for every California red-legged frog found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level. The Corps must contact our office immediately to reinitiate formal consultation in the event any of the following limits are reached as a result of projects conducted under the provisions of this consultation:

- a. 10 California red-legged frog adults or juveniles, or 5 egg masses, or 50 tadpoles have been killed or injured in any given year;
- b. 50 California red-legged frog adults or juveniles, or 25 egg masses, or 250 tadpoles have been killed or injured in total at any point in the 10-year duration of this biological opinion; and
- c. 150 California red-legged frog adults or juveniles, 75 egg masses, or 750 tadpoles have been captured in total at any point in the 10-year duration of this biological opinion.

Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary, and must be undertaken by the Corps or made binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the

terms and conditions or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or applicant must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the impacts of the incidental take of California red-legged frog:

1. The Service-approved biologist(s) must identify suitable habitat to receive relocated California red-legged frogs prior to the onset of project activities.

TERMS AND CONDITIONS

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

1. The following terms and conditions implement reasonable and prudent measure 1:
 - a. Prior to the onset of grading and construction activities, a Service-approved biologist must identify appropriate areas to receive relocated California red-legged frog adults, juveniles, tadpoles, and egg masses 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.
 - b. If the affected aquatic habitat includes a creek or river system, the relocation site must be within the same drainage.
 - c. If the affected aquatic habitat includes a pond or other isolated water body, the Corps must receive the Service's approval, in writing, prior to relocating any California red-legged frogs.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), the Corps or applicant must provide a written report to the Service within 90 days following completion of each project appended to this programmatic biological opinion. The report must state the number and life stage (egg mass, tadpole, juvenile, or adult) of California red-legged frogs killed or injured, and describe the circumstances of the mortalities or injuries, if known. The report must contain the following information: (1) the type

of activities that occurred in the action area (e.g., construction activities, monitoring); (2) the location of the activities; (3) a brief description of the habitat in which the activities occurred; (4) the acreage of permanent and temporary impacts of the project; (5) the number of California red-legged frogs captured and relocated; (6) the locations from which California red-legged frogs were moved and where they were relocated to; (7) the results of any surveys conducted for any listed species; (8) an analysis of the effectiveness of the avoidance and minimization measures and recommendations for future measures; (9) receipt or description of completed mitigation; (10) the names of individuals that served as biologist and biological monitor for the project and; (11) any other relevant information. This report does not replace the report required immediately upon the take of California red-legged frog as described in the next section.

Additionally, the Corps will submit to the Service an annual summary report by January 31 of each year to include: (1) the reference number for this programmatic biological opinion (08EVEN00-2020-F-0226); (2) confirmation that a project completion report has been completed for each project appended to this biological opinion within the last calendar year; (3) the total number of each life stage of California red-legged frogs taken within the last calendar year; (4) the total cumulative of each life stage taken under the 10-year term of the PBO; (5) the total number of acres of critical habitat temporarily and permanently lost within the calendar year; (6) the total number of acres of critical habitat temporarily and permanently lost within the 10-year term of the PBO; and (7) the total number of acres of habitat protected and/or restored as a result of mitigation (proposed in Mitigation of Adverse Effects under Description of Proposed Action) within the 10-year term of the PBO.

DISPOSITION OF DEAD OR INJURED SPECIMENS

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

The Corps or the project applicant must take care in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The Corps or the project applicant must transport injured animals to a qualified veterinarian. Should any treated California red-legged frogs survive, the Corps or the project applicant must contact the Service regarding the final disposition of the animal(s).

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: Lauren Scheinberg, Collections Manager, California Academy of Sciences Herpetology Department, 55 Music Concourse Drive, San Francisco, California 94118, Phone: (415) 379-5292, Email: herpetology@calacademy.org).

The remains of California red-legged frogs found in San Luis Obispo, Santa Barbara, or Ventura 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, Phone: (805) 682-4711, extension 321).

The Corps 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 encourage the Corps, biological consultants, and/or other researchers to participate in and support 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 the Corps to coordinate with the Service and the California Department of Fish and Wildlife to develop research proposals under the Service's Endangered Species Conservation Grants (Section 6 Traditional) Program.
2. We encourage the Corps to work with the applicant to report sightings of western spadefoot toad (*Spea hamondii*) and foothill yellow-legged frogs (*Rana boylei*) to the Service, should they occur within project boundaries. These species are known to occupy similar habitat to California red-legged frogs. We recommend the Corps work with the applicant to reduce project-related impacts to these species. Reporting sightings and reducing impacts will contribute to conservation of these at-risk species and may preclude the need for listing in the future.

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

REINITIATION NOTICE

This concludes formal consultation on projects funded or approved by the Corps that are likely to adversely affect the California red-legged frog and its 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 retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the

agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Danielle Fagre of my staff at 805-677-3339, or by electronic mail at danielle_fagre@fws.gov.

Sincerely,

Stephen P. Henry
Field Supervisor

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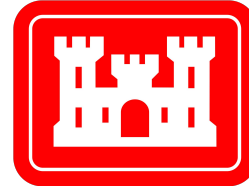
APPENDIX A

Informal consultation form

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**U.S. Army Corps of Engineers
Programmatic Informal Section 7 Form
for California Red-legged Frog**



TAILS #

Date Received

Project Information

All projects appended to the Programmatic Informal Concurrence (FWS# 2020-I-0292) must meet the following criteria: 1.) California red-legged frogs are not known to occur at the proposed project site, but the potential exists for them to be present. 2.) Any effects to the California red-legged frog and its critical habitat must be discountable, insignificant, or completely beneficial. 3.) The applicant must implement measures to avoid adverse effects to the California red-legged frog and its critical habitat, as detailed in the Programmatic Informal Concurrence. See the Programmatic Informal Concurrence (pp. 2-6) for details on these criteria.

Originating, Office

Originating, Person and Title

Telephone Number

Email Address

Project Name

Expected Start Date Expected End Date

Project Coordinates (eg: 45.4591° N, -123.8442° W) – Attach relevant maps

Description of the Proposed Action

Are California red-legged frogs known to occur in the action area? Attach supporting information. Yes: No:

Would the project take place, fully or in part, within critical habitat for California red-legged frogs? Yes: No:

The Army Corps of Engineers' jurisdiction is defined as the boundaries of the project work in the Waters of the United States, plus an additional 50-foot buffer, unless otherwise defined by the Army Corps of Engineers on a project-specific basis. If any changes have been made to the jurisdiction for this project, please describe below:

Condition of Habitat in Action Area

Effects of the Action on California Red-legged Frogs and/or Their Critical Habitat

List of Attachments

Service Assessment

We concur with your determination

More information is needed

We do not concur with your determination

Remarks (attach additional information as needed)

Description of additional information needed:

Electronic Signatures & Authorizations

The following individuals have reviewed the Informal Section 7 Form for accuracy and compliance with the Endangered Species Act and approve implementation of the project as described here in.

Corps Official's Title and Office: Date

Assistant Field Supervisor Date
Ventura Field Office
US Fish and Wildlife Service

APPENDIX B

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 work site.
2. 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.
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 "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.
4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable vinyl¹ 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.
5. 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.
6. 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.
7. 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.

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

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

APPENDIX C



U.S. Fish & Wildlife Service

California Red-legged Frog Critical Habitat Units Within VFWO Jurisdiction

