

## APPENDIX B

### MITIGATION MEASURES, MONITORING AND REPORTING PROGRAM FOR THE 2011 FISHERIES RESTORATION GRANT PROGRAM

#### **SECTION 1: MITIGATION**

##### **I. AESTHETICS**

No specific mitigation measures are required to protect aesthetics.

##### **II. AGRICULTURE RESOURCES**

No specific mitigation measures are required to protect agricultural resources.

##### **III. AIR QUALITY**

No specific mitigation measures are required to protect air quality.

##### **IV. BIOLOGICAL RESOURCES**

###### **A. General Measures for Protection of Biological Resources**

- 1) Timing. To avoid impacts to aquatic habitat the activities carried out in the restoration program typically occur during the summer dry season where flows are low or streams are dry.
  - a) Work around streams is restricted to the period of June 15 through November 1 or the first significant rainfall, whichever comes first. This is to take advantage of low stream flow and avoid the spawning and egg/alevin incubation period of salmon and steelhead.
  - b) Upslope work generally occurs during the same period as stream work. Road decommissioning and other sediment reduction activities are dependent on soil moisture content. Upslope projects do not have seasonal restrictions in the Incidental Take Statement but work may be further restricted at some sites to allow soils to dry out adequately. In some areas equipment access and effectiveness is constrained by wet conditions.
  - c) The approved work window for individual work sites will be further constrained as necessary to avoid the nesting or breeding seasons of birds and terrestrial animals. At most sites with potential for raptor (including northern spotted owls) and migratory bird nesting, if work is conditioned to start after July 9, potential impacts will be avoided and no surveys will be required. For work sites that might contain nesting marbled murrelets, the starting date will be September 16 in the absence of surveys. The work window at individual work sites could be advanced if surveys determine that nesting birds will not be impacted.
  - d) For restoration work that may affect swallow nesting habitat (such as removal or modification of bridges, culverts or other structures that show evidence of past swallow nesting activities), construction shall occur after August 31 to avoid the swallow nesting period. Suitable nesting habitat shall be netted prior to the breeding season to prevent nesting. Netting shall be installed before any nesting activity

begins, generally prior to March 1. Swallows shall be excluded from areas where construction activities cause nest damage or abandonment.

- e) All project activities shall be confined to daylight hours.
- 2) Projects shall not disturb or dewater more than 500 feet of contiguous stream reach.
- 3) During all activities at project work sites, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
- 4) Staging/storage areas for equipment, materials, fuels, lubricants, and solvents, will be located outside of the stream's high water channel and associated riparian area where it cannot enter the stream channel. Stationary equipment such as motors, pumps, generators, compressors, and welders located within the dry portion of the stream channel or adjacent to the stream, will be positioned over drip-pans. Vehicles will be moved out of the normal high water area of the stream prior to refueling and lubricating. The grantee shall ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, DFG shall ensure that the grantee has prepared a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
- 5) The number of access routes, number and size of staging areas, and the total area of the work site activity shall be limited to the minimum necessary to complete the restoration action while minimizing riparian disturbance without affecting less stable areas, which may increase the risk of channel instability. Existing roads shall be used to access work sites as much as practicable.
- 6) The access and work area limits shall be identified with brightly colored flagging or fencing. Flagging and fencing shall be maintained in good repair for the duration of project activities. All areas beyond the identified work area limits shall not be disturbed.
- 7) Any construction debris shall be prevented from falling into the stream channel. Any material that does fall into a stream during construction shall be immediately removed in a manner that has minimal impact to the streambed and water quality.
- 8) Where feasible, the construction shall occur from the bank, or on a temporary pad underlain with filter fabric.
- 9) Any work within the stream channel shall be performed in isolation from the flowing stream and erosion protection measures shall be in place before work begins.
  - a) Prior to dewatering, the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic invertebrates shall be determined.
  - b) If there is any flow when work will be done, the grantee shall construct coffer dams upstream and downstream of the excavation site and divert all flow from upstream of the upstream dam to downstream of the downstream dam.
  - c) No heavy equipment shall operate in the live stream, except as may be necessary to construct coffer dams to divert stream flow and isolate the work site.
  - d) Cofferdams may be constructed with clean river run gravel or sand bags, and may be sealed with sheet plastic. Upon project completion, sand bags and any sheet plastic

shall be removed from the stream. Clean river run gravel may be left in the stream channel, provided it does not impede stream flow or fish passage, and conforms to natural channel morphology without significant disturbance to natural substrate.

- e) Dewatering shall be coordinated with a qualified fisheries biologist to perform fish and amphibian relocation activities.
  - f) The length of the dewatered stream channel and the duration of the dewatering shall be kept to a minimum and shall be expected to be less than 300 contiguous feet or 500 total feet per site.
  - g) When bypassing stream flow around work area, stream flow below the construction site shall be maintained similar to the unimpeded flow at all times.
  - h) The work area shall be periodically pumped dry of seepage. Pumps shall be placed in flat areas, away from the stream channel. Pumps shall be secured by tying off to a tree or staked in place to prevent movement by vibration. Pump intakes shall be covered with 0.125 inch mesh to prevent entrainment of fish or amphibians that failed to be removed. Pump intakes shall be periodically checked for impingement of fish or amphibians, and shall be relocated according to the approved measured outlined for each species bellow.
  - i) If necessary, flow shall be diverted around the work site, either by pump or by gravity flow, the suction end of the intake pipe shall be fitted with fish screens meeting DFG and NOAA criteria to prevent entrainment or impingement of small fish. Any turbid water pumped from the work site itself to maintain it in a dewatered state shall be disposed of in an upland location where it will not drain directly into any stream channel.
  - j) Fish shall be excluded from the work area by blocking the stream channel above and below the work area with fine-meshed net or screen. Mesh shall be no greater than 1/8-inch diameter. The bottom edge of the net or screen shall be completely secured to the channel bed to prevent fish from reentering the work area. Exclusion screening shall be placed in areas of low water velocity to minimize fish impingement. Screens shall be regularly checked and cleaned of debris to permit free flow of water.
- 10) Where the disturbance to construct coffer dams to isolate the work site would be greater than to complete the action (for example, placement of a single boulder cluster), the action shall be carried out without dewatering and fish relocation. Furthermore, measures shall be put in place immediately downstream of the work site to capture suspended sediment. This may include installation of silt catchment fences across the stream, or placement of a filter berm of clean river gravel. Silt fences and other non-native materials will be removed from the stream following completion of the activity. Gravel berms may be left in the stream channel provided it does not impede stream flow or fish passage, and conforms to natural channel morphology without significant disturbance to natural substrate.
- 11) Best management practices associated with fish screens and measures to minimize effects to salmonids associated with fish screen construction, maintenance, and repair are presented below:
- a) Screening projects shall only take place on diversions with a capacity of 60 cfs or less. Screening larger diversions shall require separate consultation. Fish screens shall be operated and maintained in compliance with current law, including Fish and Game Code, and DFG fish screening criteria. DFG screening criteria may be referenced on the Internet at:  
[http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin\\_ScreenCriteria.asp](http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp).

- b) Notwithstanding Fish and Game Code section 6027, fish screens and bypass pipes or channels shall be in-place and maintained in working order at all times water is being diverted.
- c) If a screen site is dewatered for repairs or maintenance when targeted fish species are likely to be present, measures shall be taken to minimize harm and mortality to targeted species resulting from fish relocation and dewatering activities. The responsible party shall notify DFG before the project site is de-watered and streamflow diverted. The notification shall provide a reasonable time for personnel to supervise the implementation of a water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires site dewatering and fish relocation, the responsible party shall implement the dewatering and relocation measures as described in this document to minimize harm and mortality to listed species.
- d) If a fish screen is removed for cleaning or repair, measures shall be undertaken to ensure juvenile fish are not passively entrained into the diversion canal. The area shall be isolated, cleared of fish, and dewatered prior to screen maintenance or replacement. If dewatering the work area is infeasible, then the area in front of the screen shall be cleared of fish utilizing a seine net that remains in place until the project is complete. In the case of a damaged screen, a replacement screen shall be installed immediately or the diversion shut down until a screen is in place.
- e) Fish screens shall be inspected and maintained regularly (not less than two times per week) to ensure that they are functioning as designed and meeting DFG fish screening criteria. During the diversion season, screens shall be visually inspected while in operation to ensure they are performing properly. Outside the diversion season when the screening structure is dewatered, the screen and associated diversion structure shall be more thoroughly evaluated.
- f) Existing roads shall be used to access screen sites with vehicles and/or equipment whenever possible. If it is necessary to create access to a screen site for repairs or maintenance, access points shall be identified at stable stream bank locations that minimize riparian disturbance.
- g) Sediment and debris removal at a screen site shall take place as often as needed to ensure that screening criteria are met. Sediment and debris shall be removed and disposed at a location where it will not re-enter the water course.
- h) Stationary equipment used in performing screen maintenance and repairs, such as motors, pumps, generators, and welders, located within or adjacent to a stream shall be positioned over drip pans.
- i) Equipment which is used to maintain and/or repair fish screens shall be in good condition and checked and maintained on a daily basis to prevent leaks of materials that could be deleterious to aquatic life, wildlife, or riparian habitat.
- j) To the extent possible repairs to a fish screen or screen site shall be made during a period of time when the target species of fish are not likely to be present (for example, in a seasonal creek, repair work should be performed when the stream is dry).
- k) Equipment used to maintain and/or repair fish screens shall not operate in a flowing stream except as may be necessary to construct coffer dams to divert stream flow and isolate the work site.

- l) Turbid water which is generated by screen maintenance or repair activities shall be discharged to an area where it will not re-enter the stream. If the DFG determines that turbidity/siltation levels resulting from screen maintenance or repair activities constitute a threat to aquatic life, all activities associated with the turbidity/siltation shall cease until effective DFG-approved sediment control devices are installed and/or abatement procedures are implemented.
- 12) Any equipment entering the active stream (for example, in the process of installing a coffer dam) shall be preceded by an individual on foot to displace wildlife and prevent them from being crushed.
- 13) If any non-special status wildlife are encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed, and shall be flushed, hazed, or herded in a safe direction away from the project site. "Special status wildlife" is defined as any species that meets the definition of "endangered, rare, or threatened species" in section 15380, article 20 in Title 14 of the California Code of Regulations, also known as the "CEQA Guidelines".
- 14) Any red tree vole nests encountered at a work site shall be flagged and avoided during construction.
- 15) For any work sites containing western pond turtles, salamander, foothill yellow-legged frogs or tailed frogs, the grantee shall provide to the DFG grant manager for review and approval, a list of the exclusion measures that will be used at their work site to prevent take or injury to any individual pond turtles, salamanders, or frogs that could occur on the site. The grantee shall ensure that the approved exclusion measures are in place prior to construction. Any turtles or frogs found within the exclusion zone shall be moved to a safe location upstream or downstream of the work site, prior to construction.
- 16) All habitat improvements shall be done in accordance with techniques in the *California Salmonid Stream Habitat Restoration Manual*. The most current version of the manual is available at: <http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp>
- 17) The grantee shall have dependable radio or phone communication on-site to be able to report any accidents or fire that might occur.
- 18) Installation of bridges, culverts, or other structures shall be done so that water flow is not impaired and upstream and downstream passage of fish is assured at all times. Bottoms of temporary culverts shall be placed at or below stream channel grade.
- 19) Temporary fill shall be removed in its entirety prior to close of work-window.

## **B. Specific Measures for Endangered, Rare, or Threatened Species That Could Occur at Specific Work Sites**

### **1) Rare Plants**

The work sites for the 2011 grants projects are within the range of a variety of rare plant species. The plant species found on a State or Federal special status list that might be associated with the 2011 grants projects, was determined from a search of DFG's Natural Diversity Database. Because of the large number of widely scattered work sites proposed, it is not feasible to survey individual work sites in advance and still be able to implement the restoration projects, due to time limits on the availability of restoration funds. Lists of special status plant species that might occur at individual work sites are presented in Appendix A. Past experience with grants projects from previous years has

shown that the potential for adverse impacts on rare plants at salmonid restoration work sites is very low. Few sites surveyed for rare plants between 1999 and 2010 were found to have rare plant colonies; disturbance of rare plants was avoided in all cases. In order to avoid impacts to rare plants during the 2011 grants projects, the following mitigation measures will be implemented:

- a) DFG shall survey all work sites for rare plants prior to any ground disturbing activities. Rare plant surveys will be conducted following the “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (DFG, 2009). These guidelines are available in Appendix C or on the web at: <http://www.dfg.ca.gov/habcon/plant/>.
- b) If any special status plant species are identified at a work site, DFG shall require one or more of the following protective measures to be implemented before work can proceed:
  - 1) Fencing to prevent accidental disturbance of rare plants during construction,
  - 2) On-site monitoring by a qualified biologist during construction to assure that rare plants are not disturbed, and
  - 3) Redesign of proposed work to avoid disturbance of rare plants.
- c) If it becomes impossible to implement the project at a work site without potentially significant impacts to rare plants, then activity at that work site shall be discontinued.
- d) DFG shall ensure that the grantee or responsible party is aware of these site-specific conditions, and shall inspect the work site before, during, and after completion of the action item.

## **2) California freshwater shrimp (*Syncaris pacifica*)**

Of the 54 work sites proposed as part of the 2011 grants program, nine occur within the range of California freshwater shrimp (CFS) (723671 Riparian and Floodplain Habitat Restoration for Coho Recovery along Lagunitas and San Geronimo Creeks, 723567 Purrington Creek Fish Passage Project, 723568 Dutch Bill Creek Sediment Source Reduction Project, 723596 Salmon Creek Roads Implementation Project Phase II, 723617 Green Valley Creek Channel Stabilization and Coho Habitat Enhancement Project, 723638 Green Valley Creek Roads Implementation Project-Phase II, 723651 Austin Creek Sediment Source Reduction Implementation Project, Phase 1, 723652 Salt Creek Stream Habitat Restoration Project, and 723670 Redwood Creek Passage Barrier Removal) (Appendix A). The range of the CFS includes Marin, Napa, and Sonoma counties, excluding the Gualala River watershed. Therefore, the potential for impacts to CFS shall be mitigated by complying with all of the mandatory terms and conditions associated with incidental take authorized by the U. S. Fish and Wildlife Service (Service), Biological Opinions (file no. 1-1-03-F-273 and 81420-2009-I-0748-1). DFG proposes to implement the following measures to minimize adverse effects to the CFS and its habitat:

- a) Project activities in potential shrimp habitat shall be restricted to the period between July 1 and November 1.
- b) At least 15 days prior to the onset of activities, DFG shall submit the name(s) and credentials of biologists who will conduct activities specified in the following measures

to the Service. The grantee shall implement any additional conservation measures requested by DFG and/or the Service.

- c) DFG shall be notified at least one week in advance of the date on which work will start in the stream, so that a qualified DFG biologist can monitor activities at the work site. All work in the stream shall be stopped immediately if it is determined by DFG that the work has the potential to adversely impact shrimp or its habitat. Work shall not recommence until DFG is satisfied that there will be no impact on the shrimp.
- d) Where appropriate, a Service-approved DFG biologist will survey each site for shrimp before allowing work to proceed and prior to issuance of a Streambed Alteration Agreement. All overhanging vegetation, undercut banks, and tree roots will be surveyed with a butterfly net or fish net.
- e) Prior to the onset of work at a work site that may contain shrimp, the Service-approved DFG biologist shall conduct a training session for all construction personnel. At a minimum the training shall include a description of the shrimp and its habitat, the importance of the shrimp and its habitat, the general measures that are being implemented to conserve the shrimp as they relate to the work site, and the work site boundaries where construction may occur.
- f) Only Service-approved biologists shall participate in the capture, handling, and monitoring of shrimp. DFG shall report annually on the number of capture, release and injuries/mortality and agrees to modify capture/release strategy with Service staff as needed to prevent adverse effects.
- g) In site locations where shrimp are present, DFG will require the grantee to implement the mitigation measures listed:
  - 1) Equipment work shall be performed only in riffle, shallow run, or dry habitats, avoiding low velocity pool and run habitats occupied by shrimp, unless shrimp are relocated according to the protocol described below. "Shallow" run habitat is defined as a run with a maximum water depth, at any point, less than 12 inches, and without undercut banks or vegetation overhanging into the water.
  - 2) Hand placement of logs or rocks shall be permitted in pool or run habitat in stream reaches where shrimp are known to be present, only if the placement will not adversely affect shrimp or their habitat.
  - 3) Care shall be taken during placement or movement of materials in the stream to prevent any damage to undercut stream banks and to minimize damage to any streamside vegetation. Streamside vegetation overhanging into pools or runs shall not be removed, trimmed, or otherwise modified.
  - 4) No log or rock weirs (including vortex rock weirs), or check dams shall be constructed that would span the full width of the low flow stream channel. Vegetation shall be incorporated with any structures involving rocks or logs to enhance migration potential for shrimp.
  - 5) No dumping of dead trees, yard waste or brush shall occur in shrimp streams, which may result in oxygen depletion of aquatic systems.
- h) If in the opinion of the Service-approved biologist, adverse affects to shrimp would be further minimized by moving shrimp away from the project site, the following procedure shall be used:

- 1) A second survey shall be conducted within 24 hours of any construction activity and shrimp shall be relocated to the nearest suitable habitat. Shrimp shall be moved while in the net, or placed in buckets containing stream water. Stress and temperature monitoring of shrimp shall be performed by the Service-approved biologist. Numbers of shrimp and any mortalities or injuries shall be identified and recorded. Shrimp habitat is defined as reaches in low elevation (less than 116 m) and low gradient (less than one percent) streams where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris or overhanging vegetation.
- 2) When no other habitat exists on a landowner's property, the shrimp shall be held in suitable containers with site water and released at the end of the day. Containers shall be placed in the shade.
  - i) If moving the shrimp out of the work area cannot be accomplished, and other avoidance measures have been deemed inappropriate, DFG shall drop activities at the work site from the project.
  - j) A Service-approved DFG biologist shall be present at the work site until such time as all removal of shrimp, instruction of workers, and habitat disturbance associated with the restoration project have been completed. The Service-approved biologist shall have the authority to halt any action that might result in the loss of any shrimp or its habitat. If work is stopped, the Service-approved biologist shall immediately notify DFG and the Service.
  - k) If a work site is temporarily dewatered by pumping, intakes shall be completely screened with wire mesh no larger than 0.2 inch to prevent shrimp from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow with the least disturbance to the substrate.
  - l) A Service-approved biologist shall permanently remove from within the project work site, any individuals of exotic species, such as bullfrogs, centrarchid fishes, and non-native crayfish, to the maximum extent possible. The grantee shall have the responsibility that such removals are done in compliance with the California Department of Fish and Game.
  - m) Invasive non-native vegetation that provides shrimp habitat and is removed as a result of Program activities shall be replaced with native vegetation that provides comparable habitat for the shrimp. Re-vegetated sites shall be irrigated as necessary until vegetation is established. Re-vegetated sites shall be monitored until shading and cover achieves 80% of pre-project shading and cover and for a minimum of 5 years.
- 3) **Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), Steelhead (*Oncorhynchus mykiss*), and Coast cutthroat trout (*Oncorhynchus clarki clarki*)**

While all of the work proposed under this program will enhance habitat for one or more of these species, all of the work sites proposed as part of the 2011 grants program could involve instream work in their habitat (Appendix A). In order to avoid any potential for negative impacts to these species, the following measures will be implemented:

- a) Project work within the wetted stream shall be limited to the period between June 15 and November 1, or the first significant rainfall, or which ever comes first. This is to take advantage of low stream flows and to avoid the spawning and egg/alevin incubation period of salmon and steelhead. Whenever possible, the work period at individual sites shall be further limited to entirely avoid periods when salmonids are present (for example, in a seasonal creek, work will be confined to the period when the stream is dry).
- b) Suitable large woody debris removed from fish passage barriers that is not used for habitat enhancement, shall be left within the riparian zone so as to provide a source for future recruitment of wood into the stream, reduce surface erosion, contribute to amounts of organic debris in the soil, encourage fungi, provide immediate cover for small terrestrial species and to speed recovery of native vegetation.
- c) Prior to dewatering a construction site, fish and amphibian species shall be captured and relocated by DFG personnel (or designated agents). Measures shall be taken to minimize harm and mortality to listed salmonids resulting from fish relocation and dewatering activities:
  - 1) Fish relocation and dewatering activities shall only occur between June 15 and November 1 of each year.
  - 2) Fish relocation shall be performed by a qualified fisheries biologist, with all necessary State and Federal permits. Rescued fish shall be moved to the nearest appropriate site outside of the work area. A record shall be maintained of all fish rescued and moved. The record shall include the date of capture and relocation, the method of capture, the location of the relocation site in relation to the project site, and the number and species of fish captured and relocated. The record shall be provided to DFG within two weeks of the completion of the work season or project, whichever comes first.
  - 3) Electrofishing shall be conducted by properly trained personnel following NOAA *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act*, June 2000.
  - 4) Prior to capturing fish, the most appropriate release location(s) shall be determined. The following shall be determined:
    - i) Temperature: Water temperature shall be similar as the capture location.
    - ii) Habitat: There shall be ample habitat for the captured fish.
    - iii) Exclusions from work site: There shall be a low likelihood for the fish to reenter the work site or become impinged on exclusion net or screen
  - 5) The most efficient method for capturing fish shall be determined by the biologist. Complex stream habitat generally requires the use of electrofishing equipment, whereas in outlet pools, fish may be concentrated by pumping-down the pool and then seining or dipnetting fish.
  - 6) Handling of salmonids shall be minimized. However, when handling is necessary, always wet hands or nets prior to touching fish.
  - 7) Temporarily hold fish in cool, shaded, aerated water in a container with a lid. Provide aeration with a battery-powered external bubbler. Protect fish from jostling and noise and do not remove fish from this container until time of release.

- 8) Air and water temperatures shall be measured periodically. A thermometer shall be placed in holding containers and, if necessary, periodically conduct partial water changes to maintain a stable water temperature. If water temperature reaches or exceeds 18 °C, fish shall be released and rescue operations ceased.
  - 9) Overcrowding in containers shall be avoided by having at least two containers and segregating young-of-year (YOY) fish from larger age-classes to avoid predation. Larger amphibians, such as Pacific giant salamanders, shall be placed in the container with larger fish. If fish are abundant, the capturing of fish and amphibians shall cease periodically and shall be released at the predetermined locations.
  - 10) Species and year-class of fish shall be visually estimated at time of release. The number of fish captured shall be counted and recorded. Anesthetization or measuring fish shall be avoided.
  - 11) If feasible, initial fish relocation efforts shall be performed several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional electrofishing passes immediately prior to construction. In many instances, additional fish will be captured that eluded the previous day's efforts.
  - 12) If mortality during relocation exceeds five percent, capturing efforts shall be stopped and the appropriate agencies shall be contacted immediately.
  - 13) In regions of California with high summer temperatures, relocation activities shall be performed in the morning when the temperatures are cooler.
  - 14) DFG shall minimize the amount of wetted stream channel that is dewatered at each individual project site to the fullest extent possible.
  - 15) Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the Restoration Manual.
- d) If these mitigation measures cannot be implemented, or the project actions proposed at a specific work site cannot be modified to prevent or avoid potential impacts to anadromous salmonids or their habitat, then activity at that work site shall be discontinued.

#### **4) Tidewater goby (*Eucyclogobius newberryi*)**

The tidewater goby was listed by the state of California for protection in 1987, and federally listed in 1994. However, the fish's need for specific kind of habitat means that the populations are isolated from each other, and subject to extirpation due to various human activities, such as draining of wetlands, sand bar breaches, pollutant accumulation in lagoons, and so forth.

Of the 54 work sites proposed as part of the 2011 grants program, one site (723591 San Jose Creek Capacity Improvement and Fish Passage Project) show the tidewater goby listed on the corresponding species lists in Appendix A. Actual work sites are not within the tidal zone and as such will not affect suitable habitat for the tidewater goby.

**5) California red-legged frog (*Rana aurora draytonii*)**

Of the 54 work sites proposed as part of the 2011 grants program, 18 are listed on the corresponding species lists in Appendix A. Activities proposed for the sites 723603 Gualala Wood In the Stream Program (aka Jammin' for Salmon), 723613 Robinson Creek Planning Watershed Sediment Source Implementation Project, 723668 Inman Creek Phase 2 Sediment Control and LWD Implementation Project, 723671 Riparian and Floodplain Habitat Restoration for Coho Recovery along Lagunitas and San Geronimo Creeks, 723724 Lansdale Fish Passage Improvement, 723621 Instream Flow Measurements on Napa Tributaries, 723647 San Vicente Large Woody Debris Project Phase I, 723567 Purrington Creek Fish Passage Project, 723568 Dutch Bill Creek Sediment Source Reduction Project, 723596 Salmon Creek Roads Implementation Project Phase II, 723617 Green Valley Creek Channel Stabilization and Coho Habitat Enhancement Project, 723638 Green Valley Creek Roads Implementation Project-Phase II, 723651 Austin Creek Sediment Source Reduction Implementation Project, Phase 1, 723652 Salt Creek Stream Habitat Restoration Project, 723670 Redwood Creek Passage Barrier Removal, 723588 Pismo Creek Watershed Arundo Management Program, 723591 San Jose Creek Capacity Improvement and Fish Passage Project, and 723720 Rancho Tajiguas Barrier Removal Project will not remove or degrade California red-legged frog (CRLF) habitat; however, precautions shall be required at these sites to avoid the potential for take of CRLF while using heavy equipment. The potential for impacts to CRLF will be mitigated by complying with all of the mandatory terms and conditions associated with incidental take authorized by the U. S. Fish and Wildlife Service, Biological Opinion (file no. 1-1-03-F-273, 81420-2009-I-0748-1, and 81440-2009-F-0387 for projects within the San Francisco District of the USACE, and file no. 2008-F-0441 for projects within the Los Angeles District of the USACE). The three projects (723603 Gualala Wood in the Stream Program (aka Jammin' for Salmon), 723613 Robinson Creek Planning Watershed Sediment Source Implementation Project, and 723668 Inman Creek Phase 2 Sediment Control and LWD Implementation Project) located in the area considered by the Arcata Fish and Wildlife Service Office and are likely to contain California red-legged frogs shall be consulted on individually. DFG shall implement the following measures to minimize adverse effects to the CRLF and its habitat:

- a) Project activities in potential red-legged frog habitat shall be restricted to the period between July 1 and October 15.
- b) At least 15 days prior to the onset of project activities, DFG shall submit the names(s) and credentials of biologists who would conduct activities specified in the following measures. No project activities shall begin until DFG has received written approval from the Service that the biologist(s) is qualified to conduct the work.
- c) Prior to the onset of any project-related activities, the approved biologist must identify appropriate areas to receive red-legged frog adults and tadpoles from the project areas. These areas must be in proximity to the capture site, contain suitable habitat, not be affected by project activities, and be free of exotic predatory species (i.e. bullfrogs, crayfish) to the best of the approved biologist's knowledge.
- d) A Service-approved biologist shall survey the project site at least two weeks before the onset of activities. If red-legged frogs are found in the project area and these individuals are likely to be killed or injured by work activities, the Service-approved biologist will allow sufficient time to move them from the site before work activities resume. Only Service-approved biologists will participate in activities with the capture, handling, and monitoring of red-legged frogs.
- e) Prior to the onset of project activities, a Service-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include

a description of the red-legged frog and its habitat, the importance of the red-legged frog and its habitat, the general measures that are being implemented to conserve the red-legged frog as they relate to the project, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

- f) A Service-approved biologist shall be present at the work site until such time as removal of red-legged frogs, instruction of workers, and habitat disturbance has been completed. The Service-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the USACE and Service during review of the proposed action. If work is stopped, the USACE and the Service shall be notified immediately by the Service-approved biologist or on-site biological monitor.
- g) If red-legged frogs are found and these individuals are likely to be killed or injured by work activities, the Service-approved biologists must be allowed sufficient time to move them from the site before work activities resume. The Service-approved biologist must relocate the red-legged frogs the shortest distance possible to one of the predetermined areas. The Service-approved biologist must maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs (digital preferred) to assist in determining whether translocated animals are returning to the point of capture. Only red-legged frogs that are at risk of injury or death by project activities may be moved.
- h) A DFG monitoring plan shall be developed to determine the level of incidental take of the red-legged frog associated with the Restoration Program funded activities in the area. The monitoring plan must include a standardized mechanism to report any observations of dead or injured red-legged frog to the appropriate USACE and Service offices.
- i) If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 0.125 inch to prevent red-legged frogs from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain down stream flows during construction activities and eliminate the possibility of ponded water. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
- j) Ponded areas shall be monitored for red-legged frogs that may become entrapped. Any entrapped red-legged frog shall be relocated to a pre-determined receiving area by a Service-approved biologist.
- k) A Service-approved biologist will permanently remove from the project area, any individuals of exotic species, such as bullfrogs (*Rana catesbiana*), centrarchid fishes, and non-native crayfish to the maximum extent possible. The biologist will have the responsibility to ensure that their activities are in compliance with the Fish and Game Code.
- l) The Service-approved biologist(s) who handle red-legged frogs shall ensure that their activities do not transmit diseases. To ensure that diseases are not conveyed between work sites by the Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force shall be followed at all times.
- m) The DFG or USACE shall report any observation of the incidental take of red-legged frogs associated with the implementation of the Restoration Program projects in accordance with RGP78. The Service and the USACE must review the circumstances

surrounding the incident to determine whether any patterns of repeated authorized or unauthorized activities are occurring that may indicate that additional protective measures are required. If, after completion of the review, the USACE and the Service agree that additional protective measures are required and can be implemented within the existing scope of the action, the USACE must require the DFG to implement the agreed-upon measures within a reasonable time frame; if the corrective actions cannot be implemented with the scope of the existing action, the USACE and Service will determine whether re-initiation of consultation is appropriate.

- n) Despite term and condition h of this section (above), the USACE must immediately re-initiate formal consultation with the Service, pursuant to 7(a) (2) of the Endangered Species Act, if red-legged frogs are taken within the action area at or in excess of the incidental take anticipated in the Incidental Take Statement section of the U.S. Fish and Wildlife biological opinion (file no. 2008-F-0441), whether by project or by year.
- o) If these mitigation measures cannot be implemented or the project activities proposed at a specific work site cannot be modified to prevent or avoid potential impacts to CRLF or its habitat, then project activity at that work site shall be discontinued.

**6) Arroyo Toad (*Bufo microscaphus californicus*)**

None of the proposed projects in the 2011 grants program are located within the range of the Arroyo toad.

**7) San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)**

None of the projects proposed in the 2011 grants program are located within the range of the San Francisco garter snake.

**8) Least Bell's Vireo (*Vireo bellii pusillus*)**

Following the listing of the least Bell's vireo subspecies as Federally Endangered in 1986, there has been much conservation, restoration, monitoring, and research that has taken place in its southern California range leading to increased populations in some areas. Of the 54 projects proposed as part of the 2011 grants program, none are within the range of the least Bell's vireo.

**9) Marbled murrelet (*Brachyramphus marmoratus*)**

The marbled murrelet is listed as endangered under CESA and threatened under ESA. Activities to protect and restore habitat will not remove or degrade suitable habitat for marbled murrelets, however nesting birds could be disturbed by the noise from heavy equipment required for projects such as culvert removal or placement of large woody debris.

Twenty-three of the 54 work sites proposed as part of the 2011 grants program are listed on the corresponding species lists in Appendix A. Activities proposed for the sites 723590 Stream and Floodplain Enhancement of Hunter Creek, Lower Klamath River, 723646 Hunter Creek Road Decommissioning Project, 723648 Terwar Creek Road Decommissioning Project, 723619 Beith Creek Road Decommissioning and Sediment Control Project, 723626 2011 Little S.F. Elk River Road Decommissioning Project,

723645 Root Creek Road Decommissioning and Sediment Control Project, 723700 Salmon Creek Road Decommissioning and Sediment Control Project, 723221 2009 Freshwater Creek - Cloney Gulch Road Decommissioning Project, 723460 2009 BLM Salmon Creek Road Decommissioning Project - additional sites, 723681 Klamath River Tributary Fish Passage Improvement Project, 2011-2012, 723221 2009 Freshwater Creek - Cloney Gulch Road Decommissioning Project, 723564 Walton Gulch Bridge, 723571 North Fork of South Fork Noyo River Stream Habitat Restoration Project, 723572 Berry Gulch Stream Habitat Restoration Project, 723609 Woodlands Little North Fork Sill Removal Project, 723660 Indian Creek Salmonid Habitat Restoration Project, 723661 Hollow Tree Creek Implementation Project, Phase VI, 723664 South Fork Big River Coho Instream Habitat Enhancement Project, 723687 Caspar Watershed - Ziemer Road Decommissioning, 723701 East Branch Little North Fork Big River Sediment Control and LWD Implementation Project, 723671 Riparian and Floodplain Habitat Restoration for Coho Recovery along Lagunitas and San Geronimo Creeks, 723647 San Vicente Large Woody Debris Project Phase I, and 723651 Austin Creek Sediment Source Reduction Implementation Project, Phase 1 will not remove, degrade, or downgrade suitable marbled murrelet habitat. As a result, direct injury or mortality of murrelets is not an issue. The potential exists for noise from heavy equipment work at these sites to disrupt marbled murrelet nesting. To avoid this potential impact, the following mitigation measures shall be implemented:

- a) Restoration work in areas considered by the Arcata and Ventura USFWS Offices shall not be conducted within 0.25 mile of occupied or un-surveyed suitable marbled murrelet habitat between March 24 and September 15. Restoration work in areas considered by the Sacramento USFWS Office shall not be conducted within 0.25 mile of any occupied or un-surveyed suitable marbled murrelet habitat between November 1 and September 15.
- b) The work window at individual work sites near suitable habitat may be modified, if protocol surveys determine that habitat quality is low and occupancy is very unlikely.
- c) If these mitigation measures cannot be implemented or the project actions proposed at a specific work site cannot be modified to prevent or avoid potential adverse effects to marbled murrelet or their habitat, then activity at that work site shall be discontinued.
- d) For projects contained in streams and watersheds included in a FWS Habitat Conservation Plan the mitigation measures contained within those Habitat Conservation Plans shall be followed.

#### **10) Northern spotted owl (*Strix occidentalis caurina*)**

The northern spotted owl is listed as threatened under ESA. Restoration activities should not alter habitat for northern spotted owls, however nesting birds could be disturbed by the noise from heavy equipment during projects such as culvert removal or placement of large woody debris. Disturbance can be avoided by limiting heavy equipment work within 0.25 miles of suitable spotted owl habitat to the period outside the nesting season.

Of the 54 work sites proposed as part of the 2011 grants program, 31 are in potentially suitable habitat for the northern spotted owl (723590 Stream and Floodplain Enhancement of Hunter Creek, Lower Klamath River, 723646 Hunter Creek Road Decommissioning Project, 723648 Terwar Creek Road Decommissioning Project, 723616 Redwood Creek 1431 and 1433 Roads Decommissioning and Erosion Prevention Project, 723619 Beith Creek Road Decommissioning and Sediment Control Project,

723626 2011 Little S.F. Elk River Road Decommissioning Project, 723645 Root Creek Road Decommissioning and Sediment Control Project, 723657 Middle Van Duzen River Phase 4 Upslope Restoration Project, 723700 Salmon Creek Road Decommissioning and Sediment Control Project, 723221 2009 Freshwater Creek - Cloney Gulch Road Decommissioning Project, 723460 2009 BLM Salmon Creek Road Decommissioning Project - additional sites, 723681 Klamath River Tributary Fish Passage Improvement Project, 2011-2012, 723559 Little North Fork Navarro River Wood Enhancement - Phase III, 723560 North Fork Big River Stream Habitat Restoration Project, 723570 McMullen Creek Large Wood Enhancement Project – Phase II, 723603 Gualala Wood In the Stream Program (aka Jammin’ for Salmon), 723613 Robinson Creek Planning Watershed Sediment Source Implementation Project, 723628 Dunn Creek Coho Fish Passage Project, 723660 Indian Creek Salmonid Habitat Restoration Project, 723661 Hollow Tree Creek Implementation Project, Phase VI, 723663 Lower South Branch North Fork Navarro Sediment Reduction - Phase I, 723664 South Fork Big River Coho Instream Habitat Enhancement Project, 723666 Cottaneva Creek Watershed Restoration Implementation Project, Phase III, 723667 Standley Creek Upslope Sediment Reduction Project Phase 4 (SCUSRP), 723668 Inman Creek Phase 2 Sediment Control and LWD Implementation Project, 723675 Russell Brook Upslope Sediment Reduction Project (RUSRP), 723684 Big Salmon Creek Large Woody Debris Project, 723701 East Branch Little North Fork Big River Sediment Control and LWD Implementation Project, 723671 Riparian and Floodplain Habitat Restoration for Coho Recovery along Lagunitas and San Geronimo Creeks, 723596 Salmon Creek Roads Implementation Project Phase II, 723617 Green Valley Creek Channel Stabilization and Coho Habitat Enhancement Project, and 723651 Austin Creek Sediment Source Reduction Implementation Project, Phase 1) (Appendix A). None of the activities will remove, degrade or downgrade northern spotted owl habitat. As a result, direct injury or mortality of owls is not likely. The potential exists for heavy equipment work at these sites to disturb spotted owl nesting. To avoid this potential effect, the following mitigation measures will be implemented:

- a) Work with heavy equipment at any site within 0.25 miles of suitable habitat for the northern spotted owl shall not occur from November 1 to July 31 for projects in areas considered by the Sacramento USFWS Office and from November 1 to July 9 for projects in areas considered by the Arcata USFWS Office.
- b) The work window at individual work sites may be advanced prior to July 9 or July 31 (corresponding to the different time constraints of the Sacramento and Arcata USFWS Office), if protocol surveys determine that suitable habitat is unoccupied.
- c) If these mitigation measures cannot be implemented or the project actions proposed at a specific work site cannot be modified to prevent or avoid potential impacts to northern spotted owls or their habitat, then activity at that work site shall be discontinued and DFG must reinitiate consultation with FWS.
- d) For projects contained within streams and watersheds included in a FWS Habitat Conservation Plan the mitigation measures contained within those Habitat Conservation Plans shall be followed.

**11) Willow flycatcher (*Empidonax traillii*)**

Of the 54 work sites proposed as part of the 2011 grants program, three are in potentially suitable habitat for the willow flycatcher (723646 Hunter Creek Road Decommissioning Project, 723648 Terwar Creek Road Decommissioning Project, and 723591 San Jose Creek Capacity Improvement and Fish Passage Project) (Appendix A). None of the activities proposed for these sites will significantly degrade existing willow flycatcher

habitat; however, the potential exists for the noise from heavy equipment work or harvesting of revegetation material at these sites to disrupt willow flycatcher nesting. To avoid this potential impact, the following mitigation measures shall be implemented:

- a) Heavy equipment work shall not begin within one quarter mile of any site with known or potential habitat for the willow flycatcher until after August 31 and for the southwestern willow flycatcher until after September 15.
- b) Prior to any work in areas where riparian habitat is present, a qualified biologist shall do a habitat assessment and determine whether the area within 500 feet of the project site is suitable for nesting by southwestern willow flycatchers. If not, work may proceed without further surveys. If the biologist determines that the area is suitable, a qualified biologist must monitor before and during the project to determine the status of the southwestern willow flycatchers within 500 feet of the project site.
- c) The work window at individual work sites may be modified, if protocol surveys determine that nesting birds do not occur within 0.25 miles of the site during the breeding season.
- d) Harvest of willow branches at any site with potential habitat for the willow flycatcher shall not occur between May 1 and August 31. Harvest of willow branches at any site with potential habitat for the southwestern willow flycatcher shall not occur between May 1 and September 15.
- e) No more than 1/3 of any willow plant shall be harvested annually. Care shall be taken during harvest not to trample or over harvest the willow sources.
- f) If any southwestern willow flycatchers are observed nesting within 500 feet of the project activities, work shall cease temporarily until it is determined that either the birds are not nesting or young have fledged.
- g) DFG shall ensure that the grantee or responsible party is aware of this site-specific condition, and shall inspect the work site before, during, and after completion of the action item.
- h) If these mitigation measures cannot be implemented or the project actions proposed at a specific work site cannot be modified to prevent or avoid potential impacts to willow flycatcher or their habitat, then activity at that work site shall be discontinued.

**12) Point Arena mountain beaver (*Aplodontia rufa nigra*)**

The Point Arena subspecies is only found within a disjunct, 24-square mile area in western Mendocino County, California. The U.S. Fish and Wildlife Service considers the range of the Point Arena mountain beaver (PAMB) to include areas five miles inland from the Pacific Ocean extending from a point two miles north of Bridgeport Landing south to a point five miles south of the town of Point Arena. PAMB can be found along Nulls Creek, Mallo Pass Creek, Irish Gulch, Alder Creek, Manchester State Park, Lagoon Lake, Lower Hathaway Creek, City of Point Arena, Lower and Middle Brush Creek, and Hathaway Creek.

Of the 54 projects proposed as part of the 2011 grants program, none of the projects list the PAMB in the species list (Appendix A). However, none of the activities proposed for these sites are within the range of the PAMB and will not degrade suitable PAMB habitat.

### **C. Riparian and re-vegetation**

- 1) Planting of seedlings shall begin after December 1, or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings, but in no case after April 1.
- 2) Any disturbed banks shall be fully restored upon completion of construction. Revegetation shall be done using native species. Planting techniques can include seed casting, hydroseeding, or live planting methods using the techniques in Part XI of the *California Salmonid Stream Habitat Restoration Manual*.
- 3) Disturbed and compacted areas shall be re-vegetated with native plant species. The species shall be comprised of a diverse community structure that mimics the native riparian corridor. Planting ratio shall be 2:1 (two plants to every one removed).
- 4) Unless otherwise specified, the standard for success is 80 percent survival of plantings or 80 percent ground cover for broadcast planting of seed after a period of 3 years.
- 5) To ensure that the spread or introduction of invasive exotic plants shall be avoided to the maximum extent possible, equipment shall be cleaned of all dirt, mud, and plant material prior to entering a work site. When possible, invasive exotic plants at the work site shall be removed. Areas disturbed by project activities will be restored and planted with native plants.
- 6) Mulching and seeding shall be done on all exposed soil which may deliver sediment to a stream. Soils exposed by project operations shall be mulched to prevent sediment runoff and transport. Mulches shall be applied so that not less than 90% of the disturbed areas are covered. All mulches, except hydro-mulch, shall be applied in a layer not less than two (2) inches deep. Where feasible, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tacked as necessary to prevent excessive movement. All exposed soils and fills, including the downstream face of the road prism adjacent to the outlet of culverts, shall be reseeded with a mix of native grasses common to the area, free from seeds of noxious or invasive weed species, and applied at a rate which will ensure establishment.
- 7) If erosion control mats are used in re-vegetation, they shall be made of material that decomposes. Erosion control mats made of nylon plastic, or other non-decomposing material shall not be used.
- 8) DFG shall retain as many trees and brush as feasible, emphasizing shade producing and bank stabilizing trees and brush to minimize impacts to the riparian corridor.
- 9) If riparian vegetation is to be removed with chainsaws, the grantee shall use saws that operate with vegetable-based bar oil when possible.
- 10) Disturbed and decompact areas shall be re-vegetated with native species specific to the project location that comprise a diverse community of woody and herbaceous species.

### **V. CULTURAL RESOURCES**

Ground-disturbance will be required to implement the project at some work sites that have the potential to affect cultural resources. This potential impact will be avoided through implementation of the following mitigation measures:

- 1) DFG shall contract with a qualified archaeologist(s) and paleontologist(s) to complete cultural and paleontological resource surveys at any sites with the potential to be impacted prior to any ground disturbing activities. Cultural and paleontological resource surveys shall be conducted using standard protocols to meet the 2010 CEQA Guideline requirements. Paleontological survey protocols are listed in Appendix D. The procedure for a programmatic evaluation of archeological resources is provided in Appendix E.
- 2) If cultural and or paleontological resource sites are identified at a site, DFG shall require one or more of the following protective measures to be implemented before work can proceed: a) fencing to prevent accidental disturbance of cultural resources during construction, b) on-site monitoring by a cultural and or paleontological resource professional during construction to assure that cultural resources are not disturbed, c) redesign of proposed work to avoid disturbance of cultural resources.
- 3) DFG shall report any previously unknown historic, archeological and paleontological remains discovered at a site to the USACE as required in the RGP.
- 4) DFG shall ensure that the grantee or responsible party is aware of these site-specific conditions, and shall inspect the work site before, during, and after completion of the action item.
- 5) Inadvertent Discovery of Cultural Resources - If cultural resources, such as lithic debitage, ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (January 1999 Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action. [Prehistoric materials which could be encountered include: obsidian and chert flakes or chipped stone tools, grinding implements, (e.g., pestles, handstones, mortars, slabs), bedrock outcrops and boulders with mortar cups, locally darkened midden, deposits of shell, dietary bone, and human burials. Historic materials which could be encountered include: ceramics/pottery, glass, metal, can and bottle dumps, cut bone, barbed wire fences, building pads, structures, trails/roads, railroad rails and ties, trestles, etc.]
- 6) Inadvertent Discovery of Human Remains - If human remains are discovered during project construction, work shall stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The county coroner shall be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American heritage Commission (NAHC) (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work shall not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.
- 7) Procedures for treatment of an inadvertent discovery of human remains:
  - a) Immediately following discovery of known or potential human remains all ground-disturbing activities at the point of discovery shall be halted.

- b) No material remains shall be removed from the discovery site, a reasonable exclusion zone shall be cordoned off.
  - c) The DFG Grant Manager and property owner shall be notified and the DFG Grant Manager shall contact the county coroner.
  - d) DFG shall retain the services of a professional archaeologist to immediately examine the find and assist the process.
  - e) All ground-disturbing construction activities in the discovery site exclusion area shall be suspended.
  - f) The discovery site shall be secured to protect the remains from desecration or disturbance, with 24-hour surveillance, if prudent.
  - g) Discovery of Native American remains is a very sensitive issue, and all project personnel shall hold any information about such a discovery in confidence and divulge it only on a need-to-know basis.
  - h) The coroner has two working days to examine the remains after being notified. If the remains are Native American, the coroner has 24 hours to notify the NAHC in Sacramento (telephone 916/653-4082).
  - i) The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD) of the deceased Native American.
  - j) Within 24 hours of their notification by the NAHC, the MLD shall be granted permission by the landowner's authorized representative to inspect the discovery site, if they so choose.
  - k) Within 24 hours of their notification by the NAHC, the MLD shall recommend to the landowner and DFG Grant Manager means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials.
  - l) Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner or his/her authorized representative rejects the recommendation of the MLD and mediation between the parties by the NAHC fails to provide measures acceptable to the landowner, the landowner or his/her authorized representatives shall re-inter the human remains and associated grave offerings with appropriate dignity on the property in a location not subject to further subsurface disturbance.
  - m) Following final treatment measures, the DFG shall ensure that a report is prepared that describes the circumstances, nature and location of the discovery, its treatment, including results of analysis (if permitted), and final disposition, including a confidential map showing the reburial location. Appended to the report shall be a formal record about the discovery site prepared to current California standards on DPR 523 form(s). DFG shall ensure that report copies are distributed to the appropriate California Historic Information Center, NAHC and MLD.
- 8) Pursuant to RGP78 and in accordance to 36 C.F.R. Section 800.13, in the event of any discovery during construction of human remains, archeological deposits, or any other type of historic property, the DFG shall notify the USACE archeological staff (Steve Dibble at 213-452-3849 or John Killeen at 213-452-3861) within 24 hours. Construction work shall

be suspended immediately and shall not resume until USACE re-authorizes project construction.

- 9) If it becomes impossible to implement the project at a work site without disturbing cultural or paleontological resources, then activity at that work site shall be discontinued.

## VI. GEOLOGY AND SOILS

There is no potential for a significant adverse impact to geology and soils; implementation of the restoration project will contribute to an overall reduction in erosion and sedimentation. Existing roads will be used to access work sites. Ground disturbance at most work sites will be minimal, except for road improvements or decommissioning. Road improvements and decommissioning will involve moving large quantities of soil from road fills and stream crossings to restore historic land surface profiles and prevent chronic erosion and sediment delivery to streams. In order to avoid temporary increases in surface erosion, the following mitigation measures will be implemented:

- 1) DFG will implement the following measures to minimize harm to listed salmonids resulting from culvert replacement activities and other instream construction work:
  - a) All stream crossing replacement or modification designs, involving fish passage, shall be reviewed and approved by NOAA (or DFG) engineers prior to onset of work.
  - b) If the stream in the project location was not passable to, or was not utilized by all life stages of, all covered salmonids prior to the existence of the road crossing, the project shall pass the life stages and covered salmonid species that historically did pass there. Retrofit culverts shall meet the fish passage criteria for the passage needs of the listed species and life stages historically passing through the site prior to the existence of the road crossing.
- 2) DFG shall implement the following measures to minimize harm to listed salmonids resulting from road decommissioning activities:
  - a) Woody debris will be concentrated on finished slopes of decommissioned roads adjacent to stream crossings to reduce surface erosion; contribute to amounts of organic debris in the soil; encourage fungi; provide immediate cover for small terrestrial species; and to speed recovery of native forest vegetation.
  - b) Work sites shall be winterized at the end of each day to minimize the eroding of unfinished excavations when significant rains are forecasted. Winterization procedures shall be supervised by a professional trained in erosion control techniques and involve taking necessary measures to minimize erosion on unfinished work surfaces. Winterization includes the following: smoothing unfinished surfaces to allow water to freely drain across them without concentration or ponding; compacting unfinished surfaces where concentrated runoff may flow with an excavator bucket or similar tool, to minimize surface erosion and the formation of rills; and installation of culverts, silt fences, and other erosion control devices where necessary to convey concentrated water across unfinished surfaces, and trap exposed sediment before it leave the work site.
- 3) Effective erosion control measures shall be in-place at all times during construction. Construction within the 5-year flood plain shall not begin until all temporary erosion controls (i.e., straw bales or silt fences that are effectively keyed-in) are in place down slope or down stream of project activities within the riparian area. Erosion control

measures shall be maintained throughout the construction period. If continued erosion is likely to occur after construction is completed, then appropriate erosion prevention measures shall be implemented and maintained until erosion has subsided.

- 4) An adequate supply of erosion control materials (gravel, straw bales, shovels, etc.) shall be maintained onsite to facilitate a quick response to unanticipated storm events or emergencies.
- 5) Use erosion controls that protect and stabilize stockpiles and exposed soils to prevent movement of materials. Use devices such as plastic sheeting held down with rocks or sandbags over stockpiles, silt fences, or berms of hay bales, to minimize movement of exposed or stockpiled soils.
- 6) When needed, instream grade control structures shall be utilized to control channel scour, sediment routing, and headwall cutting.
- 7) Temporary stockpiling of excavated material shall be minimized. However, excavated material shall be stockpiled in areas where it cannot enter the stream channel. Available sites at or near the project location shall be determined prior to the start of construction. If feasible, topsoil shall be conserved for reuse at project location or use in other areas.
- 8) For projects located within the USACE San Francisco District, an annual limit on the number of sediment-producing projects per HUC 10 watershed shall be implemented to ensure that potential sediment impacts will remain spatially isolated, thus minimizing cumulative turbidity effects. Sediment producing projects include instream habitat improvement, instream barrier removal, stream bank stabilization, fish passage improvement, upslope road work, and fish screen construction (unless the screen is located in a diversion ditch and is disconnected from the waterway). The limit of projects shall be as follows:

Square mile of HUC 10 watershed	Maximum number of instream and upslope project per year
<50	2
51-100	3
101-150	4
151-250	5
251-350	6
351-500	9
>500	12

Projects funded by the FRGP that are not authorized under the RGP (i.e., they have undergone separate consultation) or have already been authorized by the RGP in previous years(s) do not count toward the limits described above.

- 9) Each year, all instream projects shall be separated both upstream and downstream from other proposed instream projects by at least 1500 linear feet in fish bearing stream reaches. In non-fish bearing reaches, the distance separating sediment-producing projects will be 500 feet.
- 10) Upon project completion, all exposed soil present in and around the project site shall be stabilized within 7 days. Soils exposed by project operations shall be mulched to prevent sediment runoff and transport. Mulches shall be applied so that not less than 90% of the disturbed areas are covered. All mulches, except hydro-mulch, shall be applied in a layer not less than two (2) inches deep. Where feasible, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tackified as necessary to prevent

excessive movement. All exposed soils and fills, including the downstream face of the road prism adjacent to the outlet of culverts, shall be reseeded with a mix of native grasses common to the area, free from seeds of noxious or invasive weed species, and applied at a rate which will ensure establishment.

- 11) Soil compaction shall be minimized by using equipment with a greater reach or that exerts less pressure per square inch on the ground, resulting in less overall area disturbed and less compaction of disturbed areas.
- 12) Disturbed soils shall be decompacted at project completion as heavy equipment exits the construction area.
- 13) At the completion of the project, soil compaction that is not an integral element of the design of a crossing should be de-compacted.

## **VII. GREENHOUSE GAS EMISSIONS**

No specific mitigation measures are required. Re-vegetation practices will help offset the short term, less than significant, greenhouse gas emissions.

## **VIII. HAZARDS AND HAZARDOUS MATERIALS**

The project will not create a significant hazard to the public or the environment. At work sites requiring the use of heavy equipment, there is a small risk of an accident upsetting the machine and releasing fuel, oil, and coolant, or of an accidental spark from equipment igniting a fire. The potential for these impacts will be reduced to a less than significant level through implementation of the following mitigation measures:

- 1) Heavy equipment that will be used in these activities will be in good condition and will be inspected for leakage of coolant and petroleum products and repaired, if necessary, before work is started.
- 2) When operating vehicles in wetted portions of the stream channel, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, the responsible party shall, at a minimum, do the following:
  - a) check and maintain on a daily basis any vehicles to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life, wildlife, or riparian habitat;
  - b) take precautions to minimize the number of passes through the stream and to avoid increasing the turbidity of the water to a level that is deleterious to aquatic life; and
  - c) allow the work area to "rest" to allow the water to clear after each individual pass of the vehicle that causes a plume of turbidity above background levels, resuming work only after the stream has reached the original background turbidity levels.
- 3) All equipment operators shall be trained in the procedures to be taken should an accident occur. Prior to the onset of work, DFG shall ensure that the grantee has prepared a Spill Prevention/Response plan to help avoid spills and allow a prompt and effective response should an accidental spill occur. All workers shall be informed of the importance of preventing spills. Operators shall have spill clean-up supplies on site and be knowledgeable in their proper deployment.

- 4) All activities performed in or near a stream will have absorbent materials designed for spill containment and cleanup at the activity site for use in case of an accidental spill. In an event of a spill, work shall cease immediately. Clean-up of all spills shall begin immediately. The responsible party shall notify the State Office of Emergency Services at 1-800-852-7550 and the DFG immediately after any spill occurs, and shall consult with the DFG regarding clean-up procedures.
- 5) All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 65 feet from any riparian habitat or water body and place fuel absorbent mats under pump while fueling. The USACE and the DFG will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the DFG will ensure that the grantee has prepared a plan to allow a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
- 6) Location of staging/storage areas for equipment, materials, fuels, lubricants, and solvents, will be located outside of the stream's high water channel and associated riparian area. The number of access routes, number and size of staging areas, and the total area of the work site activity shall be limited to the minimum necessary to complete the restoration action. To avoid contamination of habitat during restoration activities, trash will be contained, removed and disposed of throughout the project.
- 7) Petroleum products, fresh cement, and other deleterious materials shall not enter the stream channel.
- 8) Stationary equipment such as motors, pumps, generators, compressors, and welders, located within the dry portion of the stream channel or adjacent to the stream, will be positioned over drip-pans.
- 9) No debris, soil, silt, sand, bark, slash, spoils, sawdust, rubbish, cement, or concrete or washings thereof; asphalt, paint, or other coating material; oil or petroleum products; or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state. When operations are completed, any excess materials or debris shall be removed from the work area and disposed of in a lawful manner.
- 10) All internal combustion engines shall be fitted with spark arrestors.
- 11) The grantee shall have an appropriate fire extinguisher(s) and fire fighting tools (shovel and axe at a minimum) present at all times when there is a risk of fire.
- 12) Vehicles shall not be parked in tall grass or any other location where heat from the exhaust system could ignite a fire.
- 13) The grantee shall follow any additional rules the landowner has for fire prevention.
- 14) The potential for mercury contamination is largely predicted by the presence of historic hydraulic gold mines and mercury (cinnabar) mines (California's Abandoned Mines: A Report on the Magnitude and Scope of the Issue in the State, DOC 2000). Therefore, only a few limited areas within the geographic scope of this grant program have any potential for gravels contaminated with elemental mercury, they are: Middle Klamath River, Salmon River, Scott River, and the Lower Middle and Upper Trinity River. (Though studies by the USGS failed to find significant levels of methyl mercury near these mines.)
  - a) Given the limited geographical potential for encountering mercury contamination (from historic mining) within the geographic scope, and the limited number of projects within

these areas that will either disturb the channel bottom or import gravels for instream restoration; the following avoidance and mitigation measure will be adhered to: any gravel imported from offsite shall be from a source known to not contain historic hydraulic gold mine tailings, dredger tailings, or mercury mine waste or tailings.

## **IX. HYDROLOGY AND WATER QUALITY**

- 1) Instream work shall be conducted during the period of lowest flow.
- 2) Before work is allowed to proceed at a site, DFG shall inspect the site to assure that turbidity control measures are in place.
- 3) The waste water from construction area shall be discharged to an upland location where it will not drain sediment-laden water back to stream channel.
- 4) For projects within the USACE San Francisco District, if instream work liberates a sediment wedge, 80% of the wedge shall be removed before the sediment is liberated. The required amount can be modified if NOAA or DFG hydrologists or hydraulic engineers agree that removing a smaller amount will better protect and enhance fish habitat in the area of the project (e.g., leaving some sediment to replenish areas downstream that lack suitable substrate volume or quality).
- 5) To control erosion during and after project implementation, DFG shall implement best management practices, as identified by the appropriate Regional Water Quality Control Board.
- 6) Sediment-laden water caused by construction activity shall be filtered before it leaves the right-of-way or enters the stream network or an aquatic resource area. Silt fences or other detention methods shall be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.
- 7) If DFG determines that turbidity/siltation levels resulting from an activity or activities constitute a threat to aquatic life, all activities associated with the turbidity/siltation shall cease until effective DFG approved sediment control devices are installed and/or abatement procedures are implemented.
- 8) Poured concrete shall be excluded from the wetted channel for a period of two weeks after it is poured. During that time the poured concrete shall be kept moist, and runoff shall not be allowed to enter flowing stream. Commercial sealants shall be applied to the poured concrete surface where concrete cannot be excluded from the stream flow for two weeks. If sealant is used, water shall be excluded from the site until the sealant is dry.
- 9) If the DFG determines that turbidity/siltation levels resulting from an activity or activities constitute a threat to aquatic life, all activities associated with the turbidity/siltation shall cease until effective DFG approved sediment control devices are installed and/or abatement procedures are implemented.
- 10) Prior to use, all equipment shall be cleaned to remove external oil, grease, dirt, or mud. Wash sites shall be located in upland locations so that dirty wash water does not flow into the stream channel or adjacent wetlands.
- 11) Water conservation projects that include water storage tanks and a Forbearance Agreement, for the purpose of storing winter water for summer use, require registration of water use pursuant to the Water Code §1228.3, and require consultation with DFG and compliance with all lawful conditions required by DFG. Diversions to fill storage facilities

during the winter and spring months shall be made pursuant to a Small Domestic Use Appropriation (SDU) filed with the State Water Resources Control Board (SWRCB). DFG will review the appropriation of water to ensure fish and wildlife resources are protected. The following conditions shall then be applied:

- a) Seasonal Restriction: No pumping is allowed when stream flow drops below 0.7 cubic feet per second (cfs) except as permitted by DFG in the event of an emergency.
- b) Bypass Flows: Pumping withdrawal rates shall not exceed 5% of stream flow. If DFG determines that the streamflow monitoring data indicate that fisheries are not adequately protected, then the bypass flows are subject to revision by DFG.
- c) Cumulative Impacts: Pumping days shall be assigned to participating landowner(s) when streamflows drop below 1.0 cfs to prevent cumulative impacts from multiple pumps operating simultaneously.
- d) Pump Intake Screens: Pump intake screens shall comply with the "2000 California Department of Fish and Game Screening Criteria"\* for California streams that provide habitat for juvenile coho, Chinook and steelhead. The landowner shall be responsible for annual inspection and maintenance of screens. Additionally, the landowner shall be responsible for cleaning screens as needed to keep them free of debris and ensure that screen function complies with the criteria specifications.
- e) These conditions do not authorize incidental take of any species, removal of riparian vegetation, or bed, bank or channel alteration.
- f) DFG shall be granted access to inspect the pump system. Access is limited to the portion of the landowner's real property where the pump is located and those additional portions of the real property which must be traversed to gain access to the pump site. Landowners shall be given reasonable notice and any necessary arrangements will be made prior to requested access including a mutually-agreed-upon time and date. Notice may be given by mail or by telephone with the landowner or an authorized representative of the landowner. The landowner shall agree to cooperate in good faith to accommodate DFG access.

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\* Fish Screening Criteria are from "State of California Resources Agency Department of Fish and Game Fish Screening Criteria, June 19, 2000." The "approach velocity" shall be calculated according to Section 2C "Screens which are not Self Cleaning." These screening criteria are available at <http://iep.water.ca.gov/cvffrt/DFGCriteria2.htm>.

## **X. LAND USE AND PLANNING**

No specific mitigation measures are required for land use and planning.

## **XI. MINERAL RESOURCES**

No specific mitigation measures are required for mineral resources.

## **XII. NOISE**

Personnel shall wear hearing protection while operating or working near noisy equipment (producing noise levels  $\geq 85$  db, including chain saws, excavators and back hoes). No other specific mitigation measures are required for noise.

## **XIII. POPULATION AND HOUSING**

No specific mitigation measures are required for population and housing.

## **XIV. PUBLIC SERVICES**

No specific mitigation measures are required for public services.

## **XV. RECREATION**

No specific mitigation measures are required for recreation.

## **XVI. TRANSPORTATION/TRAFFIC**

The project will not affect transportation/traffic, because erosion control and culvert replacement projects will occur in wildland/rural sites with very little use. There is a potential that culvert replacement at some work sites could temporarily interfere with emergency access. This potential impact will be avoided through implementation of the following mitigation measure at any sites where emergency access might be necessary:

- 1) During excavation for culvert replacement, the grantee shall provide a route for traffic around or through the construction site.

## **XVII. UTILITIES AND SERVICE SYSTEMS**

No specific mitigation measures are required for utilities and service systems.

## **SECTION 2: MONITORING AND REPORTING**

DFG shall implement the following measures to ensure that individual restoration projects authorized annually through the RGP (RGP12 and RGP78) will minimize take of listed salmonids, monitor and report take of listed salmonids, and to obtain specific information to account for the effects and benefits of salmonid restoration projects authorized through the RGP.

- 1) DFG shall provide USACE, NOAA and USFWS notification of projects that are authorized through the RGP. The notification shall be submitted at least 90 days prior to project implementation and must contain specific project information including; name of project, type of project, location of project including hydrologic unit code (HUC), creek, watershed, city or town, and county.

- 2) DFG Grant Manager shall inspect the work site before, during, and after completion of the action item, to ensure that all necessary mitigation measures to avoid impacts are properly implemented.
- 3) DFG shall perform implementation monitoring immediately after the restoration activity is completed to ensure that projects are completed as designed.
- 4) DFG shall perform effectiveness/validation monitoring on at least 10 percent of restoration projects funded annually. A random sample, stratified by project type and region, shall be chosen from the pool of new restoration projects approved for funding each year. Pre-treatment monitoring shall be performed for newly selected projects, and post-treatment monitoring will be performed within three years following project completion.
- 5) Current monitoring forms and instructions used by DFG for the implementation monitoring and effectiveness monitoring are available online at:  
[http://ftp.dfg.ca.gov/Public/FRGP/Qualitative\\_Monitoring\\_Forms/](http://ftp.dfg.ca.gov/Public/FRGP/Qualitative_Monitoring_Forms/). DFG shall submit a copy of the annual report, no later than March 1 annually to NOAA.
- 6) The DFG annual report to NOAA shall include a summary of all restoration action items completed during the previous year. The annual report shall include a summary of the specific type and location of each project, stratified by individual project, 5<sup>th</sup> field HUC and affected species and evolutionary significant unit (ESU)/Distinct Population Segment (DPS). The report shall include the following project-specific summaries, stratified at the individual project, 5<sup>th</sup> field HUC and ESU level:
  - a) A summary detailing fish relocation activities; including the number and species of fish relocated and the number and species injured or killed. Any capture, injury, or mortality of adult salmonids or half-pounder steelhead shall be noted in the monitoring data and report. Any injuries or mortality from a fish relocation site that exceeds 3.0% of the affected listed species shall have an explanation describing why.
  - b) The number and type of instream structures implemented within the stream channel.
  - c) The length of stream bank (feet) stabilized or planted with riparian species.
  - d) The number of culverts replaced or repaired, including the number of miles or restored access to unoccupied salmonid habitat.
  - e) The distance (miles) of road decommissioned.
  - f) The distance (feet) of aquatic habitat disturbed at each project site.
- 7) DFG shall incorporate project data into a format compatible with the DFG/NOAA/Pacific Fisheries Management Council Geographic Information System (GIS) database, allowing scanned project-specific reports and documents to be linked graphically within the GIS database.
- 8) For Marin, Napa, Santa Cruz, and Sonoma Counties, DFG shall submit an annual report due by January 31 (RGP12) of each year of implemented projects to the US Fish and Wildlife Service Office, 2800 Cottage Way, Sacramento, California 95825. The report must include:
  - a) A table documenting the number of California freshwater shrimp or California red-legged frogs killed, injured, and handled during each FRGP project that utilizes the USACE authorization.
  - b) A summary of how the terms and conditions of the biological opinions (file no. 81420-2009-I-0748-1 and 1-103-F-273) and the protective measures by the USACE and DFG worked.

- c) Any suggestions of how the protective measures could be revised to improve conservation of this species while facilitating compliance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).
- 9) For Santa Barbara and San Luis Obispo Counties, DFG shall submit an annual report due by January 31 (RGP12) and February 28 (RGP78) of each year of implemented projects to the US Fish and Wildlife Service Office, 2493 Portola Road, Suite B, Ventura, California 93003. The report must include:
- a) A table documenting the number of red-legged frogs killed, injured, and handled during each FRGP project that utilizes the USACE authorization.
  - b) A summary of how the terms and conditions of the biological opinions (file no. 81440-2009-F-0387 and 2008-F-0441) and the protective measures by the USACE and DFG worked.
  - c) Any suggestions of how these protective measures could be revised to improve conservation of this species while facilitating compliance with the Act.
- 10) DFG shall submit annual reports on July 1 of each year to the 401 Program Managers of the State Water Resources Control Board and the appropriate Regional Water Quality Control Boards documenting work undertaken during the preceding year and identifying for all such work:
- a) Project name and grant number;
  - b) Project purpose and summary work description;
  - c) Name(s) of affected water body(ies);
  - d) Latitude/longitude in decimal degrees to at least four decimals;
  - e) For projects completed during the year:
    - 1) The type(s) of receiving (affected) water body(ies) (e.g. at minimum: river/streambed, lake/reservoir, ocean/estuary/bay, riparian area, or wetland type); and
    - 2) The total quantity in acres of each type of receiving water body temporarily impacted, and permanently impacted;
  - f) For each water body type affected, the quantity of waters of the U.S. temporarily and permanently impacted. Fill/excavation discharges shall be reported in acres and fill/excavations discharges for channels, shorelines, riparian corridors, and other linear habitat shall also be reported in linear feet;
  - g) Actual construction start and end-dates;
  - h) Whether the project is on-going or completed.
  - i) Copies of reports documenting the following monitoring activities:
    - 1) Post-project monitoring immediately after the activity is completed to ensure that projects are completed as designed; and
    - 2) Effectiveness monitoring on a random subset of 10% of the projects, within one to three years after project completion.

- 11) DFG shall report any previously unknown historic archeological and paleontological remains discovered at a site to the USACE as required in the RGP. This information will also be provided to the Native American Heritage Commission, 915 Capitol Mall, Sacramento, CA 95814.
- 12) Pursuant to RGP78, DFG shall monitor and maintain the structures or work conducted at a given site for at least three years after construction to ensure the integrity of the structure and successful growth of the planted vegetation.
- 13) DFG shall allow representatives of USACE to inspect the authorized activities at any time deemed necessary to ensure that they are being or have been accomplished with the terms and conditions of the RGP.
- 14) Pursuant to RGP78, DFG shall notify the USACE annually of the year's projects and shall not begin the activity until after receiving a written Notice to Proceed (NTP). The NTP may include site specific special conditions to avoid and minimize adverse impacts to waters of the U.S and shall be valid for the duration of the RGP78 unless there is a change in the project's scope of work.