

APPENDIX B
MITIGATION MEASURES, MONITORING AND REPORTING PROGRAM FOR THE
2008 FISHERIES RESTORATION GRANT PROGRAM

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

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.
 - a) Work around streams is restricted to the period of June 15 through November 1 or the first rainfall. 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 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 permissible 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 31, 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 15 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 could affect swallow nesting habitat (such as removal of culverts showing evidence of past swallow nesting), construction will occur after August 31 to avoid the swallow nesting period. Alternatively, the suitable bridge nesting habitat will be netted before initiation of the breeding season to prevent nesting. Netting must be installed before any nesting activity begins, generally prior to March 1. Swallows must be excluded from areas where construction activities cause nest damage or abandonment.

- e) 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) 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.
- 3) 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. 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.
- 4) The grantee shall 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 practicable, invasive exotic plants at the work site shall be removed.
- 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.
- 6) Any equipment work within the stream channel shall be performed in isolation from the flowing stream. If there is any flow when the work is 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. The coffer dams may be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams must be breached to return the stream flow to its natural channel.
- 7) For minor actions, 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), then measures will 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 place after breaching, provided they do not impede the stream flow.
- 8) 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.
- 9) 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 in Title 14 of the California Code of Regulations, also known as the "CEQA Guidelines".

- 10) Any red tree vole nests encountered at a work site will be flagged and avoided during construction.
- 11) 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.
- 12) 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>

Specific Measures for Endangered, Rare, or Threatened Species That Could Occur at Specific Work Sites

Rare Plants

The work sites for the 2008 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 2008 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 2007 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 2008 grants projects, the following mitigation measures will be implemented:

- 1) DFG will survey all work sites for rare plants prior to any ground disturbing activities. Rare plant surveys will be conducted following the "Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities" (DFG, 2000). These guidelines are available on the web at: <http://www.dfg.ca.gov/habcon/>.
- 2) If any special status plant species are identified at a work site, DFG will require one or more of the following protective measures to be implemented before work can proceed:
 - a) Fencing to prevent accidental disturbance of rare plants during construction,
 - b) On-site monitoring by a qualified biologist during construction to assure that rare plants are not disturbed, and
 - c) Redesign of proposed work to avoid disturbance of rare plants.
- 3) 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 will be discontinued.
- 4) DFG shall ensure that the grantee or responsible party is aware of these site-specific conditions, and will inspect the work site before, during, and after completion of the action item.

California freshwater shrimp (*Syncaris pacifica*)

Of the 68 work sites proposed as part of the 2008 grants program, five occurs within the range of California freshwater shrimp (CFS) (San Geronimo Creek Upland Habitat Restoration, Fay Creek Pool Habitat Project, Salmon Creek Estuary Habitat Structures, Riparian Restoration for Salmonid Recovery Sonoma Creek, Green Valley Coho Enhancement IV) (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 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 dated August 17, 2004. DFG proposes to implement the following measures to minimize adverse effects to the CFS and its habitat:

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. In site locations where shrimp are present, DFG will require the grantee to implement the mitigation measures listed:

- 1) Equipment work will 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 will 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 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) DFG must 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 on the shrimp or its habitat. Work shall not recommence until DFG is satisfied that there will be no impact on the shrimp.
- 6) At least 15 days prior to the onset of activities, DFG will submit the name(s) and credentials of biologists who will conduct activities specified in the following measures. The grantee will implement any additional conservation measures requested by DFG and/or the Service.
- 7) 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:
 - a) A second survey will be conducted within 24 hours of any construction activity and relocated. Shrimp will be moved while in the net, or placed in buckets containing stream water and then moved directly to the nearest suitable habitat. Stress and temperature monitoring of shrimp shall be performed by the Service-approved biologist. Numbers of shrimp and any mortalities or injuries must be identified and recorded. Shrimp habitat is

defined as reaches in low elevation (less than 116m) and low gradient (less than 1 percent) streams where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris or overhanging vegetation.

- b) 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.
 - c) Only Service-approved biologists shall participate in the capture, handling, and monitoring of shrimp. DFG will 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.
 - d) If moving the shrimp out of the work area cannot be accomplished, and other avoidance measures have been deemed inappropriate, the DFG will drop activities at the work site from the project.
 - e) Before any construction activities begin 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.
- 8) At any work site that may contain shrimp, all fueling and maintenance of vehicles, other equipment and staging areas shall occur at least 65 feet from any riparian habitat or water body. The grantee shall ensure 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.
- 9) 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.
- 10) Ground disturbing activities in potential shrimp habitat shall be restricted to the period between July 1 and November 1.
- 11) 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.
- 12) 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 Code.
- 13) 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. Revegetated sites shall be irrigated as necessary until vegetation is

established. Revegetated sites shall be monitored until shading and cover achieves 80% of pre-project shading and cover and for a minimum of 5 years.

- 14) No dumping of dead trees, yard waste or brush shall occur in shrimp streams, which may result in oxygen depletion of aquatic systems.

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, forty-one of the 68 work sites proposed as part of the 2008 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:

- 1) Project work within the wetted stream shall be limited to the period between June 15 and November 1, or the first significant fall rainfall. 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).
- 2) 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.
- 3) Work must be performed in isolation from the flowing stream. If there is any flow when the work is done, the operator 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. The coffer dams may be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams must be breached to return the stream flow to its natural channel.
- 4) For minor actions, 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), measures will 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 place after breaching, provided they do not impede the stream flow.
- 5) If it is necessary to divert flow 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 NMFS 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.
- 6) 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*.
- 7) 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.

- 8) Measures shall be taken to minimize harm and mortality to listed salmonids resulting from fish relocation and dewatering activities:
 - a) Fish relocation and dewatering activities shall only occur between June 15 and November 1 of each year.
 - b) DFG shall minimize the amount of wetted stream channel that is dewatered at each individual project site to the fullest extent possible.
 - c) All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act*, June 2000.
- 9) If for some reason 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 will be discontinued.

Tidewater Goby (*Eucyclogobius newberryi*)

Of the 68 work sites proposed as part of the 2008 grants program, twenty-three sites show the tidewater goby listed on the corresponding species lists in Appendix A. Of the twenty-three sites, twenty-one sites are not within the tidal zone and will not affect suitable habitat for the tidewater goby (Albion River Spawning Habitat Enhancement, Lower Maple Creek Riparian Enhancement San Geronimo Creek Upland Habitat Restoration, Garcia Forest Signal Creek Watershed Implementation, San Luis Obispo Creek Watershed Arundo Management Program, Francis Creek, North Fork Lost Man Creek Fish Passage Project, Mill (Watek) Creek Culvert Replacement, Rocky Gulch Road Decommissioning, Freshwater Creek Road Decommissioning Phase III, Elk River Road Decommissioning and Sediment Control Phase II, 2008 Salmon Creek Road Decommissioning, Hall Creek Fish Passage, Lindsey Creek Fish Passage, Coyote Creek Watershed Improvement Additional Sites Project, Glenbrook Gulch Anadromous Fish Habitat Restoration, Kenny Creek and Mud Creek Sediment Reduction, Kenny Creek Habitat Improvement, Fay Creek Pool Habitat Project, Gobernador Creek - Widdoes Fish Passage Enhancement Project, Lion Creek Bridge Replacement) (Appendix A).

Of the twenty-three sites, two sites could potentially affect suitable habitat for the tidewater goby (Salmon Creek Estuary Habitat Structures and Solstice Creek Habitat Enhancement Project) (Appendix A). None of the activities proposed for these sites will significantly degrade existing habitat. If tidewater goby or tidewater goby habitat is encountered the following mitigation measures will be implemented to avoid potential impacts:

- 1) The proponent shall retain a biologist(s) experienced with tidewater goby monitoring, handling and appropriate permits. The biologist will monitor all construction activities and assist the proponent in the implementation of the monitoring program. This person(s) will be approved by the USFWS prior to the onset of ground-disturbing activities. The authorized biologist(s) will be present during all activities immediately adjacent to or within the project site.
- 2) Prior to the onset of any construction activities, the proponent shall request a formal consultation with the USFWS. The proponent shall meet on-site with staff from the USFWS and the authorized biologist(s). The proponent shall provide information on the general location of construction activities within habitat of the tidewater goby and the actions taken to reduce impacts to this species. The proponent, the USFWS, and biologist will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on tidewater goby. The goal of this effort is to reduce the level of mortality of tidewater goby during construction.

- 3) Prior to the onset of construction activities, the proponent shall provide all personnel who will be present on work areas within or adjacent to the project area the following information:
 - a. A detailed description of the tidewater goby including color photographs;
 - b. The protection the tidewater goby receives under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;
 - c. The protective measures being implemented to conserve the tidewater goby and other species during construction activities associated with the proposed project; and
 - d. A point of contact if tidewater goby are observed.
- 4) The USFWS approved biologist(s) must have the authority to stop specific work activities until appropriate corrective measures are taken when unintended effects to tidewater gobies occur. If tidewater gobies are observed within a designated work area and cannot be avoided, all work must stop until the animal leaves the work area or until it is captured and relocated by the USFWS approved biologist(s) to outside of the work area to avoid injury or mortality.
- 5) When tidewater gobies must be captured and removed from the project area the USFWS approved biologist(s) must minimize the amount of time the animal is held in captivity. The animal must not be exposed to temperatures or any other environmental conditions that could cause injury or undue stress. Relocated tidewater gobies must stay within the same watercourse from where they were removed.

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

Thirteen of the work sites proposed as part of the 2008 grants program are within potential habitat for the California red-legged frogs (CRLF) (Appendix A). Activities proposed for the thirteen sites (San Geronimo Creek Upland Habitat Restoration, Demonstration Roads Improvements in the Napa River Watershed, Pescadero Creek Riparian Habitat Improvement Project, Big Dipper Ranch Road Project, Fay Creek Pool Habitat Project, Green Valley Coho Enhancement IV, Riparian Restoration for Salmonid Recovery - Sonoma Creek, Salmon Creek Estuary Habitat Structures, Williams Creek Erosion Prevention Implementation Project, San Luis Obispo Creek Watershed Arundo Management Program, Solstice Creek Habitat Enhancement Project, Gobernador Creek - Widdoes Fish Passage Enhancement Project, Lion Creek Bridge Replacement Project) will not remove or degrade CRLF habitat; however, precautions will be required at this site to avoid the potential for take of CRLF while using heavy equipment at these sites. 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 dated August 17, 2004 and August 13, 2004. DFG proposes to implement the following measures to minimize adverse effects to the CRLF and its habitat:

- 1) At least 15 days prior to the onset of activities, the DFG will submit the names(s) and credentials of biologists who would conduct activities specified in the following measures. No project activities will begin until the DFG has received written approval from the Service that the biologist(s) is qualified to conduct the work.
- 2) A Service-approved biologist will survey the work 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.
- 3) Before any construction activities begin on a project, a Service-approved biologist will 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.

- 4) 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 Corps and Service during review of the proposed action. If work is stopped, the Corps and the Service shall be notified immediately by the Service-approved biologist or on-site biological monitor.
- 5) During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
- 6) All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 65 feet from any riparian habitat or water body. The Corps 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.
- 7) A Service-approved biologist will ensure that the spread or introduction of invasive exotic plant species is avoided to the maximum extent possible. Areas disturbed by project activities will be restored and planted with native plants.
- 8) The number of access routes, number and size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Routes and boundaries will be clearly demarcated.
- 9) Ground disturbing activities in potential red-legged frog habitat will be restricted to the period between July 1 and October 15.
- 10) To control erosion during and after project implementation, DFG will implement best management practices, as identified by the appropriate Regional Water Quality Control Board.
- 11) If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain down stream flows during construction activities and reduce the creation of ponded water. Upon completion of construction activities, any barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
- 12) 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.
- 13) 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 (ie. bullfrogs, crayfish) to the best of the approved biologist's knowledge.

- 14) 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 (eg., 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.
- 15) Biologists who handle red-legged frogs must 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 must be followed at all times.

Arroyo Toad (*Bufo microscaphus californicus*)

Of the 68 work sites proposed as part of the 2008 grants program, three sites (Solstice Creek Habitat Enhancement Project, Gobernador Creek - Widdoes Fish Passage Enhancement Project, Lion Creek Bridge Replacement Project) could potentially affect suitable habitat for the Arroyo Toad (Appendix A). None of the activities proposed for these sites will significantly degrade existing habitat. To avoid potential impact, the following mitigation measures will be implemented:

- 1) The proponent shall retain a biologist who is familiar with arroyo toads to monitor all construction activities and assist the proponent in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. Prior to the onset of any construction activities, the proponent shall request a formal consultation with the USFWS. The proponent shall meet on-site with staff from the USFWS and the authorized biologist. The proponent shall provide information on the general location of construction activities within habitat of the arroyo toad and the actions taken to reduce impacts to this species. Because arroyo toads may occur in various locations during different seasons of the year, the proponent, the Service, and biologist will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on arroyo toads. The goal of this effort is to reduce the level of mortality of arroyo toads during construction. The authorized biologist will be present during all activities immediately adjacent to or within the project site.
- 2) Prior to the onset of construction activities, the proponent shall provide all personnel who will be present on work areas within or adjacent to the project area the following information:
 - a. A detailed description of the arroyo toad including color photographs;
 - b. The protection the arroyo toad receives under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;
 - c. The protective measures being implemented to conserve the arroyo toad and other species during construction activities associated with the proposed project; and
 - d. A point of contact if arroyo toads are observed.
- 3) All trash that may attract predators of the arroyo toad will be removed from work sites or completely secured at the end of each work day.
- 4) Where construction can occur in habitat where arroyo toads are widely distributed, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced. All workers will be advised that equipment and vehicles must remain within the fenced work areas.

- 5) If the authorized biologist determines that fencing to exclude arroyo toads should be installed, he or she will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any arroyo toads from within the fenced area to suitable habitat outside of the fence. If arroyo toads are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary.
- 6) Fencing to exclude arroyo toads will be at least 24 inches in height. The type of fencing must be approved by the authorized biologist.
- 7) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of arroyo toads may congregate will be conducted during times of the year when individuals have dispersed from these areas. The authorized biologist will assist the proponent in scheduling its work activities accordingly.
- 8) If arroyo toads are found within an area that has been fenced to exclude arroyo toads, activities will cease until the authorized biologist moves the arroyo toads.
- 9) If arroyo toads are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the arroyo toads. The authorized biologist will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist.
- 10) Any arroyo toads found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.
- 11) The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.
- 12) Staging areas for all construction activities will be located outside of stream channel in upland areas designated for this purpose. All staging areas will be fenced.
- 13) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.
- 14) Drift fence/pitfall trap surveys will be implemented prior to construction in an effort to reduce potential mortality to this species. Prior to any construction activities in the project area, silt fence shall be installed completely around the proposed work area and a qualified biologist should conduct a preconstruction/ clearance survey of the work area for arroyo toads. Any toads found in the work area should be relocated to suitable habitat within the watershed. The silt fence shall be maintained for the duration of the work activity.
- 15) The proponent shall conduct repair activities after 15 August and before the commencement of the breeding season (February) in riparian areas, except during an emergency, to reduce potential impacts to the arroyo toad. Ongoing maintenance to raised portions of the bridge would not be restricted.
- 16) The proponent shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when arroyo toads may be present on the access road. Construction vehicle traffic during the day is not expected to pose a serious mortality threat to arroyo toads. Traffic speed should be maintained at 20 mph or less in the work area.

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)

Of the 68 work sites proposed as part of the 2008 grants program, two sites (Big Dipper Ranch Road Project and Pescadero Creek Riparian Habitat Improvement Project) could potentially affect suitable habitat for the San Francisco garter snake (Appendix A). None of the activities proposed for these sites will significantly degrade existing habitat. To avoid potential impact, the following mitigation measures will be implemented:

- 1) Prior to the onset of any construction activities, the proponent shall request a formal consultation with the USFWS and obtain all required permits. The proponent shall meet on-site with staff from the USFWS and the authorized biologist. The proponent shall provide information on the general location of construction activities within habitat of the San Francisco garter snake and the actions taken to reduce impacts to this species. Because San Francisco garter snakes may occur in various locations during different seasons of the year, the proponent, the USFWS, and biologist will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on San Francisco garter snake. The goal of this effort is to reduce the level of mortality of San Francisco garter snake during construction.
- 2) The proponent shall retain a biologist who is familiar with the San Francisco garter snake and will monitor all construction activities and assist the proponent in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter in this document. The authorized biologist will be present during all activities immediately adjacent to or within the project site.
- 3) Prior to the onset of construction activities, the proponent shall provide all personnel who will be present on work areas within or adjacent to the project area the following information:
 - a. A detailed description of the San Francisco garter snake including color photographs;
 - b. The protection the San Francisco garter snake receives under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;
 - c. The protective measures being implemented to conserve the San Francisco garter snake and other species during construction activities associated with the proposed project; and
 - d. A point of contact if San Francisco garter snake are observed.
- 4) All trash that may attract predators of the San Francisco garter snake will be removed from work sites or completely secured at the end of each work day.

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

Of the 68 work sites proposed as part of the 2008 grants program, two site (Gobernador Creek - Widdoes Fish Passage Enhancement Project, Lion Creek Bridge Replacement Project) could potentially affect suitable habitat for the Least Bell's Vireo (Appendix A). None of the activities proposed for these sites will significantly degrade existing vireo habitat, but the potential exists for the noise from heavy equipment work and the harvesting of willow branches for revegetation at these sites to disrupt vireo nesting. To avoid this potential impact, the following mitigation measures will be implemented:

- 1) Work shall not begin within one quarter mile of any site with known or potential habitat for the Least Bell's Vireo until after September 15.
- 2) Harvest of willow branches at any site with potential habitat for the Least Bell's Vireo will not occur between March 1 and September 15.

- 3) 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.
- 4) The DFG shall ensure that the grantee or responsible party is aware of this site-specific condition, and will inspect the work site before, during, and after completion of the action item.
- 5) If for some reason 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 Least Bell's Vireo or their habitat, then activity at that work site will be discontinued.

Marbled murrelet (*Brachyrampus 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.

Of the 68 work sites proposed as part of the 2008 grants program, nine are in potentially suitable habitat for the marbled murrelet (Wilson Creek Instream Habitat Enhancement, Wilson Creek Phase 2 Additional Sites, Francis Creek, North Fork Lost Man Creek Fish Passage Project, Eel River Arundo Eradication, Mattole Estuary Area Sediment Reduction (FRGP HU170 lower Mattole), 2008 Salmon Creek Road Decommissioning, Pescadero Creek Riparian Habitat Improvement Project, Big Dipper Ranch Road Project) (Appendix A). None of the activities proposed for these sites will remove, degrade, or downgrade suitable marbled murrelet habitat. Direct injury or mortality 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 will be implemented:

- 1) Adverse effects can be avoided by limiting heavy equipment work within 0.25 mile of marbled murrelet habitat to the period between September 16 and March 23.
- 2) Work shall not begin within 0.25 mile of any site with occupied or un-surveyed suitable marbled murrelet habitat between March 24 and September 15.
- 3) 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.
- 4) If for some reason 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 will be discontinued.

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 between August 1 and January 31.

Of the 68 work sites proposed as part of the 2008 grants program, fourteen are in potentially suitable habitat for the northern spotted owl (Road Decommissioning-Bluff Creek Watershed at Fish Lake, North Fork Lost Man Creek Fish Passage Project, South Fork Bear Creek Culvert Removal for Fish Passage, Iaquia Ranch Roads Sediment Reduction, Rocky Gulch Road

Decommissioning, Freshwater Creek Road Decommissioning Phase III, 2008 Salmon Creek Road Decommissioning, Mattole Bear Creek, Upper Redwood Lacks Creek Erosion Control Additional Sites, Kenny Creek Habitat Improvement, 2008 Standley Creek Watershed Implementation Phase I - SF Eel River, Upper South Fork Road Decommissioning, Hall City Creek, Monroe and Big Slide Creek Road Decommissioning Project) (Appendix A). None of the activities will remove, degrade or downgrade spotted owl habitat. Direct injury or mortality of owls is not an issue. 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:

- 1) Work at any site within 0.25 miles of suitable habitat for the northern spotted owl will not occur from February 1 to July 31.
- 2) The work window at individual work sites may be advanced prior to July 31, if protocol surveys determine that suitable habitat is unoccupied.
- 3) If for some reason 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 will be discontinued and DFG will reinitiate consultation with FWS.

Willow flycatcher (*Empidonax traillii*).

Of the 68 work sites proposed as part of the 2008 grants program, nine are in potentially suitable habitat for the Willow flycatcher (Redwood Creek Salmonid Habitat Improvement Project, 2007 Blue Goo Slide Stabilization Project, 2007 Leggett Creek Bank Stabilization & Fish Habitat Project, Eel River Arundo Eradication, Ettersburg Area Sediment Reduction Project for Coho Recovery (FRGP HU130 Blue Slide), Mattole Bear Creek, Upper Mattole Stream Crossing Decommissioning Project, Jenner Lower Pump Fish Screen, Gobernador Creek - Widdoes Fish Passage Enhancement Project) (Appendix A). None of the activities proposed for these sites will significantly degrade existing willow flycatcher habitat, but 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 will be implemented:

- 1) 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. Heavy equipment work shall not begin within one quarter mile of any site with known or potential habitat for the southwestern willow flycatcher until after September 15.
- 2) Harvest of willow branches at any site with potential habitat for the willow flycatcher will not occur between May 1 and August 31. Harvest of willow branches at any site with potential habitat for the southwestern willow flycatcher will not occur between May 1 and September 15.
- 3) 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.
- 4) 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.
- 5) DFG shall ensure that the grantee or responsible party is aware of this site-specific condition, and will inspect the work site before, during, and after completion of the action item.
- 6) If for some reason 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 will be discontinued.

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 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. Point Arena mountain beavers 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 68 projects proposed as part of the 2008 grants program, two are within the range of the Point Arena mountain beaver (Garcia Forest Signal Creek Watershed Implementation Phase 1, and 2008 Little Jack Creek Fish Passage) (Appendix A). If PAMB or PAMB habitat is encountered during implementation of the projects, the following mitigation measures will be implemented to avoid potential impacts:

- 1) Qualified DFG personnel will survey each work site for PAMB. Qualification of surveyors, survey protocols, and reporting will conform to USFWS's *Guidelines for Project-Related Habitat Assessments and Surveys for Point Arena Mountain Beaver*. Per the *Guidelines*, if the activity status of a burrow is in doubt, or if there is un-surveyed potential habitat, PAMB active presence will be assumed.
- 2) For work sites where PAMB active presence is confirmed or assumed, all protective measures prescribed by USFWS's *Draft Point Arena Mountain Beaver Standard Protection Measures for No-Take Determinations* will be followed, through issuance of a Streambed Alteration Agreement and/or directives to the grantee by the DFG Grant Manager. The protective measures most pertinent to DFG salmonid habitat improvement projects include:
 - a) No operation of noise generating equipment (e.g. chainsaws) within 100 feet of active burrows during the breeding season (December 15 – June 30).
 - b) No operation of mechanical equipment (e.g. backhoes, excavators) within 100 feet of active burrows during the breeding season (December 15 – June 30), and within 50 feet the remainder of the year.
 - c) No ground disturbance (e.g. dumping of boulders) within 500 feet of active burrows during breeding season, and within 100 feet the remainder of the year. No severe ground disturbance (e.g. driving of bridge piles, blasting) within 500 feet of active burrows at any time.
 - d) No habitat modification (e.g. vegetation removal) within 400 feet of active burrows.
 - e) No vegetation modification or removal, or construction of permanent barriers (e.g. fences) at any location or time that may disrupt dispersal or movement of PAMB.
 - f) No vehicular or foot traffic within 25 feet of active burrows, and no alteration of water drainage or hydrology in active burrow areas.
- 3) DFG will require that the Grant Manager must be notified at least one week in advance of the date on which work will start, so that a qualified DFG biologist can monitor activities at the work site. If the necessary protective measures cannot be implemented at a work site, then no work at the site will occur.

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 will 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 will be conducted using standard protocols to meet the 2008 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 will 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 U. S. Army Corps of Engineers as required in the Regional General Permit.
- 4) If it becomes impossible to implement the project at a work site without disturbing cultural or paleontological resources, then activity at that work site will be discontinued.
- 5) DFG shall ensure that the grantee or responsible party is aware of these site-specific conditions, and will inspect the work site before, during, and after completion of the action item.
- 6) 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.

- 7) Inadvertent Discovery of Human Remains - If human remains are discovered during project construction, work will 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 will 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 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 will 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.

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 Native American Heritage Council (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.

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, must be visually reviewed and authorized by NMFS Fisheries (or DFG) engineers prior to commencement 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.
 - c) Effective erosion control measures shall be in-place at all times during construction. Construction within the 5-year flood plain will not begin until all temporary erosion controls (ie, straw bales or silt fences that are effectively keyed-in) are in-place down slope 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.
 - d) Sediment shall be removed from sediment controls once it has reached one-third of the exposed height of the control. Whenever straw bales are used, they shall be staked and dug into the ground 6 inches. Catch basins shall be maintained so that no more than 6 inches of sediment depth accumulates within traps or sumps.
 - e) Sediment-laden water created 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.
 - f) 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.

- g) 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.
- 2) DFG will implement the following measures to minimize harm to listed salmonids resulting from construction in the riparian corridor:
- a) Retain as many trees and brush as feasible, emphasizing shade producing and bank stabilizing trees and brush.
 - b) Use project designs and access points that minimize riparian disturbance without affecting less stable areas, which may increase the risk of channel instability.
 - c) Minimize compaction by using equipment that either has (relative to other equipment available) less pressure per square inch on the ground or a greater reach, thus resulting in less compaction or less area overall compacted or disturbed.
 - d) At the completion of the project, soil compaction that is not an integral element of the design of a crossing should be de-compacted.
 - e) Disturbed and compacted areas shall be revegetated with native plant species. The species used should be specific to the project vicinity or the region of the state where the project is located, and comprise a diverse community structure (plantings should include both woody and herbaceous species). Plant at a ratio of two plantings to one removed plant.
 - f) 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.
 - g) The spread or introduction of invasive exotic plants will be avoided to the maximum extent possible.
- 3) DFG will implement the following measures to minimize harm to listed salmonids resulting from road decommissioning activities:
- a) Woody debris will be concentrated on finished slopes 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 will be winterized at the end of each day when significant rains are forecast that may cause unfinished excavations to erode. Winterization procedures shall 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.

- c) Adequate erosion control supplies (gravel, straw bales, shovels, etc.) shall be kept at all restoration sites to ensure sediment is kept out of water bodies.
- d) 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.
- e) Mulching and seeding is required 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 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.

VII. 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) The grantee shall have dependable radio or phone communication on-site to be able to report any accidents or fire that might occur.
- 2) 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.
- 3) 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.
- 4) Work with heavy equipment will be performed in isolation from flowing water, except as may be necessary to construct coffer dams to divert stream flow and isolate the work site.

- 5) All equipment operators will 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 plan 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 and of the appropriate measures to take should a spill occur.
- 6) 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. 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.
- 7) All fueling and maintenance of vehicles and other equipment shall be located at least 150 feet from any riparian habitat or water body. The grantee shall ensure contamination of habitat does not occur during such operations.
- 8) 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.
- 9) 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.
- 10) No debris, soil, silt, sand, bark, slash, 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.
- 11) All internal combustion engines shall be fitted with spark arrestors.
- 12) 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.
- 13) Vehicles shall not be parked in tall grass or any other location where heat from the exhaust system could ignite a fire.
- 14) The grantee shall follow any additional rules the landowner has for fire prevention.
- 15) 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.) The only other mercury mine contamination within the FRGP-area is in Marin County (Walker Creek), and this contamination is not in instream gravels or dredger tailings, instead it is from the bedrock; and therefore, not easily methylized, and not as bio-available.

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:

- a. Any gravel imported from offsite will be from a source known to not contain historic hydraulic gold mine tailings, dredger tailings, or mercury mine waste or tailings.

VIII. HYDROLOGY AND WATER QUALITY

- 1) Work shall be conducted during the period of lowest flow.
- 2) Work shall be performed in isolation from flowing water. If there is any flow when the work is 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. The coffer dams may be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams must be breached to return the stream flow to its natural channel.
- 3) For minor actions, 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), then measures will 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 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 place after breaching, provided they do not impede the stream flow.
- 4) Before work is allowed to proceed at a site, DFG will inspect the site to assure that turbidity control measures are in place.

IX. LAND USE AND PLANNING

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

X. MINERAL RESOURCES

No specific mitigation measures are required for mineral resources.

XI. NOISE

Personnel shall wear hearing protection while operating or working near noisy equipment (producing noise levels ≥ 85 db, including chain saws, excavators and back hoes).

XII. POPULATION AND HOUSING

No specific mitigation measures are required for population and housing.

XIII. PUBLIC SERVICES

No specific mitigation measures are required for public services.

XIV. RECREATION

No specific mitigation measures are required for recreation.

XV. 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.

XVI. UTILITIES AND SERVICE SYSTEMS

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

MONITORING AND REPORTING

DFG will implement the following measures to ensure that individual restoration projects authorized annually through the RGP 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 USACOE, NMFS 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 will 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 on all completed restoration activities annually. Current monitoring forms and instructions used by DFG are available online at: http://ftp.dfg.ca.gov/Public/FRGP/Qualitative_Monitoring_Forms/. DFG will submit a copy of the final report, no later than March 1 annually to NMFS.
- 4) DFG shall perform effectiveness monitoring on at least 10 percent of restoration projects funded annually. A random sample, stratified by project type and region, will be chosen from the pool of new restoration projects approved for funding each year. Pre-treatment monitoring will be performed for newly selected projects, and post-treatment monitoring will be performed within three years following project completion. Current monitoring forms and instructions used by DFG are available online at: http://ftp.dfg.ca.gov/Public/FRGP/Qualitative_Monitoring_Forms/. DFG will submit a copy of the final report, no later than March 1 annually to NMFS.
- 5) The DFG shall prepare an annual report to be submitted to NMFS by March 1 of each year. This report will provide 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, 4th field HUC and evolutionary significant unit (ESU). The report shall include the following project-specific summaries, stratified at the individual project, 4th 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.
 - 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 (feet) of aquatic habitat disturbed at each project site.
- 6) DFG shall incorporate project data into a format compatible with the DFG/NMFS/Pacific Fisheries Management Council Geographic Information System (GIS) database, allowing scanned project-specific reports and documents to be linked graphically within the GIS database.
- 7) For Alameda, Contra Costa, Lake, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties, DFG must submit an annual report due by January 31 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 red-legged frogs killed, injured, and handled during each Program project that utilizes the Corps authorization.
 - b) A summary of how the terms and conditions of this biological opinion and the protective measures by the Corps and DFG worked.
 - c) Any suggestions of how these measures could be revised to improve conservation of this species while facilitating compliance with the Act.
- 8) For Monterey, San Benito, San Luis Obispo, and Santa Cruz counties, DFG must submit an annual report due by January 31 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 Program project that utilizes the Corps authorization.
 - b) A summary of how the terms and conditions of this biological opinion and the protective measures by the Corps and DFG worked.
 - c) Any suggestions of how these measures could be revised to improve conservation of this species while facilitating compliance with the Act.
- 9) DFG will submit annual reports on July 1 of each year to the 401 Program Managers of the State Water Resources Control Board and the appropriate RWQCB(s) documenting work undertaken during the preceding year and identifying for all such work the following:
- 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) Type(s) of receiving water body(ies);

- 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.
- 10) DFG shall report any previously unknown historic archeological and paleontological remains discovered at a site to the U. S. Army Corps of Engineers as required in the Regional General Permit. This information will also be provided to the Native American Heritage Commission, 915 Capitol Mall, Sacramento, CA 95814.