



**DEPARTMENT OF THE ARMY REGIONAL PERMIT 14
FOR
THE ALAMEDA COUNTY PERMIT COORDINATION PROGRAM**

SPONSORS: U.S. Natural Resources Conservation Service and the Alameda County Resource Conservation District

PERMIT NO.: 27770S

ISSUING OFFICE: San Francisco District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate District or Division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

Authorized Work: The U.S. Natural Resource Conservation Service (NRCS) and the Alameda County Resource Conservation District (ACRCD), which form the Conservation Partnership, are hereby authorized to implement and maintain the eighteen conservation practices (described in RGP 14 Table 1) on agricultural lands in Alameda County, California.

All projects shall be implemented on private properties within Alameda County. The program will primarily serve the ranching community in the eastern, rural portion of Alameda County and landowners with streamside properties in rural-urban interface areas. The program area consists of all agricultural lands in eastern Alameda County and all waterways within Alameda County. The major watersheds are the Alameda Creek, San Leandro Creek, and San Lorenzo Creek watersheds.

The program will NOT cover projects occurring in stream reaches that are currently known to support steelhead (*Oncorhynchus mykiss*): Alameda Creek below the inflatable dams, San Lorenzo Creek below Cull and Don Castro Dams, San Leandro Creek below Chabot Reservoir, or Codornices Creek, or in Alameda County's San Francisco Bayfront salt marsh or estuary habitats.

Actions that NRCS will facilitate on private lands in Alameda County under the Conservation Partnership Program will be limited to the installation and maintenance of eighteen conservation practices. Standards and/or Specifications for each conservation practice are found in the NRCS' electronic *Field Office Technical Guide, Section IV* (www.ca.nrcs.usda.gov/technical). All work shall be completed in accordance with the NRCS Conservation Practice Standards dated July 2000. These conservation practices will primarily be performed for erosion control or restoration in and around waterways. All practices or sets of practices will be installed according to a site-specific plan and engineered design. Landowners will agree to follow NRCS designs and specifications for conservation work and to comply with all regulatory conditions governing project installation and maintenance.

NRCS and ACRCD will maintain oversight of all individual projects through their planning, installation, and monitoring; ensure projects are implemented properly; and provide annual reports to the Corps and other regulatory agency participants. NRCS shall notify the Corps annually each spring of proposed projects to allow review and approval prior to project construction. No project in the annual notification shall be implemented until the Corps has provided written approval that the project is suitable for inclusion in the Alameda County Permit Coordination Program

PERMIT CONDITIONS:

GENERAL CONDITIONS:

1. The time limit for completing the work authorized ends on **April 30, 2012**. The Regional General Permit will automatically expire on this date and can not be extended beyond this initial five-year authorization period, pursuant to the provisions of 33 C.F.R. § 325.2(e)(2). Any authorized project under construction or under contract to commence construction prior to this expiration date shall remain authorized under the Regional General Permit, provided all work in jurisdictional waters of the United States is completed within twelve (12) months thereafter.

2. Staging areas shall be on upland sites where available. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance (e.g., use of low ground pressure vehicles).
3. No discharge of dredged or fill material into waters of the United States may consist of unsuitable material (e.g., trash, debris) and material discharged must be free of toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
4. Discharges of dredged or fill material into waters of the United States must be minimized or avoided to the maximum extent possible at each project site.
5. Any structure or fill authorized under this regional permit shall be properly maintained.
6. No activity authorized under this permit may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area.
7. If you discover any previously unknown historic or archeological remains while accomplishing an activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
8. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
9. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

SPECIAL CONDITIONS:

1. This Regional General Permit does not authorize the take of an endangered species. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit or a Biological Opinion (BO) under ESA Section 7 with "incidental take" provisions with which you must comply). The U.S. Fish and Wildlife Service (USFWS) issued a *Programmatic Formal Endangered Species Consultation on the Natural Resources Conservation Service's Proposed Partners in Restoration Alameda County Permit Coordination Program, Alameda County, California* (Reference Number 1-1-04-F-0062), dated August 12, 2004, and *Confirmation of the Conference Opinion for the California Tiger Salamander as the Biological Opinion and Conference Opinion on Proposed Critical Habitat for the California Tiger Salamander for the Partners in Restoration Alameda County Permit Coordination Program, Alameda County California* (Reference Number 1-1-05-F-0073), dated June 7, 2005, which contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BOs. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take authorized by the BOs, whose terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take and it would also constitute non-compliance with this Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.
2. NRCS shall notify the Corps annually each spring of proposed projects to allow review and approval prior to project construction. The pre-construction notification will consist of a table containing site-specific information for each project. The permitting agencies may provide additional conditions on individual projects. NRCS will then incorporate these additional agency conditions into the conservation plan and engineered design for a project.
3. No project in the annual notification shall be implemented until the Corps has provided written approval that the project is suitable for inclusion in the Alameda County Permit Coordination Program.

4. The program will not cover projects occurring in stream reaches that are currently known to support steelhead (*Oncorhynchus mykiss*): Alameda Creek below the inflatable dams, San Lorenzo Creek below Cull and Don Castro Dams, San Leandro Creek below Chabot Reservoir, or Codornices Creek, or in Alameda County's San Francisco Bayfront salt marsh or estuary habitats.
5. This permit program will not cover projects that involve any work in fish-bearing streams, salt marshes or estuaries; such projects will require site specific permits. Additionally, the program will not cover any projects conducted in vernal pool habitat, projects with serpentine soils or alkali-sink habitat in the work area, nor will it include any projects with soil types and habitat conditions typical of known pallid manzanita occurrences.
6. This permit program will not cover projects that involve any work in wetlands.
7. This program will not authorize any project that will result in losses of waters, excluding wetlands, greater than half an acre.
8. The general construction season will be from June 15 to October 15 (dry season); however, modifications to that time frame may be made on a site-specific and/or species-specific basis. The timing of construction for individual projects will take into consideration federally and State-listed and proposed fish, wildlife, and plants potentially occurring in a project area. Where habitat for listed and proposed species is identified on or adjacent to the project work site, the timing of construction and related activities will be restricted to avoid disturbance to the breeding, feeding, mating, and sheltering of these species. Work beyond the proposed construction period may be authorized following consultation with USFWS, NMFS, RWQCB and/or CDF&G, provided the work would be completed prior to first winter rains and stream flows. The Corps shall be notified of any work conducted outside of the general construction season.
9. The total area of a project site, including the number and size of access routes and staging areas, will be limited to the minimum necessary to achieve the project goal. Disturbance to existing grades and vegetation will be limited to the smallest areas possible. Placement of staging areas and other facilities will avoid and limit disturbance to habitat as much as possible. Routes will be clearly demarcated and will be outside of riparian, wetland areas, and other habitats wherever possible.
10. No creosote treated timbers shall be used for grade or channel stabilization structures, bulkheads, or other instream structures. Concrete will not be used in fish-bearing streams and may only be used above the ordinary high water mark of waters of the U.S. Grouted rock will not be used below the ordinary high water mark of waters of the U.S.
11. No debris, rubbish, creosote-treated wood, soil, silt, sand, cement, concrete, or washings thereof, or other construction related materials or wastes, oil or petroleum products or other organic or earthen material shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into waters of the U.S. Any of these materials placed within or where they may enter waters of the U.S. by the Applicant or any party working under contract, or with the permission of the Applicant shall be removed immediately. When construction is completed, any excess material shall be removed from the work area and any areas adjacent to the work area where such material may be washed into waters of the U.S. During construction, the contractor shall not dump any litter or construction debris within the riparian/stream zone. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.
12. A contained area will be designated for equipment storage, short-term maintenance, and refueling. It will be located at least 50 feet from water bodies. If site conditions (property size) make this 50-foot distance infeasible, these activities will occur at the maximum distance possible from water bodies. Vehicles will be inspected daily for leaks and repaired immediately. Leaks, drips, and other spill will be cleaned up immediately to avoid soil or groundwater contamination. Major vehicle maintenance and washing will be done off site. All spent fluids including motor oil, radiator coolant, other fluids, and used vehicle batteries will be collected, stored, and recycled as hazardous waste off site.
13. To the greatest extent possible, excavated materials will be used on site. In the rare situations where excavated material is not used in the implementation of a practice, it will be removed and moved outside of Corps' jurisdiction.

14. Heavy equipment will perform work from the top of the creek banks and use existing ingress or egress points wherever possible. Heavy equipment will not enter flowing or standing water, except to cross a stream or pond to access the work site, where no other access is available.
15. If it is necessary to conduct work in or near a live stream, the workspace will be isolated from flowing water to prevent sedimentation and turbidity. Prior to construction activities, sandbag cofferdams, straw bales, silt fences, culverts, or visqueen will be installed to divert streamflow away from or around workspace at an appropriate rate to maintain downstream flows during construction. Excavating a channel for the purpose of isolating the workspace from flowing water is prohibited.
16. Excavation and grading activities will be conducted only during dry weather.
17. Prior to the start of the rainy season, ACRCD/NRCS shall ensure that disturbed areas of creek banks and disturbed areas that drain to the creeks are protected with correctly installed erosion control measures (jute, straw, coconut fiber erosion control fabric, coir logs, straw, etc.), and revegetated with propagules (seeds, cuttings, divisions) of locally collected native plants.
18. Where areas of bare soil are exposed during the rainy season, silt control measures shall be used where silt and/or earthen fill threaten to enter waters of the U.S. Silt control structures shall be monitored for effectiveness and shall be repaired or replaced as needed. Build up of soil behind silt fences shall be removed promptly and any breaches or undermined areas repaired at once.
19. The project area vegetation will be restored to pre-construction condition or better. Native plants characteristic of the local habitat type will be used when installing and maintaining practices in natural areas. Locally collected native plant materials will be used for propagation and planting, where feasible. However, non-invasive, non-persistent grass species (i.e., barley grass) may be used as nurse crops or for their temporary erosion control benefits to stabilize disturbed slopes until natives are established.
20. The spread or introduction of exotic plant species will be avoided to the maximum extent possible by avoiding areas with established native vegetation during project activities, restoring disturbed areas with native species where appropriate, and conducting post-project monitoring and control of exotic species. Mechanical removal (hand tools, weed whacking, hand pulling) of exotics will be done in preparation for establishment of perennial plantings. To the extent possible, the site will be revegetated at the same time as exotic vegetation is removed. Giant reed or other invasive species that can establish from cuttings will be disposed of in a manner that will not allow re-establishment to occur.
21. The design and installation of conservation practices in potential anadromous fish streams shall be consistent with the California Department of Fish and Game's *Culvert Criteria for Fish Passage* (2002) and the National Marine Fisheries Service Southwest Region's *Guidelines for Salmonid Passage at Stream Crossings* (2001).
22. Landowners shall agree to monitor the conservation practices, and to allow ACRCD/NRCS staff to monitor on-site compliance with all permit requirements, until implementation of practices is complete. Pre-construction and construction monitoring of Permit Coordination Program-sponsored conservation practices will consist of surveys and/or inspections, as needed, to ensure compliance with all permit requirements until implementation of practices is complete.
23. If a landowner and/or land manager does not carry out work in compliance with project design standards and specifications, including the previously agreed upon terms and conditions, ACRCD or NRCS will notify the landowner and/or land manager and work directly with them to resolve the problem. If the landowner and/or land manager still fails to comply, ACRCD or NRCS will notify the landowner and/or land manager that their activities are no longer covered by the Permit Coordination Program's permits and agreements. The landowner and/or land manager will then be responsible for obtaining regulatory review and individual permits from the appropriate regulatory agencies and will be held liable for all violations. ACRCD or NRCS will notify the Corps of any projects that are no longer covered under the Permit Coordination Program's permits.

24. ACRC/D/NRCS shall require that each project establish a sufficient number of photo-documentation points to evaluate the progress of the project. For each project, a site map with the photo-documentation points clearly marked will be prepared. Prior to construction, the ACRC/D/NRCS shall photographically document the condition of the Project site. Following construction, the ACRC/D/NRCS shall photographically document the immediate post-construction condition of the site. Pre-project photos, site maps with photo-documentation points, and post-construction photos shall be included in the annual Permit Coordination Program report to the Corps.
25. ACRC/D/NRCS will report the status of all projects to the permitting agencies in the form of an annual post-construction report, due January 31 of each year of the Permit Coordination Program. The report will list participating landowners, provide a description of each project, and a summary of the surface area affected, the yards of impact (as fill and/or excavation) and the slope of the work site. The report will list conservation benefits and any net gains in wetlands and riparian areas, describe actions taken to avoid adverse effects to listed species, and provide photo documentation of before project and current site conditions.
26. Post-construction monitoring of Permit Coordination Program-sponsored conservation practices will consist of erosion control inspections to determine if the system is still functioning as planned, photo-documentation, and preparation of an annual report to the resource agencies. Photographs shall be taken from staked photo-documentation points before construction and annually thereafter throughout the term of the monitoring program. All construction sites shall be inspected at least twice during the first rainy season after installation. Each site will also be inspected once at the end of the rainy season for the first 5 years following construction.

FURTHER INFORMATION:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

Section 404 of the Clean Water Act (33 U.S.C. Section 1344).
2. Limits of this authorization:
 - a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.
 - e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. **Reliance on Applicant's Data:** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. **Reevaluation of Permit Decision:** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate. (See Item 4 above.)
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 C.F.R. Section 325.7 or enforcement procedures such as those contained in 33 C.F.R. Sections 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 C.F.R. Section 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

RGP 14 Table 1. Conservation Practices

1. Access Roads (Improvement) (560)	<p>This practice will be used to improve travelways to reduce soil erosion, minimize the frequency of grading, and provide safe passage. No new roads will be established though new segments may be recommended to repair or replace improperly placed roads or failed locations. Existing roads will be improved (<i>e.g.</i>, graded, drainage structures installed, etc.) to move livestock, produce, or equipment, or to improve access for property management while controlling runoff to prevent erosion. Sound engineering practices will be followed to ensure that the road improvement design meets the requirements of the existing use and that maintenance requirements do not exceed operating budgets. Drainage structures (<i>i.e.</i>, culverts, bridges, or grade dips) will be incorporated into road improvement designs dependent on the runoff conditions to maintain or improve water quality. Roadside ditches, water breaks, water bars, or drop inlets will be used to control surface runoff when necessary. Road banks and disturbed areas will be vegetated as soon as possible, using site-specific revegetation plans. Watercourses and water quality will be protected during and after construction by erosion-control measures and regular maintenance. Associated filter strips, sediment and water control basins, and other conservation practices will be used and maintained as needed. Additionally, parking space as needed will be provided to keep vehicles off the road or from being parked in undesirable locations.</p>
2. Critical Area Planting (342)	<p>This practice will be used to stabilize the soil, reduce damage from sediment and runoff to downstream areas, and improve wildlife habitat and visual resources. Trees, shrubs, vines, grasses, or legumes will be planted on highly erosive or critically eroding areas. The resulting vegetation cover will be expected to reduce the amount of soil nutrients washed into surface waters or leached into ground water.</p> <p>When placing or maintaining a critical area planting above the high water mark, workers will install filter fabric fence, fiber rolls, and/or hay bales, if needed, to keep sediment from flowing into the adjacent water body. When vegetation is sufficiently mature to provide erosion control, it may be appropriate to remove the fence, fiber rolls, and/or hay bales. Annual review by NRCS will occur until the critical area planting is established and providing effective erosion control.</p> <p>In most circumstances, organic compost will be used to ensure successful establishment of restoration vegetation associated with the practices. Chemical fertilizers will not be used in the stream area to hasten or improve the growth of critical area plantings, except where organic composts will not guarantee adequate establishment of restoration vegetation. In these instances, fertilizers will only be used above normal high water mark and only during the year of planting. Application rates will be based on soil nutrient testing and will utilize slow-release or split applications to minimize leaching and runoff into water bodies. Pesticide use will be limited to the use of herbicides to control established stands of non-native species including cape ivy (<i>Senecio mikanioides</i>) and giant reed (<i>Arundo donax</i>). Herbicides will be applied to those species according to the registered label conditions. Herbicides will be applied directly to plants and will not be spread upon water.</p>

3. Diversion Structures = Overland Flow Interceptors for Use in Upland Areas (362)	<p>The installation of overland flow interceptors (diversion structures) will involve constructing earth channels across a slope with supporting ridges on the lower side. This practice will assist in the stabilization of a hillside by decreasing the length of slope and thus reducing sheet and rill erosion and the formation of gullies. Consequently, the amount of sediment and related pollutants delivered to surface waters will be reduced.</p> <p>Diversions established as a temporary measure will have a life span of less than two years and will be able to carry, at a minimum, the 2-year, 24-hour duration storm event. All other long-term diversion structures will have the capacity to carry the peak runoff from a 10-year frequency, 24-hour duration storm event at a minimum. Locations of the structures will be based on outlet conditions, topography, land use, agricultural operations, and soil type. Diversions will not be used below high sediment-producing areas unless land treatment practices or structural measures that are designed to prevent damaging accumulations of sediment in the channels are installed prior to or at the same time as the diversion structure. If movement of sediment into the channel is a significant problem, a vegetated filter strip (Conservation Practice 393) will be used where feasible (e.g., soil or climate does not preclude its use).</p>
4. Filter Strips (393)	<p>Filter strips or areas of vegetation will be used at the lower edges of fields, pastures, or other areas adjacent to streams, ponds, and lakes to remove sediment, organic matter, and other pollutants from runoff and wastewater. Installation often requires soil manipulation to remove surface irregularities and to properly address water movement through the filter strip. Pesticides and nutrients may be removed from runoff flowing through the vegetated filter strip by infiltration, absorption, adsorption, decomposition, and volatilization thereby protecting water quality downstream. Filter strips may also reduce erosion on the area on which they are constructed although they may not filter out some soluble or suspended fine-grained materials, especially during heavy rain events.</p>
5. Grade Stabilization Structures (410)	<p>This practice refers to the installation of grade stabilization structures into creek beds, pond spillways, channel bottoms, or gullies which will be used to control the grade and prevent head-cutting in natural or artificial channels. This practice refers to rock, concrete, or timber structures that do not control the rate of flow or water level in channels. Stream scouring will be reduced above and below the structure resulting in reduced stream bank and streambed erosion. This will decrease the yield of sediment and sediment-attached substances. The reduction in sediment will improve downstream water quality.</p> <p>If working in flowing water is necessary, NRCS will require landowners to isolate or dewater the site. Water will be diverted by installation of a temporary barrier. All water above the barrier will be diverted downstream at an appropriate rate to maintain downstream flows during construction. Adequate water depth and channel width will be maintained at all times to allow for fish passage. When construction is completed, the barriers to flow will be removed in a manner that will allow flow to resume with the least disturbance possible to the substrate.</p> <p>This practice refers to the installation of grade stabilization structures into creek beds, pond spillways, channel bottoms, or gullies which will be used to control the grade and prevent head-cutting in natural or artificial channels. For the purposes of our program, this practice will not be installed in fish-bearing streams and will primarily be used for gully repair. This practice refers to rock, timber, or vegetative structures, such as a brush mattress, placed to slow water velocities</p>

	above and below the structure, resulting in reduced stream bank and streambed erosion. This will decrease the yield of sediment and sediment-attached substances and improve downstream water quality.
6. Grassed Waterways (412)	<p>NRCS will use this practice for the control of runoff by shaping or grading natural or constructed channels and planting the area to grass. This practice may reduce erosion in areas of concentrated flow (<i>e.g.</i>, gullies) and result in the reduction of sediment and substances delivered to receiving waters. Vegetation may act as a filter in removing some of the sediment delivered to the waterway, although this is not the primary function of a grassed waterway. Grassed waterways may be used to move runoff from agricultural lands into riparian or wetland areas or move excess runoff from ponds to riparian areas. Native or non-persistent, non-invasive non-native plant species will be used where feasible</p> <p>A grassed waterway is a natural or constructed channel that is shaped or graded to required dimensions and velocities, and established to suitable vegetation for the stable conveyance of runoff. This practice may reduce the erosion in a concentrated flow area, such as a gully. This may result in the reduction of sediment and substances delivered to receiving water. Vegetation may act as a filter in removing some of the sediment delivered to the waterway, although this is not typically the primary function of a grassed waterway. Grassed waterways may be used to move runoff from agricultural lands into riparian or wetland areas or into a sediment basin. Grading and seedbed preparation may result in some short-term soil loss prior to establishment of vegetative cover.</p>
7. Obstruction Removal (500)	NRCS will use obstruction removal where existing obstructions and material at a project site prevent or hinder the installation of conservation practices or otherwise adversely affect the environment. Obstructions may include, but are not limited to, concrete, asphalt, structural steel, trash, rock, or wood. Unwanted vegetative material such as hedgerows, non-native invasive species like eucalyptus, arundo, and other exotics are included in the practice. All material removed that could not be utilized or disposed of onsite will be removed and disposed of in an environmentally acceptable manner. Any areas where vegetation removal was removed will be replanted with native vegetation.
8. Pipeline (516)	Pipeline installation will be used to shift livestock to constructed water sources and away from streams and lake to reduce bank erosion, sediment yield, and manure deposition in watercourses. It includes the installation of pipelines for conveying water from springs or ponds to alternative locations. Occasionally, pipelines may cross streams or other watercourses.
9. Pond Restoration (378R)	For purpose of this program, pond restoration will be limited to the repair, improvement, and maintenance of existing farm pond structures. This practice will reduce soil erosion and sedimentation, improve and provide long-term habitat protection, and improve livestock water availability. This practice will be used to repair and improve emergency spillways, provide alternative pipe outlets for water flow, and desilt the pond. No new in-stream pond applications will be approved with this practice.
10. Riparian Forest Buffer (391)	The establishment of riparian forest buffers will serve to reduce sediment, nutrient, and other contaminant loading to streams and water bodies and to improve wildlife habitat. This practice will be used to create shade to lower water temperatures, provide a source of detritus and large woody debris for fish and other aquatic organisms, and provide riparian habitat and corridors for wildlife. This practice will be applied on stable areas adjacent to water bodies and will

	consist of native vegetative plantings ultimately resulting in forest canopy and understory development.
11. Sediment Basins (350)	<p>This practice will consist of the construction of basins to collect and store debris or sediment. Sediment basins will trap sediment, sediment-associated materials, and other debris to prevent undesirable deposition in waterways and other bottomlands. Basins will generally be located at the base of sloping agricultural lands adjacent to natural drainage or riparian areas. The practice will not treat the source of sediment but rather will provide a barrier to reduce degradation of surface water downstream. Although some ground water recharge may occur, little if any pollution hazard is expected. The design of spillways and outlet works will include water control structures, such as energy dissipaters, to prevent scouring at the discharge point into the natural drainage.</p> <p>Sediment basins will not be constructed in a stream channel or other permanent water body. However, the work may involve grading along one shore of the stream to remove gullies or eroded banks prior to building a stream-side basin. When construction of a sediment basin includes a pipe or structure that empties into a stream, an energy dissipater will be installed to reduce bank scour.</p>
12. Spring Development (574)	Spring development will consist of capping or collecting water at a spring or seep and transporting it through pipelines to tanks or troughs to provide alternative livestock watering facilities. The area around the water source may be fenced to exclude livestock. This practice will facilitate better rangeland management by improving the distribution of water and will allow for the exclusion of livestock from streams, ponds, and lakes. Development will be confined to springs or seep areas that could furnish a dependable supply of water. Water flow from the spring or seep may be temporarily reduced during the construction period.
13. Stream Bank Protection (580)	This practice will consist of the use of vegetation or structures to protect banks of streams, lakes, estuaries, or excavated channels against scour and erosion. This activity will protect banks of water bodies, reduce sediment loads, and improve fish and wildlife habitat; it will also protect adjacent land from erosion damage. NRCS will apply this practice to natural or excavated channels where streambanks are susceptible to erosion from the action of water or debris or to damage from livestock or human activities.
14. Stream Channel Stabilization (584)	<p>This practice will consist of the use of suitable structures to stabilize stream channels and will be used for stream channels undergoing damaging aggradation (filling in of) or degradation that cannot be controlled by upstream practices. This practice will also improve riparian vegetative growth and provide more favorable habitat for wildlife. This practice may also include the removal of accumulated sand or sediment. If it is necessary to work in a flowing waterway, the site will be isolated or dewatered and the water above the barrier will be diverted downstream at an appropriate rate to maintain downstream flows during construction.</p> <p>Adequate water depth and channel width will be maintained at all times to allow for fish passage. At the completion of construction, the barriers to flow will be removed in a manner that will allow flow to resume with the least disturbance possible to the substrate.</p>
15. Stream Habitat Improvement and Management (formerly identified as Fish Stream Improvement) (395)	This practice will be used to create new fish habitat or to enhance an existing habitat. This practice will be used to improve or enhance aquatic habitat for fish in degraded streams, channels, and ditches by providing shade, controlling sediment, and restoring pool and riffle stream characteristics. Pools and riffles are formed in degraded stream sections through the strategic placement of logs, root wad, or

	<p>natural rocks that reduces the flow velocity through the area. Coarse-grained sediments settle reducing the quantity of sediment delivered downstream. The dissolved oxygen content may be increased, improving the stream's assimilative capacity. Increased shading from shrub and tree plantings will decrease water temperature during the warm season. This practice may also be used for removal or modification of fish barriers such as flashboard dams or logjams. This practice may be used to remove culverts that pose barriers to fish passage.</p>
16. Structure for Water Control (587)	<p>Water control structures will serve to properly convey overland flow or concentrated water flow into a drainageway or under a road, for example, as part of improvement designs for access roads (560) or for fish screens. This practice applies to permanent structures needed to control the elevation of water and to modify water flow to provide habitat for fish, wildlife, and other aquatic animals. Practice specifications may include corrugated metal pipe (culverts) and fish screens.</p>
17. Underground Outlets (620)	<p>This practice will consist of the installation of conduit beneath the surface of the ground to collect surface water and convey it to suitable outlets. Excess surface water from rangeland or other areas on steep terrain will be collected and conveyed to a sediment basin, pond, or stream by installing pipelines underground. Location, size, and number of inlets will be determined on a project-specific basis to collect excess runoff and prevent erosive surface flow.</p>
18. Water and Sediment Control Basins	<p>This practice will consist of the construction of earthen embankments or a combination ridge and channel across slopes or minor watercourses to form sediment traps and water detention basins. This practice will trap and remove sediment and sediment-attached substances from runoff. Trap control efficiencies for sediment and total phosphorous transported by runoff may exceed 90 percent for silt loam soils. Salts, soluble nutrients, and soluble pesticides will be collected with the runoff and will not be released to surface waters. Although some ground water recharge may occur, little if any pollution hazard is expected, as previously noted for Sediment Basins (Conservation Practice 350). Basins will usually be located alongside riparian or wetland environments to buffer the impact of runoff and sediment delivery prior to release to the natural drainage. Basins will reduce concentrated off-site flow and associated erosion by the metered release of runoff following large storm events.</p>