

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

FISH STREAM IMPROVEMENT

(feet)
CODE 395

DEFINITION

Improving a stream channel to make a new fish habitat or to enhance an existing habitat.

PURPOSES

To increase the production of desired species of fish.

CONDITIONS WHERE PRACTICE APPLIES

In streams where poor habitat limits production of desired species.

CRITERIA

Providing Shade

Shade and cooler water are provided by establishing and maintaining adapted tree species along stream banks.

Deepening and Altering Stream Flow Characteristics

Deep water can be created by installing drop structures or check dams, flashboard dams, deflectors, and digger logs. Any structures installed must allow fish passage.

Control of Sediment

Good land treatment measures should be applied in the watershed to prevent erosion and siltation.

Permits

The State Department of Fish and Game should be notified before any stream improvement practices are undertaken that alter the streambed as per Section 1600 of the Fish and Game Code. Depending on work proposed other permits may be required also, such as, under Section 404, Clean Water Act from the Corps of Engineers.

CONSIDERATIONS

When planning for fish stream improvement, the planner should keep in mind that undesirable stream characteristics may be symptoms of upstream land use or land use practices. Streams should be properly classified and evaluated to better understand potentials and limits of the particular stream before prescribing treatment.

Water Quantity

This practice has an insignificant effect on the quantity of surface and ground water.

1. Effects on the water budget.

Water Quality

This practice may improve the water quality of the fishery. Shading may decrease the water temperature during the warm season months. The dissolved oxygen content may be increased, improving the streams assimilative capacity. Pools and riffles are formed, reducing the flow velocity through the pool area. Coarse-grained sediments settle, changing the quantity and type of sediment delivered downstream.

1. Effects on channel erosion and the movement of sediment and soluble and sediment-attached substances that would be carried by runoff.
2. Effects on wetlands or water-related wildlife habitats.
3. Short-term and construction-related effects on the quality of water resources.
4. Effects on stream temperatures to provide desired effects for aquatic and wildlife communities.
5. Effects on the visual quality of water resources.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that critical periods, such as spawning, eggs in gravels, and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example there should be no disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

PLANS AND SPECIFICATIONS

Plans and specifications for installing this practice shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Methods for providing or improving food supply, shelter, spawning areas, water quality, or other elements of fish habitat, shall be specified.

Plans, drawings, and specifications for site installations shall be reviewed by a NRCS Biologist prior to commencement of any installation operations.

OPERATION AND MAINTENANCE

An operation and maintenance plan must be prepared for use by the owner or other responsible for operating this practice prior to the application of this practice. The plan should provide specific instructions for operating and maintaining the system to insure that it functions properly. It should also provide for periodic inspections and prompt repair or replacement of damage components.