

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

Stream Channel Stabilization

(Feet)

Code 584

DEFINITION

Stabilizing the channel of a stream with suitable structures.

PURPOSES

To control aggradation or degradation in a stream channel.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to stream channels undergoing damaging aggradation or degradation that cannot be feasibly controlled by clearing or snagging, by the establishment of vegetative protection, or by the installation of upstream water control facilities.

CRITERIA

It is recognized that channels may aggrade or degrade during a given storm or over short periods. A channel is considered stable if over long periods the channel bottom remains essentially at the same elevation. The channel in hard bedrock may be considered stable, but the erosive energy will be expended on the softer alluvial bank materials, causing "skating" along the bedrock bottom.

In the design of a channel for stability, consideration shall be given to the following points:

1. The character of the materials comprising the channel bottom.
2. The quantity and character of the sediments entering the reach of channel under consideration. This shall be analyzed on the basis of both present conditions and projected changes caused by changes in land use or land treatment and upstream improvements or structural measures.
3. Streamflow peaks, velocities, and volumes at various flow frequencies.
4. The effects of changes in velocity of the stream produced by the structural measures.

Structures installed to stabilize stream channels shall be designed and installed to meet NRCS standards for the particular structure and type of construction.

Vegetative establishment

Vegetation will be established on all disturbed channel slope areas, berms, spoil and other areas according to Standards and Specifications Streambank and Shoreline Protection (580).

CONSIDERATIONS

Stream channel stabilization should be part of the treatment needed to protect the soil, water, plant and air resources. The management system must be planned to prevent excessive maintenance and operation problems.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Effects on water quantity and quality shall be considered. This practice will have no significant change on the total volume of runoff or the potential for groundwater recharge. Water tables in areas adjacent to the practice may be altered causing changes in soil moisture storage, rooting depths and the transpiration rate of vegetation affected by the practice.

The surface disturbance of the construction area may temporarily increase the potential for erosion and delivery of sediment and sediment-attached substances to the stream. The constructed channel stabilization measure will provide a stable channel, and over time a decrease in sediment yield will result. Vegetation that is removed in the construction area to install the practice may reduce shade on the channel and water temperature may increase. The effect of the practice on aquatic communities residing in the channel would depend on the ecosystems present in the channel and adjacent area both before and after the construction and the length of time of the installation. The design of the stabilization measure should maintain or improve the quality of these fish and wildlife communities as far as can be compatible with the design and scope of the practice.

Special attention shall be given to maintaining and improving visual resources and habitat for fish and wildlife. The landowner/user shall be advised if wetlands will be affected and USDA-NRCS wetland policy will apply. All work planned shall be in compliance with General Manual, Title 450-GM, Part 405, Subpart A, Compliance with Federal, State, and Local Laws and Regulations. If archaeological and historical properties are encountered, the USDA-NRCS policy in General Manual, Title 420-GM, Part 401 shall be followed.

PLANS AND SPECIFICATIONS

Plans and specifications for stream channel stabilization shall be in keeping with this

standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Construction specifications

The construction specifications for stream channel stabilization will be according to the construction specifications for Standards and Specifications Streambank and Shoreline Protection (580). In addition to these specifications, there should be an effort to preserve and/or plant adapted trees to provide shade to prevent thermal pollution, prevent willow encroachment, help stabilize banks and provide wildlife habitat in those areas of perennial flow or where woody cover exists.

OPERATION AND MAINTENANCE

A maintenance program shall be established by the landowner/user to maintain stream channel stabilization and vegetative cover. Items to consider are:

1. Do not graze protected area.
2. Fertilize to maintain a vigorous vegetative cover. Caution should be used in fertilization to maintain water quality.
3. Periodically inspect area of the measure for any undermining or instability and if any are observed take immediate action to protect from further damage.
4. Reestablish vegetative cover immediately where scour erosion has removed established seeding.
5. Control undesirable trees and brush growth around the stream channel stabilization as needed by hand, mechanical or chemical means. Use only chemicals labeled for this purpose.