Grade Stabilization Structure

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 410

DEFINITION
A grade stabilization structure is used to control the grade and head cutting in natural or artificial channels.

PRACTICE INFORMATION
Grade stabilization structures are installed to stabilize the channel grade and control erosion to prevent the formation or advance of gullies and headcuts. The practice is used in areas where structures are necessary to stabilize the site. Grade stabilization structures are not designed to regulate flow or water levels in a channel area.

Special attention is given to enhancing fish and wildlife habitat where enhancement is practical. The practice is also helpful in reducing pollution from sedimentation.

Grade stabilization structures are located so that the elevation of the inlet of the spillway is set at an elevation that will control upstream headcutting.

A wide range of alternative types of structures are available for this practice and an intensive site investigation is required to plan and design an appropriate grade stabilization structure for a specific site.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages list the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, and soil.
Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

NOTE: *recorded in Microsoft word 6.0 - use tabs to change cells/fields*

STATE	ANY	FIELD OFFICE	ANY	DATE	5/15/97

PRACTICE: 410 Grade Stabilization Structure	NOTES:
RESOURCE: SOIL **RESOURCE CONCERN: EROSION**	**Help Message: Click on form field for choice lists. Tab key to move around. "N/A" is the default.**
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SHEET AND RILL	insignificant
WIND	N/A
EPHEMERAL GULLY	insignificant
CLASSIC GULLY	significant reduction in classic gully erosion
STREAMBANK	moderate reduction in streambank erosion
IRRIGATION INDUCED	N/A
SOIL MASS MOVEMENT	N/A
ROADBANK/CONSTRUCTION	N/A
OTHER	
RESOURCE CONCERN: **SOIL CONDITION**	
SOIL TILTH	N/A
SOIL COMPACTION	N/A
SOIL CONTAMINATION	
• SALTS	N/A
• ORGANICS	N/A
• FERTILIZERS	N/A
• PESTICIDES	N/A
• OTHER	
DEPOSITION/DAMAGE	
• ONSITE	significant reduction/onsite deposition damage
• OFFSITE	significant decrease/offsite deposition damage
DEPOSITION/SAFETY	
• ONSITE	significantly improve onsite safety/deposition
• OFFSITE	sign. improve offsite safety hazard/deposition
OTHER	
RESOURCE: **WATER** RESOURCE CONCERN: **WATER QUANTITY**	
SEEPS	slight increase in seepage hazard
RUNOFF/FLOODING	slight decrease in runoff/flooding
EXCESS SUBSURFACE WATER	N/A
INADEQUATE OUTLETS	significant improvement in H20 outlet concern
WATER MGT. IRRIGATION	
• SURFACE	N/A
• SPRINKLER	N/A
WATER MGT. NON-IRRIGATED	N/A
RESTRICTED FLOW CAPACITY (H20 convey.)	
• ONSITE	significant improvement in onsite drainage
• OFFSITE	significant improvement in offsite drainage
RESTRICTED STORAGE	sign. reduction in sedimentation of H20 storage

RESOURCE: **WATER** RESOURCE CONCERN**: WATER QUALITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
GROUNDWATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SALINITY	N/A
• HEAVY METALS	N/A
• PATHOGENS	N/A
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SUSPENDED SEDIMENTS	sign. reduction in SWater contam./susp. sedi.
• LOW DISSOLVED OXYGEN	N/A
• SALINITY	N/A
• HEAVY METALS	N/A
• WATER TEMPERATURE	N/A
• PATHOGENS	N/A
AQUATIC HABITAT SUITABILITY	significant improvement in Aqua. Hab. Suit.
OTHER	
RESOURCE: **AIR** RESOURCE CONCERN: **AIR QUALITY**	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	N/A
AIRBORNE CHEMICAL DRIFT	N/A
AIRBORNE ODORS	N/A
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: **AIR CONDITION**	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

RESOURCE: **PLANT** RESOURCE CONCERN: **SUITABILITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SITE ADAPTATION	N/A
PLANT USE	N/A
OTHER	
RESOURCE CONCERN: **CONDITION**	
PRODUCTIVITY	N/A
HEALTH, VIGOR, SURVIVAL	N/A
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
ESTAB., GROWTH, HARVEST	N/A
NUTRIENT MANAGEMENT	N/A
PESTS	N/A
THREAT/ENDANGERED PLANTS	N/A
OTHER	
RESOURCE: **ANIMAL** RESOURCE CONCERN: **HABITAT**	
FOOD	slight improvement in animal habitat/food supply
COVER/SHELTER	slight improvement in animal habitat/cover,shelter
WATER (QUANTITY & QUALITY)	N/A
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
POPULATION BALANCE	insignificant
THREAT/ENDANGERED ANIMALS	N/A
HEALTH	insignificant
OTHER	
RESOURCE: **HUMAN** RESOURCE CONCERNS**: ECONOMIC CONSIDERATIONS**	
PLAN / COST EFFECTIVENESS	significantly cost effective
CLIENT FINANCIAL CONDITION	significantly cost effective
MARKETS FOR PRODUCTS	N/A
AVAILABLE LABOR	N/A
AVAILABLE EQUIPMENT	N/A

RESOURCE: **HUMAN** RESOURCE CONCERN: **SOCIAL CONSIDERATIONS**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
PUBLIC HEALTH AND SAFETY	slight improvement in public health & safety
PRIVATE/PUBLIC VALUES	sign. improvement in private/public values
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	N/A
TENURE	N/A
OTHER	
RESOURCE CONCERN: **CULTURAL CONSIDERATIONS**	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	