



Grassed Waterways

Grassed waterways are natural or constructed channels used to safely carry surface runoff water from a field, terrace, diversion or other area to a suitable outlet. Waterways carry the water slowly downhill to an outlet, preventing gullies which result from surface water running rapidly down sloping land. Maintenance or construction of grass waterways is necessary to safely carry concentrated surface water from fields to streams.

Grassed waterways are usually broad and shallow, although their shape and size may vary depending on the size of the drainage area, the slope of the land and the soil type. Areas on the farm that could be a potential site for a grassed waterway include:

- ! Any natural area where surface water concentrates and flows downslope across a pasture, hay, or cropland field.
- ! An area of concentrated flow from the base of a slope to a stream, river or other water channel.
- ! A water course from a terrace, diversion or other structure to a protected outlet.
- ! A constructed broad channel needed to carry a concentrated water flow.
- ! An active gully site, which cannot be crossed with farm equipment and is experiencing erosion.

Benefits to water quality from installing and maintaining grassed waterways includes:

- ! Safe disposal of excess surface water from either natural drainage areas or from constructed terraces, diversion or other structures.
- ! Vigorous, dense vegetation prevents gully formation and reduces pesticides and other soluble nutrients in surface water because of improved infiltration.
- ! Increased availability of dissolved oxygen and suitability for growth of aquatic organisms due to reduced sediment and chemicals in surface water.

When planning a grassed waterway, be sure to consider the soils for any limitations to revegetation. A structure may be needed to lower the water from the end of the waterway to the stream or receiving channel. Drainage tiles may need to be installed in high water table soils and seepage areas. An adequate outlet is available at the end of the waterway, or one may need to be constructed. The USDA-Natural Resource Conservation Service can provide assistance to you for the design of a grassed waterway. A manual prepared by the Kentucky Cabinet for Natural Resources and Environmental Protection, *Best Management Practices for Agriculture*, can

provide you with design and construction details. The University of Kentucky Cooperative Extension Service publications *Controlling Soil Erosion with Agronomic Practices* and *AGR-97 Surface Water Management Systems* provides information on considering which practices to implement.

Like all other best management practices, grassed waterways must be maintained to be an effective method of improving water quality. Always maintain the original designed width of the grassed waterway. Lift plows, straighten disks and other equipment when crossing the waterway.

Turn off herbicide and other chemical spraying equipment when crossing waterways. To establish a dense, vigorous growth control broad-leaf weeds and use a nitrogen fertilizer. After the waterway is established, the hay may be harvested or grazed carefully, but do not harvest or graze shorter than 3 - 4 inches. Be sure to repair and revegetate all breaks and bare spots soon after discovery.

Grassed waterways have been selected as Best Management Practice #15 for the Crops section of the Kentucky Agriculture Water Quality State Plan. Landowners may choose grassed waterways as a best management practice to implement through

Sources:

Agriculture Water Quality Act Producers Workbook, Division of Conservation, Kentucky Natural Resources & Environmental Protection Cabinet (KNREPC).

Field Borders and Grassed Waterways, USDA Water Quality Demonstration Project Area .

Kentucky Best Management Practices for Agriculture, KNREPC.

Kentucky Agriculture Water Quality Plan, Division of Conservation, KNREPC.

Written by: Jennifer Cocanougher, Extension Associate for Environmental & Natural Resource Issues.

their individual water quality plan if they raise row crops on hill land; apply animal, agriculture, or industrial/municipal waste to fields; operate an orchard or Christmas tree farm; or if they have areas where water concentrates and runs off the field. The AWQA minimum requirements for a grassed waterway are:

Maintain a drainage way by grading and shaping a smooth, bowl-shaped channel and seeding it with sod-forming grasses. This grass cover protects the drainage way from gully erosion and acts as a filter to absorb some of the chemicals and nutrients in runoff water. Adequate vegetation and proper width of grass areas must be maintained to meet this objective.

Further recommendations regarding the installation and maintenance of grassed waterways in Kentucky can be found in the Kentucky State Agriculture Water Quality Plan and available from your local County Extension Office or County Conservation District office.

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