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Maintaining grass waterways

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Abstract
We've already seen more than our fair share of gully washers and steady, heavy rainfall this season. And with this wet weather, it's especially important to have grass waterways ready to handle runoff. A grass waterway is an area where grass is left to grow permanently to drain runoff water into designated outlets, without exposing bare soil to erosion.

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Most farm conservation plans integrate grass waterways as part of their design. Grass waterways are most effective when used in combination with other conservation strategies, such as crop residue management, terraces, buffer strips, and other erosion control practices and structures.

Having wide, shallow, sod-lined waterways reduces the flow speed of water and provides a cushion of grass for the water to "ride," which prevents the formation of gullies. Grass waterways also can be used as outlets for concentrated water coming from terraces, diversions, or adjacent properties, and they can act as a filter, settling out sediments. But be careful--settling out too much sediment can build up the middle of a waterway and direct the runoff back onto the field.

So how do waterways get in good shape and stay that way? Because runoff results in a constant cut-and-fill process in waterways, it takes planning, inspection, and maintenance. Here are some tips for keeping a waterway in optimum condition.

It's important to manage the general shape of a waterway. A parabolic shape is preferred because it is the shape found most often in natural waterways, it is the most crossing-friendly shape to farm equipment, and the flow of water is less likely to meander.

To avoid causing gullies alongside the waterway, don't plant endrows that run parallel to the waterway. Try to stay perpendicular to the waterway by using the contour method. When operating tillage equipment, enter a couple of feet into the waterway before lifting the implement; cross the waterway and enter the field on the contour on the other side. By doing that, the cultivation patterns will direct runoff into the waterway.

Waterways should carry water off the field at a slow speed. Keeping adequate grass cover is the key to maintaining optimum flow velocity. If the grass cover degenerates, small channels will form inside the waterway. One way to keep good grass cover is to shut the sprayer off before crossing the waterway. Emphasize to commercial applicators that they must do so as well. If the grass cover is diminished for any reason, be sure those areas are reseeded quickly.

Mowing waterways is also important. Allowing the grass to mature means too much sediment

will be trapped. The waterway could lose its shape, or the water will simply circumvent the waterway altogether. To allow for bird nesting, be sure that any mowing occurs before May 10 and after July 15.

If sediment does settle into the center of the waterway, or if the bottom of the waterway becomes flat or even slightly humped in the middle, it will be impossible for water to run down the center. To avoid this problem, make sure to use sound conservation strategies on the land above the waterway. At the first sign of a sediment-choked waterway, reshape and reseed the area to ensure proper function.

Inspect the waterway outlets. Small gullies can grow into a gulch in a single rainstorm. Install an outlet structure where runoff dumps into a road ditch or other outlet. Structures are especially important where water drops from one level to another. Get help from the local conservationist in designing an outlet structure that will prevent gullies and gulches from cutting back into the waterway.

If the grass stand stays poor, try to fertilize the grass periodically and evaluate the results. Be sure to always maintain proper waterway width when performing any tillage operations near the waterway--don't "nibble" away at the edges. Inspect the area frequently and repair minor rills or gullies by reshaping and reseeding.

Remember that the waterway is not a thoroughfare--tire tracks will lead to the formation of a gully. Minimize or eliminate livestock traffic through a waterway because hoofprints are natural erosion starters. If there are burrowing animals, such as badgers, groundhogs or moles, they'll have to be controlled. Also, running water tends to swirl around obstructions, so keep the waterway clear of rocks, tree stumps, or debris.

Wet seasons can dramatically point out the need for sufficient waterways. Make sure your farm's conservation plan uses grass waterways as needed to protect the soil. Some years, they are all that stand between the soil and severe erosion.

Suggested Grass Species for Waterways

Smooth bromegrass is very hardy and aggressive, and it is common in Iowa. It protects a waterway channel and works best on fertile, well-drained soils.

Kentucky bluegrass is used extensively in waterways. It grows well in Iowa, but lacks the root depth of other grasses.

Reed canarygrass is a perennial that grows equally well in dry and wet areas, and it works well in waterways that are too wet for other grasses.

Timothy is not as deeply rooted as other grasses, requires more fertile soil, and does not thrive on wet soil or during hot, dry weather.

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