

MSU Extension Publication Archive

Archive copy of publication, do not use for current recommendations. Up-to-date information about many topics can be obtained from your local Extension office.

Pave Your Waterways with Grass
Michigan State University Extension Service
Russell G. Hill, Department of Resource Development
Issued January 1974
4 pages

The PDF file was provided courtesy of the Michigan State University Library

Scroll down to view the publication.

Pave Your Waterways With Grass



Cooperative Extension Service, Michigan State University

STUDY THE NEEDS

Waterways must be (1) wide enough to carry the run-off water (a minimum of one rod for the smallest waterway) (2) they should have gradually sloping sides with the center slightly lower so they can be crossed with machinery (3) covered with grass to protect the channel from erosion, and (4) maintained year after year.

CONSIDER PRESENT CONDITIONS

A good time to establish waterways is when the watershed is covered with sod. If the field is in hay or grass and a good sod is already present, leave the sod in the natural drainageway when the field is plowed.



Russell G. Hill*

GRASS WATERWAYS are natural or prepared outlets for carrying surplus water from land. Protection of these natural drainage ways from erosion and gullying by use of good sod cover is a need on many farms and other land developments. Clean cultivation and tillage in unprotected waterways speed up the loss of top soil, gully formation and siltation of streams. Grass waterways are a very essential part of the soil conservation and water disposal system when used with other soil conservation practices.



Grass waterways remove water without gullyng.

*Extension Specialist, Soil and Water Conservation, Department of Resource Development, MSU.

Sodded waterways may also be established when grain is sown by doing the necessary shaping, seeding, fertilization and protection. Where gullies have formed or where the edges are irregular and steep, it will be necessary to fill and grade to get a proper shaped waterway before seeding.

Large waterways and terrace outlets should be properly designed and constructed. They should not be attempted without knowing the proper specifications. It is recommended that assistance be obtained from the Soil Conservation Service technician assigned to your local Soil Conservation District or from your County Cooperative Extension Service.

PREPARE A FIRM SEED BED

After the waterway has been properly designed and shaped, make a good firm seed bed. Before preparing the seed bed, apply lime if the soil tests less than pH 6.2. Spread 20 to 30 loads of mulch per acre, if available, then work the soil thoroughly with a disk or plow, or both. Harrow to smooth and cultipack immediately after seeding to encourage rapid germination.

USE FERTILIZER

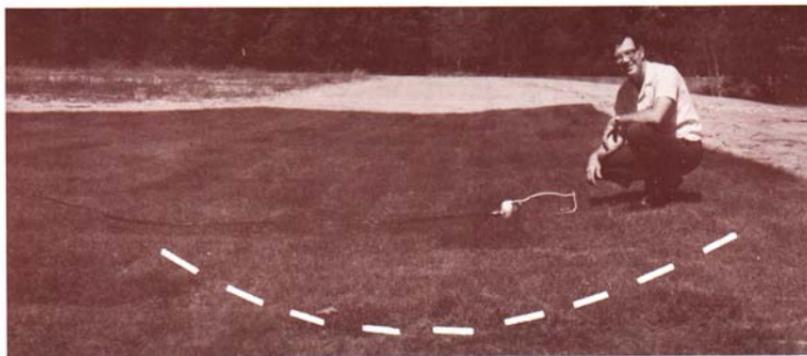
Plenty of plant food is needed to get the grass and a dense sod quickly started. Have the soil tested and apply the needed amount of fertilizer. If a soil test is not possible, apply 500# of 12-12-12 per acre. Top-dress each spring with 30# nitrogen per acre. When straw is used as a mulch, add 50 to 100# per acre of ammonium nitrate in addition to the complete fertilizer.



Shape waterways before seeding.



Fertilize liberally — lime where needed.



Grass waterways must be saucer shaped.

SEED A SIMPLE MIXTURE

The best waterway seedings contain only one or two grasses. Legumes should not be used in waterways. Use two or three times more seed than ordinarily used for meadow seedings. The recommended kinds and rates of seedings *per acre* for different soil conditions are:

DROUGHTY SOILS—creeping red fescue 15# and domestic ryegrass 5#.**

WELL DRAINED, FERTILE SOIL—smooth bromegrass 12# and domestic ryegrass 5#.**

WELL DRAINED TO SOMEWHAT POORLY DRAINED SOILS—tall fescue 8# and smooth bromegrass 8#.

POORLY DRAINED SOILS—smooth bromegrass 12# domestic ryegrass 5# and redtop 2#* or tall fescue 15#, domestic ryegrass 5# and redtop 2#*.

WATERWAY AREAS TO BE SEEDED, MOWED AND MANAGED (as a lawn)—creeping red fescue 20#, Kentucky blue grass 20# and domestic ryegrass 5#.

* Seaside bent 1#, may be substituted for redtop on "seepy" waterways especially in Northern Michigan.

** Orchard grass 10#/acre may be substituted for one of the grasses when seeding well drained soils.

On critical waterway areas where seeding will not establish readily, good sod from dense stands of bluegrass or other suitable grasses should be cut, carefully laid and tamped well into the waterway.

USE A STABILIZING CROP

Time of seeding is important—either early spring or preferably late summer seedings are recommended. Make seedings not later than September 15 in the

southern part of the state and by September 1 in the northern part of the state. Use oats seeded at ½ bushel per acre as a stabilizing crop. If the waterway was constructed in late spring or early summer, broadcast 2 or 3 bushels of corn per acre for summer protection. Cut the corn 8 inches high and seed grass the latter half of August. Leave the corn stubble on the surface for a mulch.

MULCH AFTER SEEDING

Spread a light mulch (1 to 2 tons per acre) on the new waterway if there is danger of excessive washing. Use a strawy manure, or straw, or hay for the mulch. Commercial netting may also be used to help establish vegetation on difficult sites. When a mulch is used, go over the waterway with a weighted disk (set straight) or spray asphalt emulsion with the straw or hay to anchor mulch into soil.

WATERWAYS MUST BE MANAGED

Apply commercial fertilizer high in nitrogen early each spring to promote good growth. Keep grass mowed to a height of 3 to 4 inches. A dense sod provides an efficient liner for waterways. Livestock should be kept off waterways when the ground is wet. Hogs should not be permitted in waterways at any time. Remove rocks, weeds, tree limbs and other obstacles that cause concentration of water flow. Gullying in waterways can be prevented by placing a little sod in weak places when they first develop.

Repair all breaks immediately. If breaks develop in the waterway, reshape, set good sod and tamp down to secure quick establishment and prevent further damage.

Lift plows and straighten disks when crossing waterways. Plow at right angles to the waterway, never parallel to it. Make it easy for the water to flow into the waterway rather than following plow or cultivator marks along its side. Don't use waterways for a roadway. Use caution in applying herbicides to areas that drain into the waterway. They may be toxic to grasses.



Seed adapted grasses on a well prepared seed bed.

ACKNOWLEDGEMENTS:

Pictures used in this publication were provided by the U.S. Soil Conservation Service.

Assistance with subject matter was provided by the Crop and Soil Science, and Resource Development Departments of Michigan State University and by the U.S. Soil Conservation Service.



Grass waterways are also needed in industrial and subdivision developments.