

GRASSED WATERWAYS



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INSTEAD OF GULLIES

Agricultural Extension Service

University of Minnesota

WHY? WHEN? HOW?



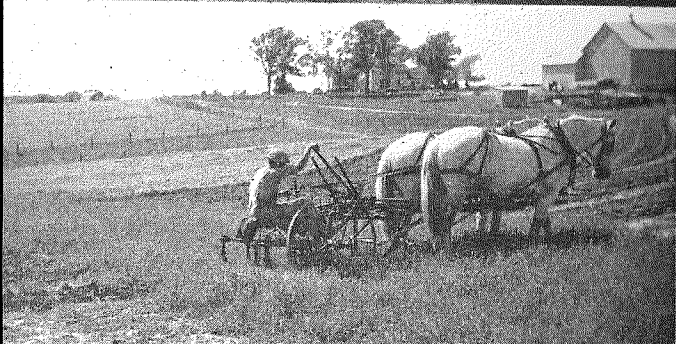
AVOID GULLIES



LEVEL



MULCH



Why Waterways?

1. Waterways prevent gullies by safely disposing of runoff water. The gully on the left could have been prevented had the waterway been left in sod.
2. Waterways avoid breaking valuable machinery which might otherwise be damaged in crossing gullies.
3. Waterways make farming operations easier and handier, thus saving valuable time and effort.
4. Waterways help keep soil where it belongs.

When and How?

Four Steps in Building Waterways

1 Level the waterway, making a flat bottom of the proper width as shown in table 1. Fill in with a grader or plow. Continue leveling with disk, road drag, or harrow. The water will spread over the entire waterway if it is level all the way across. This prevents the gullying which results from concentration of water.

2 Mulch the waterway with a good application of strawy manure. Where lime is needed, apply two tons per acre. Disk lightly to work lime into soil and to hold manure in place.

3 Seed on a firm seedbed, thoroughly packed with a cultipacker, subsurface packer, or disk set straight and weighted with rocks or sandbags. If seeding from April to May 15, use the following mixture per acre: 5 pounds sweet clover, 5 pounds alsike clover, 8 pounds Kentucky bluegrass, and 2 pecks of oats. If seeding from July 15 to September 1, seed same mixture of grass and legumes with two pecks of winter rye. For fall seeding, September 1 to October 1, seed 8 pounds Kentucky bluegrass with one bushel of winter rye. Then seed sweet clover and alsike clover the following spring at the rate given above.

4 Keep waterways in good condition. Lift plow and cultivator when crossing as in picture to left.

Cut at least twice a year.

Do not use waterways as lanes or roadways.

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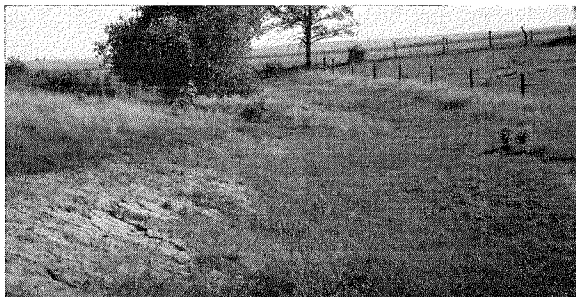
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**BEFORE
SODDING**



**AFTER
SODDING**



Sodding may be necessary for narrow waterways or where the slopes and drainage areas exceed those shown in table 1. Grade and fill the waterway. Make the slope uniform and the bottom of the channel flat. Proper widths for channel when sodding are one third those shown in table 1.

Use moderately grazed bluegrass sod, cut 1½ to 2 inches thick. Break joints when laying, tamp sod firmly into place, and cover with about ¼ inch of black soil. Lay sod at least 2 feet up the side slopes. When necessary build wing dikes to force water into the sodded waterway. Be sure to build the lower part of the sod flume deep enough to prevent undermining.

Table 1. Proper Widths of Waterways When Established by Seeding

Slope of Waterway Feet per 100 feet	Drainage Area in Acres								
	1	2	3	4	6	8	12	16	20
	Proper Width in Feet								
2	3	4	7	9	12	16	21	28	33
4	4	7	10	13	18	24	33	41	49
6	5	9	14	18	27	33	46	57	
8	6	11	18	23	33	42	57		
12	9	16	25	32	47	59			
16	11	21	33	42					
20	14	25	38	50					

Heavy line through table indicates most commonly used widths.

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