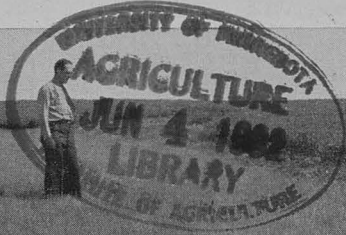


3

MN 2000 EF 107

# GRASSED WATERWAYS



GRASSED WATERWAYS



INSTEAD OF GULLIES

Agricultural Extension Service

University of Minnesota

U. S. Department of Agriculture

WHY?  
WHEN?  
HOW?



**AVOID GULLIES**



**LEVEL**



**MULCH**



**MAINTAIN**

## *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 three 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 in the spring, use the following mixture per acre: 4 pounds red clover, 2 pounds alsike clover, 6 pounds timothy, 3 pounds Kentucky bluegrass, and 2 pecks of oats. Bromegrass and meadow fescue are also good grasses to use.

For fall seeding, September 1 to October 1, use the same grasses but substitute 2 pecks of winter rye for the oats. The legumes, red clover and alsike clover, should be seeded early the following spring as they will winterkill if seeded in the fall. The oats or rye companion crop should, if possible, be mowed when about 10 inches high to insure a better stand of the grasses.

**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. Keep out gophers and woodchucks.

W  
H  
Y  
?

W  
H  
E  
N  
?

H  
O  
W  
?



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.

UNIVERSITY OF MINNESOTA, INSTITUTE OF AGRICULTURE, ST. PAUL 1, MINNESOTA

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Service and United States Department of Agriculture Cooperating, Paul E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914

10M-6-53

UNIVERSITY OF MINNESOTA



3 1951 D01 928 712 5