

# Halting soil erosion on your landscape sites



This roadside planting was done with conservation in mind.

**The old adage about an ounce of prevention will help you avoid erosion-related environmental problems.**

by Fred Kelly



**A thick turf cover protects underlying soil on slopes.**

■ Soil erosion is a landscape manager's nightmare. Not only can it cause unsightly gullies and sediment bars around your site, but it can also result in off-site damage to adjoining properties and pollution of surface waters.

The problem can be worsened when a site has been fertilized or treated with pesticides. The nutrients and agrichemicals may adsorb to the soil and leave the site with the sediment.

Many thousands of dollars are spent annually to correct the effects of soil erosion. Believe it or not, sediment is the number one pollutant of surface waters in this country. It makes a lot more sense to prevent soil erosion in the first place.

The rate of erosion from a particular site can be predicted with a reasonable degree of accuracy. The Universal Soil-Loss Equation (USLE) and Wind Erosion Equation (WEQ) combine critical erosion factors to yield an average soil loss, expressed in tons per acre per year.

Naturally, the soil type at a given site is the starting point in beginning the erosion estimation process. Different soils have different tolerance for development and disturbance. The Soil Survey for your county can provide a wealth of informa-

tion on the characteristics of local soils. The County Soil Survey and information on both the USLE and WEQ can be obtained from your local USDA Soil Conservation Service or Soil Conservation District office.

Each site, however, is unique in regard to erosion potential. The landscape professional can become proficient at recognizing potential high-risk areas just by using a little common sense.

1) Generally, sandier soils will erode more easily than finer-textured soils.

2) Slopes that are steeper and longer will erode more severely than flatter, shorter slopes.

3) Where vegetation is spotty and not providing a contiguous cover, soil will erode. But with a vigorous turf cover, the underlying soil is protected.

4) When rainfall-induced runoff flows across the site in a concentrated fashion, such as in a natural depression or draw, it will often speed up and erode much more than where the water is flowing in a widely-dispersed sheet at a slower speed. Concentrated flows cause gullies.

5) Lastly, parts of the country that have more annual rainfall will generally pose a greater risk than low rainfall areas.

This is an over-simplification of the science of erosion prediction. But it's worth some consideration because landscape managers can help themselves, their clients and the environment by thinking about prevention before correction is necessary.

**Plan ahead**—Any project you undertake should have a logical sequence of construction. This sequence should not only consider contractor or material availability, but also getting any erosion-control structures such as diversions, basins,

drains or swales in place and seeded before the structure will handle runoff.

● Planned pipe outlets should be stabilized with rock rip-rap or other suitable materials before concentrated runoff will come through.

● Rough grading should be planned to prevent diverting runoff into possible trouble spots.

● Don't clear portions of a wooded or well-vegetated site until absolutely necessary.

Keep it under cover—Nothing prevents soil erosion better than vegetation. The denser and more sod-like, the better. Good seeding, liming and fertilizing practices make the process go a whole lot quicker.

● Placing mulch over a seeding is mandatory. Make it clean straw or salt hay, at a rate of at least three bales per 1000 sq. ft.

● If a site needs to be protected only temporarily, use a quick-establishing annual grass like annual ryegrass. In some cases, a heavy application of mulch held in place with an environmentally-friendly tacking agent can also suffice.

● Low-maintenance slopes on a site should be protected with more permanent, wood mulches along with spreading perennial groundcovers. The Soil Conservation Service has developed some superior cultivars like 'Chemung' crownvetch and 'Lathco' flatpea.

**Watch your back**—Any erosion problems on your site may be causing havoc off



**Stabilize pipe outlets with rock rip-rap or other suitable materials.**



## FACTORS AFFECTING EROSION

### FACTORS IN USLE:

rainfall  
soil type  
  
length and steepness of slopes  
crop cover or groundcover  
agricultural factors, like contouring

### FACTORS IN WEQ:

soil susceptibility to wind movement  
unsheltered distance along prevailing winds  
soil moisture  
windspeed  
vegetative cover  
ridge roughness



**Soil erosion ruined this tennis court.**

your site. This results in an environmental problem, and often a public relations nightmare.

Be aware of what your practices are doing to the lands and waters beyond the site. Consider waters coming into your site from outside. Be prepared to handle the storm flows you may be getting from upstream or uphill. Consider your neighbors and take care of the site the way

you'd like to see it if you were outside the fence.

Soil Conservation Service and local Soil Conservation District personnel can help you. Publications are also available.

The Soil Conservation Service is in the phone book listed under "U.S. Government, Department of Agriculture." Your Soil Conservation District is listed under "County Government."

For more information, contact your local office or the National Association of Conservation Districts, P.O. Box 855, League City, TX 77574-0855.

—The author is Assistant State Resource Conservationist for the Soil Conservation Service in New Jersey.

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