Homeowners Guide to Erosion Control

by Donna Nesbit, Grayson County Master Gardener

Whether the land is in the country or the city, movement of water across the property causes erosion. Controlling erosion is a matter preventing soil displacement. Controlling water movement and binding the soil are the major methods of preventing this soil displacement.

Controlling water movement depends on the amount of water, the terrain, and the type of soil. Water movement may be a trickle after a rain or along the edges of a creek, river, or lake. Erosion on a slight slope after rain can be controlled almost exclusively by plants. Erosion control on a small stream or pond depends on the steepness of the slope and type of soil. Erosion control on a large river or lake also depends on the slope and type of soil, but artificial materials may also be needed.

On a slight slope with only occasional water movement or slow water movement, the soil can be bound with plant material. Using plants native to the area is the most cost-effective way to do this because they will naturally bind the soil as well as survive the native weather patterns and wildlife encroachment.

On a steeper slope or with faster moving water, some rearrangement of the soil as well as plant material may be needed. Terracing, artificial water courses, French drains, or ponding may be needed to slow down the water movement. Once that is achieved using plants can help disburse water more naturally.

Along areas where water flows constantly or laps against a shore, some kind of retaining feature may be needed. These features might include large boulders, piers, or other types of retaining material. In addition, created water courses will help funnel the water to the most desirable area. Once that is done, plants can be added starting in the water between or near the retaining feature and moving inland. Using plants with deep or wide spreading roots help stabilize the soil. Using bog plants in and around the water course helps to stabilize it without overly hindering the water movement.

The use of the area where the erosion occurs can also impact the type of material used. If the water movement is in an area with foot or other type of traffic, a more solid surface may be the start of the project. Using gravel, concrete, or other hard surfaces may be necessary, but the more water permeable the better. If the traffic is light, mulches or ground covers can be used instead. Once the hard

surface is in, create areas to gather or slow down the water and add plants to further disperse the water.

As can be seen, no matter the slope, soil, or movement, plants are a large part of the program. Plants help slow down the movement of the water, absorb some of the water, and hold the soil in place as the ground absorbs the water. The variety of leaf structure and plant size also help disperse the rain as it falls to the ground. Basically, hard surfaces are used the protect areas of heavy traffic or areas of excessive water movement.

Since plants are such an important component of erosion protection, it is necessary to select plants that can assist in the protection. Plants with deep roots help hold the soil together vertically. Plants with wide-spreading roots help hold the soil together horizontally. Both of these are needed to stabilize the soil. Also, plants that have adapted to larger amounts of water need to be where the water stands or flows, whereas plants that are adapted to drier soils help stabilize the dryer areas of the slope.

The chart below shows plants that would help with soil erosion. The common name is the most used name for this plant. Since many plants have many common names, the scientific name is given for each plant. When researching your plants, look for the soil type needed for the plant, type of root structure, water and light needs, plant size, and other miscellaneous information.

The first two columns cover trees and shrubs. These large plants will hold larger areas of soil as well as protecting the ground beneath them. Plan the placement of these plants to channel water as well as hold the soil.

The next two columns are the mid-sized plants. These plants include annuals, biennials, and perennials. The perennials and biennials will hold the soil in place year around, while the annuals contribute color and spring to fall erosion control.

The last two columns are the grass and groundcovers. These can be medium sized to small, but they all cover the ground more densely than those in the second chart. Also, they create clumps or mats that help hold the soil year around.

Working with nature instead of against it will provide more success in controlling erosion. Using the slope of the land and plants along with artificial products as needed helps keep the soil in place.

Trees/Shrubs		Perennials/Annuals/ Biennials		Grass/Groundcover	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Box Elder	*Acer negundo*	**Huisache Daisy**	*Amblyolepis setigera*	**Bushy Bluestem**	*Andropogon glomeratus*
Scarlet Buckeye	*Aesculus pavia*	**Partridge Pea**	*Chamaecrista fasciculata*	**Sideoats Grama**	*Bouteloua curtipendula*
Bluewood Condalia	*Condalia hookeri*	**Evening Rain Lily**	*Cooperia drummondii*	**Buffalograss**	*Bouteloua dactyloides*
Texas Persimmon	*Diospyros texana*	**Indian Blanket**	*Gaillardia pulchella*	**Hairy Grama**	*Bouteloua hirsuta*
Black Walnut	*Juglans nigra*	**Maximilian Sunflower**	*Helianthus maximiliani*	**Silver Bluestem**	*Bothriochloa laguroides*
Osage Orange	*Maclura pomifera*	**Scarlet Sage**	*Salvia coccinea*	**Texas Grama**	*Bouteloua rigidiseta*
Red Mulberry	*Morus rubra*	**Tall Goldenrod**	*Solidago altissima*	**Hooded Windmill Grass**	*Chloris cucullata*
American Sycamore	*Platanus occidentalis*	**Plateau Goldeneye**	*Viguiera dentata*	**Inland Sea Oats**	*Chasmanthium latifolium*
Eastern Cottonwood	*Populus deltoides*	**Orange Zexmenia**	*Wedelia acapulcensis* var. *hispida*	**Canada Wild Rye**	*Elymus canadensis*

Trees/Shrubs		Perennials/Annuals/ Biennials		Grass/Groundcover	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Honey Mesquite	*Prosopis glandulosa*			**Curly-mesquite**	*Hilaria belangeri* var. *belangeri*
Escarpment Live Oak	*Quercus fusiformis*			**Green Sprangletop**	*Leptochloa dubia*
Bur Oak	*Quercus macrocarpa*			**Little Bluestem**	*Schizachyrium scoparium*
Black Willow	*Salix nigra*			**Indiangrass**	*Sorghastrum nutans*
Bald Cypress	*Taxodium distichum*			Eastern Gammagrass	*Tripsacum dactyloides*
Cedar Elm	*Ulmus crassifolia*			**Multi-flowered False-rhodesgrass**	*Trichloris pluriflora*
Huisache	*Vachellia farnesiana*				
Desert Hackberry	*Celtis ehrenbergiana*				
Common Buttonbush	*Cephalanthus occidentalis*				
Prostrate Bundleflower	*Desmanthus virgatus*				

Grayson County Master Gardeners Association is a non-profit 501(c)(3) organization sponsored by the Texas A&M AgriLife Extension Service. Reach us by email at mastergardeners@co.grayson.tx.us, by phone 903-813-4204, our web page txmg.org/grayson, or our Facebook group.