Homeowners Guide to Erosion Control

by Donna Nesbit

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 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 show plants that would help with soil erosion. The common name is the most used names for each plant. Since many plants have many common names, the scientific name is given for each plant. When researching your plants looks 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 Box Elder Maple Ash-leaved Maple Ashleaf Maple Red River Maple Fresno De Guajuco	*Acer negundo*	**Huisache Daisy** Butterfly Daisy Honey Daisy	*Amblyolepis setigera*	**Bushy Bluestem** Brushy Bluestem	*Andropogon glomeratus*
Scarlet Buckeye Red Buckeye Firecracker Plant	*Aesculus pavia*	**Partridge Pea** Sleepingplant Sensitive Plant	*Chamaecrista fasciculata*	**Sideoats Grama** Banderilla Banderita Navajita	*Bouteloua curtipendula*
Bluewood Condalia Brasil Brasilwood Bluewood Logwood Purple Haw Capul Negro	*Condalia hookeri*	**Evening Rain Lily** Evening Star Rain Lily	*Cooperia drummondii*	**Buffalograss** Buffalo Grass	*Bouteloua dactyloides*
Texas Persimmon Mexican Persimmon Black Persimmon Chapote Prieto	*Diospyros texana*	**Indian Blanket** Firewheel Girasol Rojo	*Gaillardia pulchella*	**Hairy Grama**	*Bouteloua hirsuta*

Trees/Shrubs		Perennials/Annuals/ Biennials		Grass/Groundcover	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Black Walnut Eastern Black Walnut American Black Walnut	*Juglans nigra*	**Maximilian Sunflower** Max Sunflower	*Helianthus maximiliani*	**Silver Bluestem** Silver Beardgrass	*Bothriochloa laguroides*
Osage Orange Bois d' Arc Bodark Horse Apple Hedge Apple Bowwood Yellowwood Naranjo Chino	*Maclura pomifera*	**Scarlet Sage** Tropical Sage Blood Sage Red Sage Indian Fire	*Salvia coccinea*	**Texas Grama**	*Bouteloua rigidiseta*
Red Mulberry Moral	*Morus rubra*	**Tall Goldenrod** Late Goldenrod Canadian Goldenrod Canada Goldenrod	*Solidago altissima*	**Hooded Windmill Grass** Hooded Windmillgrass	*Chloris cucullata*

Trees/Shrubs		Perennials/Annuals/ Biennials		Grass/Groundcover	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
American Sycamore Eastern Sycamore American Plane Tree Plane Tree Buttonwood Buttonball Tree	*Platanus occidentalis*	**Plateau Goldeneye** Sunflower Goldeneye Toothleaf Goldeneye Chimalacate	*Viguiera dentata*	**Inland Sea Oats** Indian Wood Oats Wild Oats River Oats Flathead Oats Upland Oats Upland Sea Oats	*Chasmanthium latifolium*
Eastern Cottonwood olina Poplar Necklace Poplar Alamo	*Populus deltoides*	Orange Zexmenia Hairy Wedelia Wedelia Texas Creeping-oxeye	*Wedelia acapulcensis var. hispida*	**Canada Wild Rye** Canadian Wildrye Prairie Wildrye Nodding Wildrye	*Elymus canadensis*
Honey Mesquite Glandular Mesquite Algarroba	*Prosopis glandulosa*	Common Name	Scientific Name	**Curly-mesquite**	*Hilaria belangeri var. belangeri*

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Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Escarpment Live Oak Plateau Live Oak Hill Country Live Oak Texas Live Oak Scrub Live Oak Plateau Oak Encino Molino Tesmoli	*Quercus fusiformis*	**Huisache Daisy** Butterfly Daisy Honey Daisy	*Amblyolepis setigera*	**Green Sprangletop**	*Leptochloa dubia*
Bur Oak Burr Oak Savanna Oak Overcup Oak Prairie Oak Mossy-cup Oak Mossy-overcup Oak Blue Oak	*Quercus macrocarpa*	**Partridge Pea** Sleepingplant Sensitive Plant	*Chamaecrista fasciculata*	**Little Bluestem** Popotillo Azul	*Schizachyrium scoparium*

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Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Black Willow Gulf Black Willow Swamp Willow Sauz	*Salix nigra*	**Evening Rain Lily** Evening Star Rain Lily	*Cooperia drummondii*	**Indiangrass** Yellow Indiangrass	*Sorghastrum nutans*
Bald Cypress Baldcypress Common Bald Cypress Southern Bald Cypress Deciduous Cypress Southern Cypress Swamp Cypress Red Cypress White Cypress Yellow Cypress Gulf Cypress Tidewater Red Cypress	*Taxodium distichum*	**Indian Blanket** Firewheel Girasol Rojo	*Gaillardia pulchella*	Eastern Gammagrass Fakahatchee Grass	*Tripsacum dactyloides*

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Cedar Elm Fall Elm Basket Elm Scrub Elm Lime Elm Texas Elm Southern Rock Elm Olmo	*Ulmus crassifolia*	**Maximilian Sunflower** Max Sunflower	*Helianthus maximiliani*	**Multi-flowered False-rhodesgrass** Multiflower False Rhodes Grass Showy Chloris	*Trichloris pluriflora*
Huisache Texas Huisache Sweet Acacia Perfume Acacia Mealy Acacia Mealy Wattle Cassie	*Vachellia farnesiana*	**Scarlet Sage** Tropical Sage Blood Sage Red Sage Indian Fire	*Salvia coccinea*		
Desert Hackberry Spiny Hackberry Shiny Hackberry Granjeno Huasteco	*Celtis ehrenbergiana*	**Tall Goldenrod** Late Goldenrod Canadian Goldenrod Canada Goldenrod	*Solidago altissima*		

Trees/Shrubs		Perennials/Annuals/ Biennials		Grass/Groundcover	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Common Buttonbush Buttonbush Button Willow	*Cephalanthus occidentalis*	**Plateau Goldeneye** Sunflower Goldeneye Toothleaf Goldeneye Chimalacate	*Viguiera dentata*		
Prostrate Bundleflower Wild Tantan Slender Mimosa	*Desmanthus virgatus*	**Orange Zexmenia** Hairy Wedelia Wedelia Texas Creeping-oxeye	*Wedelia acapulcensis var. hispida*		