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Xeriscape

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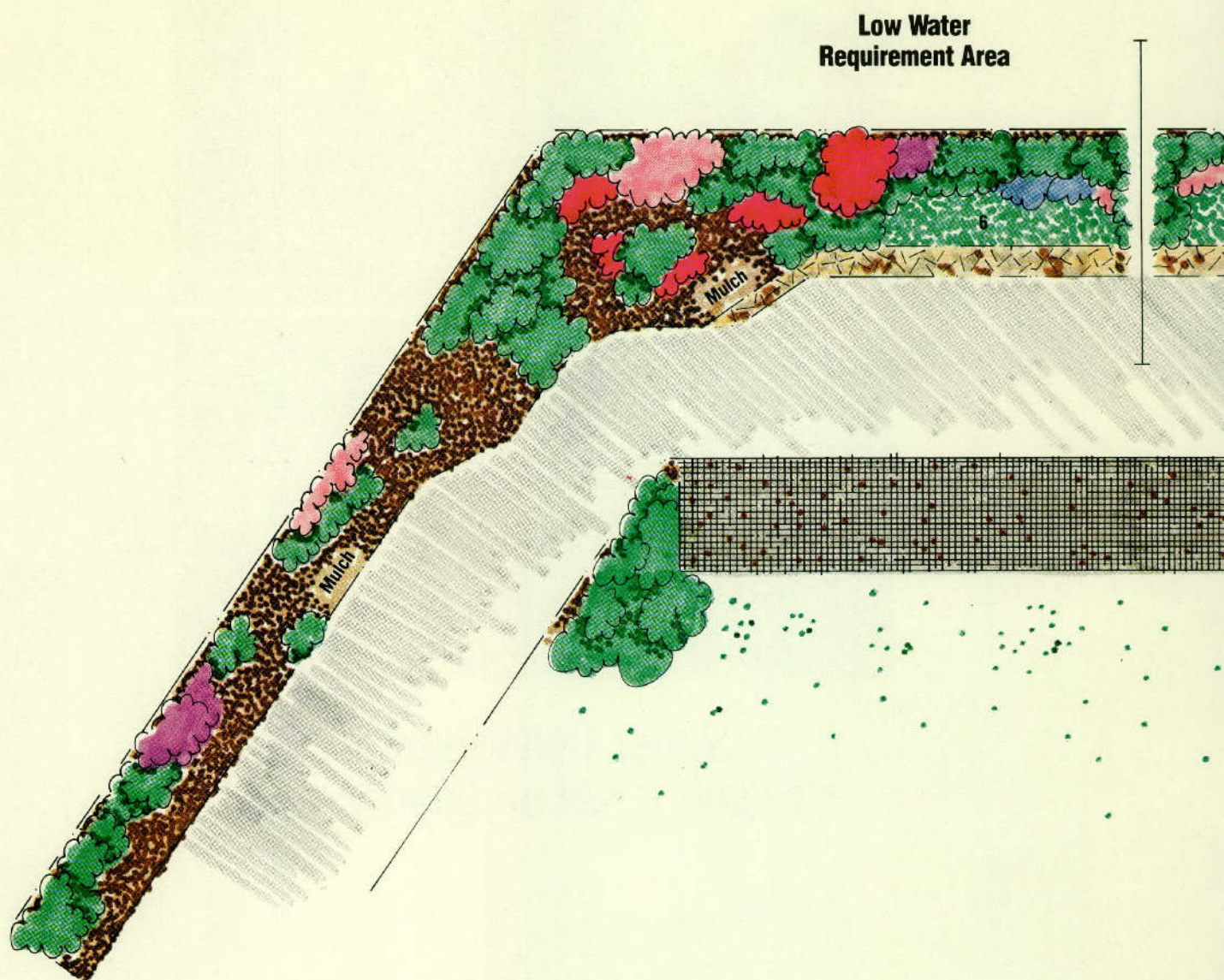
Water Conservation through Creative Landscaping

South/Central Texas Xeriscape

San Antonio Botanical Center
555 Funston Place

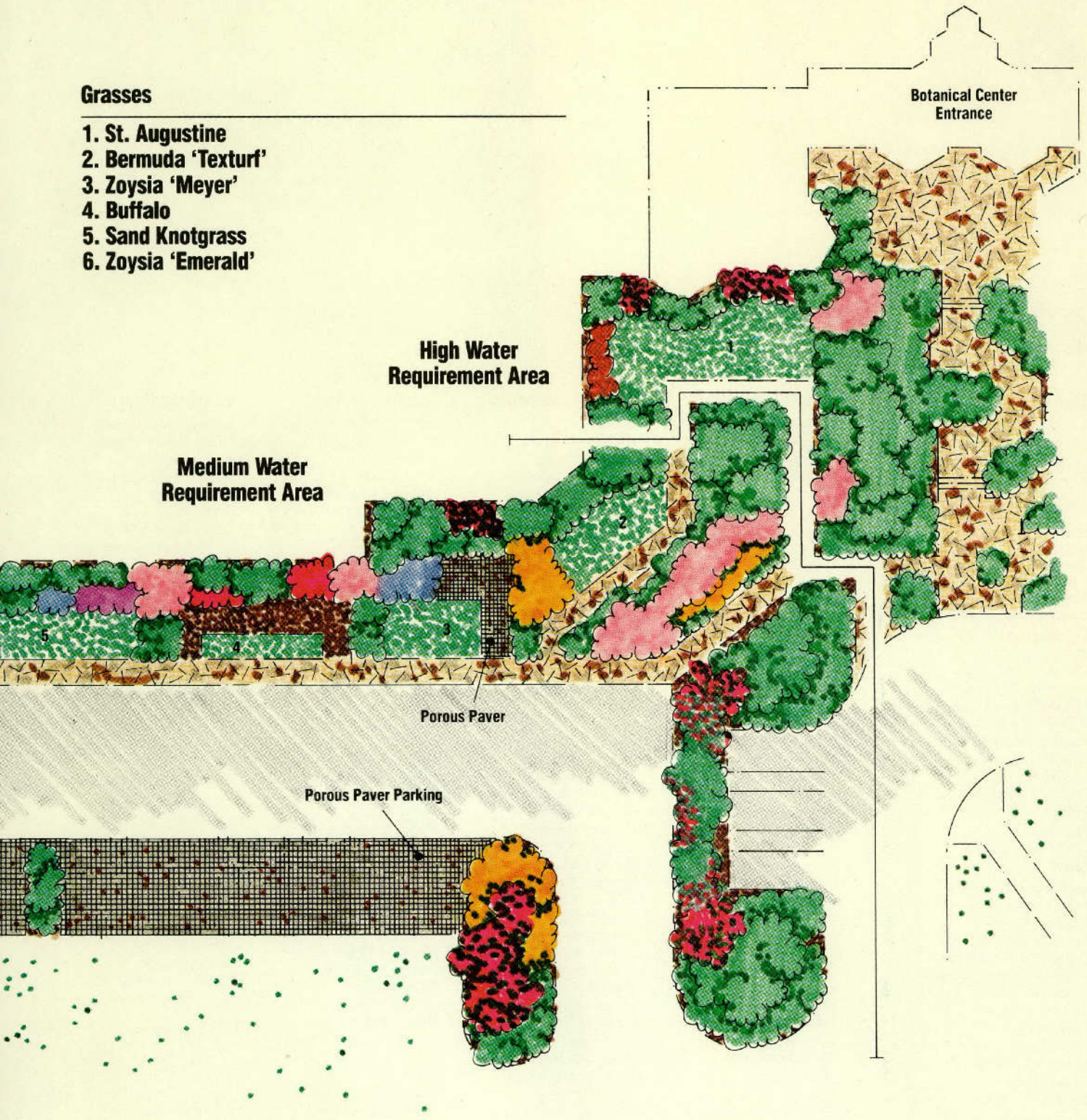
The South/Central Texas Xeriscape demonstrates landscape plants and methods that eliminate outdoor water waste yet maintain attractive landscapes. The South/Central Texas Xeriscape consists of three separate Xeriscape areas based on each area's water requirements.

By incorporating Xeriscape principles in your home or commercial landscape you can eliminate landscape water waste, conserving our most precious natural resource, water.



Grasses

1. St. Augustine
2. Bermuda 'Texturf'
3. Zoysia 'Meyer'
4. Buffalo
5. Sand Knotgrass
6. Zoysia 'Emerald'





South/Central Texas Xeriscape Committee

Edwards Underground Water District
San Antonio Botanical Center
San Antonio River Authority
Texas Agricultural Extension Service

Xeriscape Plant List

The landscape materials listed are native and adapted plants recommended for South/Central Texas.

Ground Covers

Asiatic Jasmine*
Trachelospermum asiaticum
Creeping Grape*
Mahonia repens
Dwarf Coyote Bush
Baccharis pilularia
Fringed Sagebrush
Artemisia frigida
Gregg Dalea
Dalea greggii
Juniper 'Blue Carpet'
Juniperus squamata
Lantana
Lantana sp.
Liriope
Liriope sp.
Mondo Grass/Monkey Grass*
Ophiopogon japonica
Trailing Rosemary
Rosmarinus officinalis var. prostratus
Santolina
Santolina chamaecypariss
Sedum
Sedum spp.

Vines

Carolina Jessamine*
Gelsemium sempervirens
Catclaw Vine
Bignonia Tweediana
Confederate Jasmine*
Trachelospermum jasminoides
Mustang Grape
Vitis mustangensis
Passion Flower
Passiflora sp.
Queen's Wreath
Antigonon sp.
Red Honeysuckle
Lonicera sempervirens
Trumpet Creeper
Campsis radicans
Virginia Creeper
Parthenocissus quinquefolia

Shrubs (evergreen)

Agarita
Berberis trifoliolata
Beargrass
Nolina texana
California Rosewood
Vauquelinia californica
Cenizo/Texas Sage
Leucophyllum spp.
Cotoneaster
Cotoneaster sp.
Dwarf Bayberry*
Myrica pusilla
Eleagnus
Eleagnus pungens
Evergreen Sumac
Rhus virens
Indian Hawthorn
Raphiolepis indica
Japanese Barberry
Berberis thunbergii
Lindheimer Silktassel*
Garrya lindheimeri
Majestic Beauty Hawthorn
Raphiolepis hybrid
Mexican Oregano
Poliomentha longiflora
Nandina*
Nandina domestica
Oleander
Nerium oleander
Pittosporum*
Pittosporum sp.
Red Yucca
Hesperaloe parviflora
Sago Palm*
Cycas revoluta
St. John's Wort*
Hypericum sp.
Sotol
Dasylyrion texanum
Texas Mountain Laurel*
Sophora secundiflora
Texas Pistache
Pistacia texensis
Yaupon Holly*
Ilex vomitoria
Yaupon Holly (Dwarf)
Ilex vomitoria var. nana
Yucca
Yucca spp.

Shrubs (deciduous)

Althea
Hibiscus syriacus
Apache Plume
Fallugia paradoxa
Autumn Sage
Salvia greggii
Beautyberry*
Callicarpa americana
Bush Boneset
Eupatorium havanense
Carolina Buckthorn*
Rhamnus caroliniana
Coral Bean
Erythrina herbacea
Coral Berry
Symphoricarpos orbiculatus
Crape Myrtle
Lagerstroemia indica
Desert Elder
Tecoma stans
Frikarti Aster
Aster X Frikarti
Golden Lead Tree
Leucaena retusa
Guajillo
Acacia berlandieri
Heartleaf Hibiscus
Hibiscus cardiophyllus
Hummingbird Bush
Anisacanthus wrightii
Kidneywood
Eysenhardtia texana
Lantana
Lantana spp.
Mexican Bird of Paradise
Caesalpinia gilliesii
Mexican Elderberry
Sambucus mexicana
Orchid Tree
Buahinia congesta
Pavonia
Pavonia lasiopetala
Pomegranate*
Punica granatum
Pomegranate (Dwarf)*
Punica granatum var. nana
Saltbush
Atriplex sp.

Trees

Afghan Pine
Pinus eldarica
Anacua
Ehretia anacua
Arizona Cypress
Cupressus arizonica
Bur Oak
Quercus macrocarpa
Cedar Elm
Ulmus crassifolia
Chinese Pistache
Pistacia chinensis
Chinkapin Oak
Quercus muhlenbergii
Desert Willow
Chilopsis linearis
Huisache
Acacia smallii
Hybrid Crape Myrtle
Lagerstroemia indica X faurii
Italian Stone Pine
Pinus pinea
Lacey Oak
Quercus laceyi
Live Oak
Quercus virginiana
Mediterranean Fan Palm*
Chamaerops humilia
Mexican Buckeye
Ungadia speciosa
Mexican Plum
Prunus mexicana
Palmetto
Sabal texana
Desert Fan Palm
Washingtonia filifera
Pecan
Carya illinoensis
Sage Tree
Vitex agnus-castus
Texas Persimmon
Diospyros texana
Texas Redbud
Cercis canadensis var. texensis
Texas Red Oak
Quercus texana
Uvalde Maple
Acer grandidentatum
Western Soapberry
Sapindus drummondii
Windmill Palm*
Trachycarpus fortunei

Bunch Grasses

Eastern gamagrass
Tripsacum dactyloides
Fountain Grass
Pennisetum ruppelii
Indiangrass
Sorghastrum nutans
Lindheimer Muhly
Muehlenbergia lindheimeri

Turf Grasses

Bermuda (Hybrid and Common)
Cynodon dactylon
Buffalo Grass
Buchloë dactyloides
St. Augustine varieties
Stenotaphrum secundatum
Zoysia (Emerald)
Zoysia sp.

Herbaceous Perennials

Black-Eyed Susan
Rudbeckia hirta
Blue Sage
Salvia farinacea
Gay Feather
Liatris sp.
Hardy Verbena
Verbena sp.
Indian Blanket
Gaillardia
Purple Coneflower
Echinacea purpurea

*shade-tolerant

Xeriscape, the conservation of water through creative landscaping, is a display of both Texas pride and genuine expression of concern for our most precious natural resource, *water*. The purpose of the South/Central Texas Xeriscape is to demonstrate landscaping methods that eliminate outdoor water waste yet maintain attractive landscapes. **Approximately 40% of summer water use is applied to outdoor landscapes.** A majority of this water is used to maintain traditional landscapes or is inefficiently applied. The South/Central Texas Xeriscape consists of three different landscape settings which incorporate seven basic principles for Xeriscaping:

- ❶ Planning & Design
- ❷ Limited Turf Areas
- ❸ Efficient Irrigation
- ❹ Soil Improvements
- ❺ Use of Mulches
- ❻ Use of Lower Water Demanding Plants
- ❼ Appropriate Maintenance

By incorporating these Xeriscape principles in your home or commercial landscape, you can eliminate landscape water waste and intensify the regional commitment to wise use of our limited water supply.



Xeriscaping — low water demand plants, efficient irrigation and mulch

This booklet describes the South/Central Texas Xeriscape and provides tips and guidelines for conserving water while maintaining an attractive landscape. The South/Central Texas Xeriscape Committee is grateful for this opportunity to introduce to you some of the plants and watering schemes available through Xeriscaping. The demonstration garden is a living example of Xeriscaping, water conservation through creative landscaping.



Many homeowners begin with a "Zeroscape"

1 Planning & Design

Start with a plan. Creating your own Xeriscape requires a well-thought-out landscape design. Sketch your yard with locations of existing structures, trees, shrubs and grass areas. Then consider the landscape budget, appearance, function, maintenance, and water requirements. Local landscape architects, designers and nurserymen can be helpful in this decision making.

2 Limit Turf Areas

Achieving a significant reduction in water consumption and maintenance involves reducing the size of turf areas. Locate turf areas only in areas where it provides functional benefits. Often, turf can be replaced with less water demanding materials, such as ground covers, low water demand plants, mulches, or decks and patios.

3 Efficient Irrigation

Xeriscaping incorporates both sprinkler irrigation and drip irrigation in watering grass, trees, shrubs and groundcovers. The goal of an irrigation system is to give plants a sufficient amount of water without waste.

High water consuming plants must be separated in a Xeriscape from those requiring less water or one of the plant types suffers while the other thrives. Also by zoning the irrigation (sprinkle and drip) system, the grass areas, which have a high water requirement, can be watered separately from groundcover, shrubs and trees.

Sprinkler Irrigation

Sprinkler irrigation is the most commonly used method of watering. The two kinds of sprinkler irrigation systems are the hose-end sprinkler and the permanent underground system with pop-up heads.

The major advantage in using sprinkler irrigation is in lawn watering. A sprinkler system, hose-end or permanent, is an effective and efficient way to distribute water evenly over a lawn area.

4 Soil Improvements

To increase plant health and conserve water, add organic matter to the soil of shrubbery and flower bed areas. Till in four inches of organic material, such as shredded pine bark. For trees and grass areas, it is not economically feasible or necessary to perform this soil preparation.

5 Use of Mulches

Mulching conserves moisture. Mulch is a layer of material covering the soil surface around plants. Mulches can be organic materials such as pine bark, compost and woodchips, or inorganic materials, such as lava rock, limestone, or woven plastic.

Use a mulch wherever possible. A good mulch conserves water by reducing evaporation from the soil. Mulch also prevents soil compaction, keeps soil temperature more moderate and reduces weed populations.

6 Use Lower Water Demands Plants

Plants used for Xeriscaping should be selected for their low water requirements, adaptability to the region's soil and climate, and visual appeal. South/Central Texas is blessed with an abundance of beautiful native plants. Most have lower water demands, fewer pest problems and less fertilizer needs than many exotic plants brought into the area.

Through the efforts of local nurserymen, native Texas plants are readily available in area nurseries and garden centers.



Adapted, lower water demand plants are a must

Xeriscaping uses many of these native plants; plus many well-adapted exotic plants that also have low water demands.

Grass must be selected according to intended use, planting location and cultural input required.

Bermudagrass tolerates more drought and wear than does St. Augustinegrass, however, it will not grow in shady areas and actually requires more water, fertilizer and mowing to maintain its aesthetic qualities than does St. Augustine.

Zoysiagrass, both 'Meyer' and 'Emerald' varieties, are drought, shade and wear tolerant, but have extremely slow establishment rates and should be mowed with a reel-type lawnmower. Buffalograss also has good drought tolerance, but produces a thin, rough turf and has poor shade tolerance. Sand Knotgrass is fast growing, develops a deep root system and requires less water and fertilizer.

The six grasses mentioned vary significantly in drought tolerance; however, for any of them to produce an aesthetically pleasing turf, a similar amount of water must be applied. Generally, grasses should always be considered high water requirements plants.

Achieving a significant reduction in water consumption and maintenance involves reducing the size of these high water requirement areas with patios and decks, mulches and groundcovers.

7 Appropriate Maintenance

Regular maintenance preserves the beauty of the Xeriscape and saves water. Maintenance practices that add to the efficient use of water by plants are proper fertilization, properly-timed insect and disease control, proper pruning, and the periodic check of the irrigation system.



Xeriscape is not cactus gardening.

Mowing grass to the proper height conserves water. The proper height to mow St. Augustinegrass is 3 inches. The typical mowing height is 2 to 2 1/2 inches, but the 3 inch height will do two things. First, the taller grass will shade the ground reducing moisture evaporation from the soil. Second, grass that is allowed to grow taller will grow slower, therefore needing less water and mowing. Proper mowing and irrigation of grasses also allows for a deeper water efficient irrigation system to develop.

For lawns, the most versatile and water efficient hose-end sprinkler is the impact sprinkler. The best type sprinkler head for a permanent system is the pop-up spray head.

Always water between late evening and mid-morning to prevent waste through evaporation. In spring and fall, however, nighttime watering can increase the chances of foliage disease.

Drip Irrigation

With the exception of the lawn, the most efficient way to water a landscape is with a well-maintained and properly designed drip irrigation system. Drip irrigation slowly applies water to soil. The water flows under low pressure through emitters laid alongside each plant.



Drip irrigation, with proper management, is the most efficient

Water applied by drip irrigation has little chance of waste through evaporation or runoff. The water is applied directly to the plant's root zone. This also eliminates waste from applying water to unplanted or weedy areas.

Overall irrigation requirements will vary according to plant species, soil

type, rainfall and temperature. Properly established, plants require less frequent watering than newly planted trees and shrubs. The minimum length of time to operate a drip irrigation system is 3 hours. However, it may take 6 to 12 hours to thoroughly wet the root zone of an established large shrub or small tree.

The problem frequently occurs that plants having different watering requirements are mixed together. Differing needs can be satisfied by varying the number of emitters or flow rate. This flexibility makes drip irrigation ideal for most landscapes.

Covering the drip system with mulch is usually preferred by landscapers and ornamental gardeners. This not only hides the tubing from view, but also adds to the life expectancy of the system.

Watering

Of the tremendous amounts of water applied to lawns and gardens, much of it is never absorbed by the plants and put to use. Some water is lost to runoff by being applied too rapidly. Some water evaporates from exposed, unmulched soil. The greatest waste of water is applying too much too often.

Lawns

Most lawns receive twice as much water as they require for a healthy appearance. The key to watering lawns is to apply the water as infrequently as possible yet thoroughly to a depth of 4 to 6 inches.

To know when to water the lawn, simply observe the grass. When walking across the grass leaves footprints or the grass has a dull grayish appearance, the time to water is at hand.

Watering only when needed and watering thoroughly produces a deep-rooted lawn which is more water efficient and drought tolerant.

Trees and Shrubs

All trees and shrubs need regular watering from planting time until well rooted, which may take two growing seasons. Low water demand plants can then be weaned to less frequent watering. Proper weaning develops deep roots and makes the plants more "drought enduring."

As with lawns, established trees and shrubs should be watered infrequently yet thoroughly. In the absence of rain, most trees and shrubs will benefit from a twice-a-month thorough watering during the growing season. Remember, normal lawn watering is not a substitute for thorough tree and shrub watering.

The feeding root system of a tree or shrub is within the top 12 inches of the soil and located at the "drip line" of the plant. The drip line is the area directly below the outermost reaches of the branches. This is where water and fertilizer should be applied; not at the trunk.

If there is no irrigation system, simply lay a slowly running hose on the ground at the drip line. Move the hose around the drip line as each area becomes saturated to a depth of 8-10 inches. For large trees, this watering technique may take several hours.

This demonstration garden features plants and techniques to conserve water while beautifying your home. The garden is divided into three Xeriscape areas according to each area's water requirement: High, Medium and Low. Within each section are small plantings, each surrounding a grass, mulched or paved area. These small plantings are excellent Xeriscaping examples which can be copied and incorporated into your landscape.

Highest Water Requirement Area

Incorporates plant materials and sprinkler irrigation system commonly specified in South/Central Texas landscapes. Mulch is used in the planting beds and all other proper garden practices are performed.

Plants used:

Grass — St. Augustinegrass

Groundcovers and vines — Asiatic Jasmine, Carolina Jessamine, English Ivy, River Fern and Rosemary

Shrubs — Chinese Holly, Cotoneaster, Dwarf Abelia, Indian Hawthorn, Nandina, Roses, Pittosporum, Fraser's Photinia, Sweet Viburnum, Autumn Sage, and Yaupon Holly.

Trees — Bald Cypress, Cedar Elm, Crape Myrtle, Mediterranean Fan Palm, Texas Mt. Laurel, and Bigtooth Maple.

Medium Water Requirement Area

Incorporates adapted natives and exotic plants that exhibit moderate water requirements. Drip irrigation is used in the planting beds and sprinkler irrigation is used in the grass areas. A thick layer of organic mulch is used throughout the planting beds. This area illustrates all the Xeriscape principles and should be considered for all South/Central Texas home and commercial landscapes.

Plants used:

Grass — Hybrid Bermudagrass, 'Meyer' Zoysiagrass, Buffalograss and Sand Knotgrass.

Groundcovers and vines — Asiatic Jasmine, Red Honeysuckle, Daylily, Liriope, Mondo Grass, Santolina, Purple Aster, and Verbena.

Shrubs — Agarita, Autumn Sage, Cenizo/Texas Sage, Indian Hawthorn, Lantana, Mexican Oregano, Nandina, Pittosporum, Spider Lily, Yaupon Holly, Plumbago, Pavonia, and Gay Feather.

Trees — Afghan Pine, Crape Myrtle, Mexican Buckeye, Texas Mt. Laurel, Texas Persimmon, Texas Red Oak, Uvalde Big-Tooth Maple, Live Oak, Vitex, and Burr Oak.

Lowest Water Requirement Area

Incorporates native plants and a few exotic plants that once established will thrive on natural rainfall alone. Drip irrigation and an organic mulch are used in the planting beds. This landscaping scheme offers great promise for large office parks, schools, hospitals, and other commercial landscapes.

Plants used:

Grass — 'Emerald' Zoysiagrass

Groundcovers and vines — Gregg Dalea, Rosemary, Santolina, Trailing Lantana, Red Honeysuckle, Verbena, Agaves, Nolin, and Strawberry Cactus.

Shrubs — Agarita, Autumn Sage, Beautyberry, Cenizo/Texas Sage, Evergreen Sumac, Flame-Leaf Sumac, Indian Hawthorn, Lantana, Mealy Sage, Nandina, Oleander, Red Yucca, Blue Sage, Pavonia, Cotoneaster, Sotol, Pride of Barbados, Mexican Bird of Paradise, and Mexican Sage.

Trees — Afghan Pine, Arizona Cypress, Chinese Pistache, Desert Willow, Lacey Oak, Live Oak, Texas Redbud, Texas Persimmon, Bauhinia, Texas Pistache, and Mexican Silktassel.

Multi-Use Plants

Several plant species appear in two or all three of the water requirement areas. This illustrates the adaptability of plants through the use of Xeriscape principles.

Dwarf pittosporum is a multi-use plant, being used in both the high and medium water requirement areas. The dwarf pittosporum plants in both areas appear to be equally healthy and growing actively.

