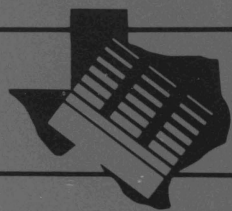
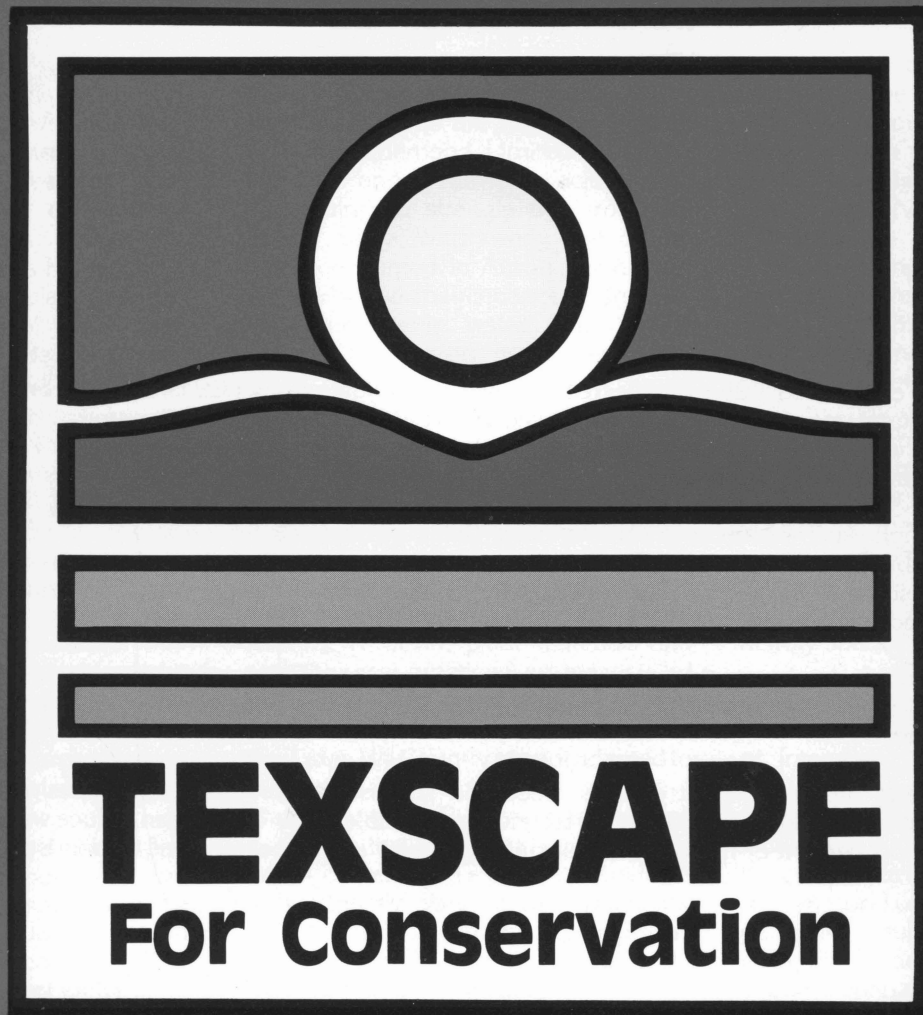


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# Texas Agricultural Extension Service

*People Helping People*



In 1984, Texans used 1.25 million acre-feet of water to irrigate residential landscapes or about 20 percent of the total water use for residential and commercial purposes. During the summer months 50 percent of the water used in urban areas is applied to lawns and gardens. Cities all across Texas have experienced serious water shortages.

Even though water resources in some areas of Texas are adequate for many years, the capacity to treat and distribute water is limited all across the state. Water treatment and distribution has not kept up with growth in some areas over the past few years. Projections indicate that growth will continue through this century and water needs may increase 75 percent by the year 2000.

Conservation in landscape design, installation and maintenance will significantly extend the limits of our water resources and greatly reduce the need for expensive development of water treatment facilities all across Texas.

By selecting drought-tolerant grasses, trees and shrubs; by designing landscapes with water conservation in mind; and by employing the technology available today Texans can reduce water use in the landscape 50 percent or more without sacrificing quality and appearance of the landscape.

# TEXSCAPE FOR CONSERVATION

Richard L. Duble and William C. Welch  
Extension Turfgrass and Landscape Specialists  
The Texas A&M University System

Native Texas landscapes range from forests in the east to deserts in the west. Between those extremes we find many variations of plant materials, soils, climates and water features that produce a kaleidoscope of beautiful native Texas landscapes. Plants and terrain found in the Texas Hill Country, for example, are spectacular to almost everyone living outside of that region. Paintings of native stands of buffalo-grass, cedar, rocks and wildflowers from the Hill Country adorn many homes throughout Texas. In the west, stands of cactus, yucca and mesquite have become synonymous with Texas to the rest of the world. And, in east Texas, native stands of hardwoods and pine dominate the landscape.

Yet we are often not satisfied with native vegetation and landscape features. All too often we try to impose our landscape schemes on environments that are completely hostile to the plant materials. The results are rarely pleasing and always lead to maintenance problems.

Texscape is a program aimed at preserving natural landscapes and conserving our natural resources while creating imaginative, functional and beautiful outdoor environments. The program involves the use of native plant materials wherever feasible, the use of current technology in terms of design and maintenance, and the use of landscape residues for mulch and compost.

The Texscape program will reduce water use for landscape maintenance by 50% or more and also reduce the amount of maintenance required. But, of equal importance, the natural beauty and function of the Texas landscape can be preserved by using adapted plant materials.

The idea is not new; the program is not revolutionary; but, the concept has never been more important to Texas than now. Water is becoming an increasingly precious resource to Texans, and growth projected for the state will only add to the demands for water. Even though water resources may be adequate for many years, our capacity to distribute and treat that water is limited.

Perhaps there is no better example than Austin where water is abundant, but water restrictions are required to keep up with the demand. Limited water distribution and treatment facilities are threatening to strangle the growth of Austin today. With nearly half of the water consumed in Austin being used for landscape maintenance, a tremendous savings in water (and dollars needed to develop water resources) could be realized through widespread use of the Texscape program.

## Plant Selection

The program separates various regions of the state by plant materials, rainfall, temperature, soils and terrain. The regions are not well defined and there is considerable variation within regions. However, plant materials and maintenance practices are associated with these major regions of the state.

For example, many plants adapted to the Texas Hill Country are not adapted to the East Texas Timberlands, and those found along the Gulf coast are not well suited for the High Plains. Since most urban centers in Texas are associated with distinctly different plant materials, soils, terrain and climates, it makes little sense to try to use the same plant materials all over the state.

The Texscape program defines areas of adaptation of various plant materials used in urban landscapes. Plant materials including trees, shrubs, ground covers and grasses are listed by areas of adaptation.

By using plant materials adapted to

Bermudagrass, crape myrtle and asiatic jasmine are well adapted to Central Texas.

specific areas of the state, water needs for landscape maintenance can be reduced by over 50%. But Texscape involves more than just using adapted plant materials, it includes the use of other conservation techniques and practices.

Water saving practices include the use of low pressure drip or trickle irrigation systems for watering trees, shrubs, gardens and individual plants or beds; the use of mulches around shrubs, beds and gardens to conserve water; the use of bark, rock, or other landscape material for ground cover in areas difficult to water or in areas where plants are not needed; the use of vegetative ground covers such as ivy, jasmine, liriopoe and vinca in small, isolated areas, sloping sites that are difficult to water and in heavily shaded sites.

## Landscape Design

Landscape designs with a minimum of intensively maintained lawn space also reduce water requirements. Lawn areas may be the focal point of the landscape, but they do not need to cover the entire area unless the lawn is used as a playground or sports field. Grass areas generally require more water than any other component of the landscape.

Large open areas where a grass cover is needed can be planted to low maintenance grasses such as buffalograss or carpetgrass. Native plants and wildflowers can also be allowed to develop in these areas. Such plants require very little maintenance and no supplemental water once they become established.



## Site Preparation

Proper site preparation will not only produce a more beautiful lawn, but can result in more efficient water utilization. Slopes, areas with shallow topsoil, compacted soils and deep sands are difficult sites to establish grass and are inefficient with respect to water use. Modifying or amending the sites *before* planting is more effective than waiting until problems develop.

As the foundation is the strength of a building, the seedbed is the support for a lawn. The seedbed refers to the few surface inches of soil that are modified prior to planting. Poor soil conditions, like a faulty foundation, result in continuous lawn maintenance problems for homeowners. To prepare a seedbed, first remove all debris such as large stones, wood or other trash that may have been left after construction. Next, the nature of the soil may need to be altered. A sandy loam soil high in organic matter is best for turf. If the original surface soil is a heavy clay or a fine sand, add organic matter to improve soil structure. This organic material can be peat, compost, decomposed gin trash, rice hulls, bark or sawdust (preferably hardwood), leaf mold or similar material. Thoroughly mix 1 inch of organic matter with the top 3 to 4 inches of soil to produce a uniform seedbed. This mixing can be done by repeated cultivation with a garden tiller or with a tractor and rotator.

When adding undecomposed organic matter to the soil, also add 3 pounds of ammonium nitrate or 5 pounds of ammonium sulfate per 1,000 sq. ft. to aid decomposition of the organic material.

In areas of the state with acid soils, add ground agricultural limestone at a rate of 50 to 100 pounds per 1,000 sq. ft. of surface. Limestone, like the organic materials, should be rototilled into the top 3 to 4 inches of soil.

Texas soils are deficient in the major nutrients required for turf. East Texas soils normally are deficient in nitrogen, phosphorus, potassium and lime. In the blackland areas of the state, nitrogen and phosphorus are not adequate for good turf development. Potassium in the soil may become deficient for turf growth when high amounts of nitrogen are used in areas not normally deficient in potassium.

If possible, base rates and combinations of fertilizer nutrients on the results of soil tests. In the absence of a soil test, apply a complete fertilizer to the surface of the seedbed. Apply a fertilizer with a 1-2-1 (10-20-10, 6-12-6) or 1-1-1 (8-8-8)



St. Augustine Grass has good shade tolerance, but poor drought tolerance and coarse texture.



Centipede has good shade tolerance, good drought tolerance and medium texture.



Emerald Zoysia has good shade tolerance, good drought tolerance, and fine texture.

ratio at a rate to supply 2 pounds of phosphorus per 1,000 square feet of lawn.

Grade the seedbed to provide surface drainage away from the house, walks and driveways. A fall of 6 inches for every 40 to 50 surface feet is adequate for drainage, provided no pockets or depressions exist. In some cases, subsurface drainage systems may be needed to remove excess water from poorly drained sites.

If a considerable part of the lawn needs to be filled, use a loam or sandy loam soil. Repeated wetting of the filled site will help settle the soil.

The final step in seedbed preparation is raking the surface to remove large clods and stones. At the same time, fill depressions that have developed and level high spots. Walks and driveways should be flush with the final lawn surface. The site is now ready to be seeded, sprigged or sodded.

## Culture

Conservation and reduced maintenance costs are also enhanced by good cultural practices. By some estimates as much as 50% of the water used for landscape maintenance is wasted through runoff and evaporation. Proper timing and method of application will reduce much of this water loss.

The most important water conserving practice is to water only when plants show symptoms of water stress. Grasses wilt and begin to go off color when under moisture stress. Shrubs and small trees also wilt and begin to drop their leaves under moisture stress. Ideally, water needs to be applied at the first sign of wilt.

When water is needed, thoroughly wet the soil 4 to 6 inches deep by applying water slowly or at intervals to avoid runoff. One inch of water, properly applied, will wet most soil 4 to 6 inches deep (One inch of water is equivalent to



Bermudagrass thrives in full sunlight.



All grasses show drought stress by rolled leaf blades.

62 gallons per 100 square feet.)

During summer months an inch of water will meet most plant needs for 4 or 5 days. But wait until the plants (or grass) show moisture stress before watering again. Early morning dew, cooler temperatures or rain may extend the interval between irrigations several days.

To reduce evaporation losses, water in the early morning hours when winds are calm and temperatures are cool. Also, use sprinklers that operate at low pressures and produce large droplets of water. Misting-type sprinklers are inefficient in most areas.

Fertilization also has a significant affect on water requirements of most plants. Generally, the more fertilizer applied the greater the water use by grasses and other plants. Lawns need to be fertilized to keep them healthy and competitive with weeds, but excessive fertilization leads to high water requirements. Suggested lawn fertilization rates are shown in Table 1.

Mowing is the key to maintaining neat, attractive lawns. Low maintenance grasses such as buffalograss require less mowing than bermudagrass or St.

**TABLE 1. Fertilization Requirements of Turfgrasses.**

Grass	Lbs. N/1,000 sq. ft. per year*	
	Maint. Needs	Maximum Use
Buffalograss	0	2
Carpetgrass	1	2
Centipede	1	2
St. Augustine	2	5
Tall Fescue	2	5
Bluegrass	2	5
Zoysia	2	5
Common Bermudagrass	2	5
Hybrid Bermudagrass	3	7

\*Assuming grass clippings are not routinely removed. Add 50% where clippings are routinely removed.

Augustine. But regular mowing will improve the density and uniformity of all lawns. During the growing season, weekly mowing is ideal for lawn areas. When mowed weekly there is seldom a need to pick-up grass clippings. The clippings break down rapidly in the lawn and recycle plant nutrients. When clippings are picked-up, they can be

composted or used for mulch in gardens.

The Texscape program is simple:

- Develop a landscape plan
- Select adapted plant materials
- Follow sound conservation practices

**TABLE 2. Water Requirements of Turfgrasses.**

Drought Tolerance	Grasses
Excellent .....	Buffalograss
Good .....	Bermudagrass, Zoysia
Poor .....	Centipede
Very Poor .....	St. Augustine, Carpetgrass
	Tall Fescue, Bluegrass

By following these guidelines, Texans can significantly reduce water use and still preserve our beautiful native landscapes.

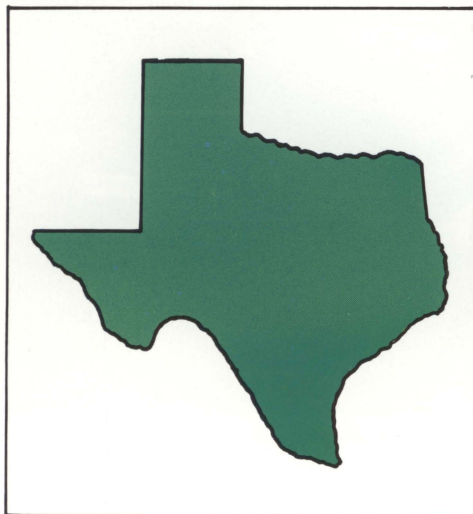


St. Augustine is well adapted for shaded lawns in southeast Texas.

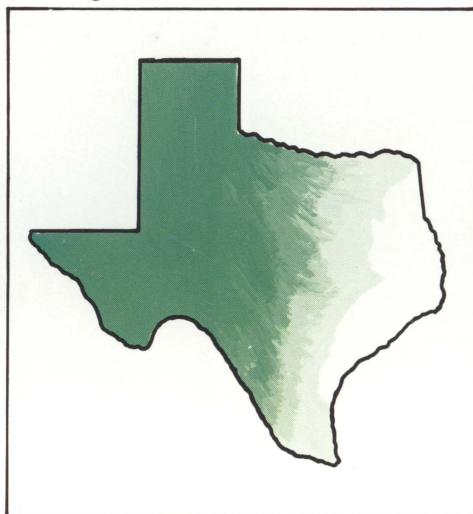


Buffalograss thrives in west Texas lawns.

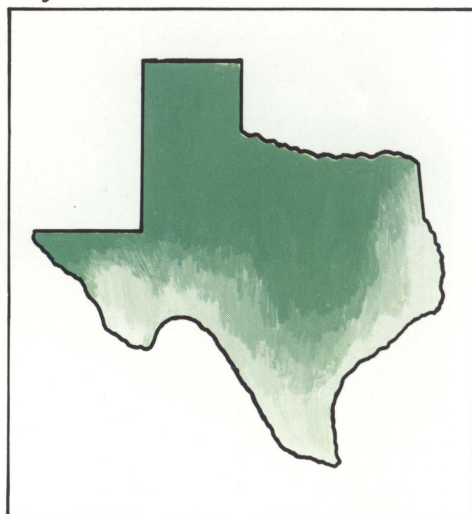
Bermudagrass



Buffalograss



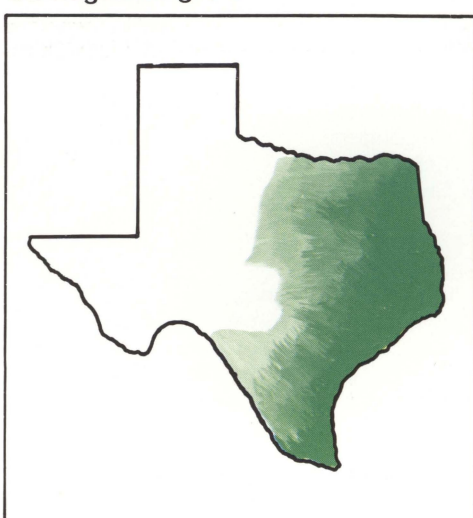
Zoysia



Tall Fescue



St. Augustine grass



Centipedegrass &amp; Carpetgrass

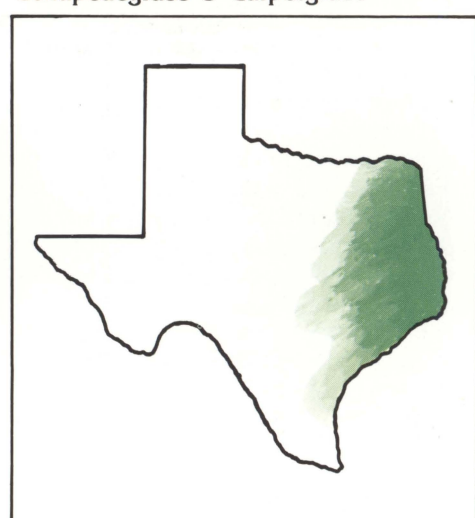


TABLE 3. Grasses Adapted to Vegetative Regions of Texas.

Scientific Name	Common Name	Best Adapted For	Outstanding Characteristics
<i>Axonopus affinis</i>	carpetgrass	1,2	Adapted to moist sites, tolerates partial shade, abundant seedheads, produces thin turf, seeded.
<i>Buchloe dactyloides</i>	buffalograss	3, 4, 5	Excellent drought tolerance, produces thin turf, poor shade tolerance, seeded.
<i>Cynodon dactylon</i>	bermudagrass	6	Good drought tolerance, produces dense turf, poor shade tolerance, seed or sod.
<i>Eremochloa ophiuroides</i>	centipedegrass	1	Low maintenance, tolerates partial shade, fair drought tolerance, seed or sod.
<i>Festuca arundinacea</i>	tall fescue	4	Under irrigation remains green year-round, good shade tolerance, poor drought tolerance, seeded.
<i>Stenotaphrum secundatum</i>	St. Augustinegrass	1, 2, 5	Produces dense turf, good shade tolerance, poor drought tolerance, sodded.
<i>Zoysia</i> spp.	zoysiagrass	3, 4, 5	Produces dense turf, good shade tolerance, good drought tolerance, sodded.

1—East Texas; 2—South Texas; 3—West Texas; 4—North Texas; 5—Central Texas; 6—Adapted to most areas of Texas.

TABLE 4. Trees Recommended for Vegetative Regions of Texas.

Scientific Name	Common Name	Best Adapted For	Growth Rate	Outstanding Characteristic
<b>Medium and Large Trees</b>				
<i>Betula nigra</i>	River Birch	1	Fast	Trunks and bark
<i>Carya illinoensis</i>	Pecan	6	Medium	Fruit and shade
<i>Cedrus deodora</i>	Deodar Cedar	6	Medium	Color and form
<i>Celtis occidentalis</i>	Hackberry	6	Fast	Fast shade
<i>Ehretia anacua</i>	Anaqua	1, 2, 3, 5	Medium	Shade
<i>Firmiana simplex</i>	Chinese Parasol	1, 2, 3, 5	Medium	Green trunks
<i>Fraxinus velutina</i>	Arizona Ash	2, 3, 5	Fast	Fast shade
<i>Ginkgo biloba</i>	Ginkgo	6	Slow	Fall leaf color
<i>Gymnocladus dioica</i>	Kentucky Coffee Tree	4, 5	Medium	Shade
<i>Liquidamber styraciflua</i>	Sweetgum	1	Fast	Fall leaf color
<i>Liriodendron tulipifera</i>	Tulip Poplar	1	Fast	Fall color, flowers
<i>Magnolia grandiflora</i>	Southern Magnolia	1	Slow to medium	Foliage, flowers
<i>Morus alba</i> (male)	Fruitless Mulberry	3, 5	Fast	Fast shade
<i>Pinus elliotii</i>	Slash Pine	1	Fast	Evergreen
<i>Pinus halepensis</i>	Aleppo Pine	1, 2, 3, 5	Medium	Evergreen
<i>Pinus ponderosa</i>	Ponderosa Pine	4	Medium	Evergreen
<i>Pinus taeda</i>	Loblolly	1	Fast	Evergreen
<i>Pinus thunbergii</i>	Japanese Black Pine	6	Medium	Evergreen
<i>Pinus nigra</i>	Austrian Pine	4	Medium	Evergreen
<i>Pistacia chinensis</i>	Chinese Pistachio	6	Medium	Fall leaf color
<i>Platanus occidentalis</i>	American Planetree	6	Fast	Fast growth
<i>Pyrus calleryana</i>	Calleryana Pear	6	Medium	Spring flowers
<i>Pyrus calleryana</i> <i>bradfordii</i>	Bradford Flowering Pear	1, 3, 4, 5	Medium	Spring flowers, fall leaf color
<i>Picea pungens</i>	Colorado Blue Spruce	4	Slow	Color and form
<i>Quercus Virginiana</i>	Live Oak	1, 2, 3, 5	Medium	Evergreen, dependable
<i>Quercus macrocarpa</i>	Bur Oak	6	Medium	Large acorns
<i>Quercus nigra</i>	Water Oak	1	Medium to fast	Relatively fast growth
<i>Quercus shumardii</i>	Shumard Oak	1, 2, 5	Medium	Fall leaf color
<i>Quercus texana</i>	Texas Oak	1, 2, 3, 5	Medium	Fall color, form
<i>Sapindus drummondii</i>	Soapberry	6	Medium	Fall leaf color, fruit
<i>Sapium sebiferum</i>	Chinese Tallow	1, 2, 5	Fast	Fall leaf color
<i>Taxodium distichum</i>	Bald Cypress	6	Medium	Fine texture, adaptability
<i>Ulmus crassifolia</i>	Cedar Elm	6	Medium	Fall color, dependability
<i>Ulmus parvifolia</i>	Chinese Elm	6	Medium	Shade



*Diospyros texana* — Texas Persimmon — Hand-some trunks and thrives on rocky soils of Central and South Texas.



*Leucophyllum frutescens* — Texas silverleaf, Ceniza — New A&M varieties add to the usefulness of this drought tolerant plant.



*Ilex decidua* — Deciduous Holly or Possum Howl Holly — Small tree or large shrub native to most of Texas.

Scientific Name	Common Name	Best Adapted For	Growth Rate	Outstanding Characteristics
<i>Cercis spp.</i>	Redbud	6	Fast	Flowers
<i>Crataegus spp.</i>	Hawthorne	6	Medium	Flowers, fruit
<i>Cordia boissieri</i>	Wild Olive	2	Medium	Flowers
<i>Chilopsis linearis</i>	Desert Willow	2, 3, 5	Medium	Flowers
<i>Diospyros texana</i>	Mexican Persimmon	2, 3, 5	Medium	Trunks, evergreen foliage
<i>Diospyros kaki</i>	Japanese Persimmon	6	Medium	Fruit
<i>Elaeagnus angustifolia</i>	Russian Olive	6	Fast	Shade, windbreak
<i>Ilex decidua</i>	Possumhaw Holly	1, 2, 3, 5	Medium	Fruit
<i>Ilex vomitoria</i>	Yaupon Holly	6	Medium	Fruit
<i>Koelreuteria bipinnata</i>	Southern Golden Raintree	1, 2, 5	Fast	Flowers, fruit
<i>Koelreuteria paniculata</i>	Panicled Golden Raintree	3, 4, 5	Medium	Flowers, fruit
<i>Lagerstroemia indica</i>	Crapemyrtle	6	Medium	Flowers
<i>Lagerstroemia fauriei</i>	Japanese Crapemyrtle	1, 2, 5	Medium	Trunks, flowers
<i>Malus spp.</i>	Crabapple	1, 3, 4, 5	Medium	Flowers
<i>Olea manzanilla</i>	Manzanilla Olive	1, 2, 3, 5	Medium	Gray foliage
<i>Parkinsonia aculeata</i>	Jerusalem Thorn	1, 2, 3, 5	Fast	Flowers, fine texture
<i>Pithecellobium flexicaule</i>	Texas Ebony	2	Medium	Flowers
<i>Prunus mexicana</i>	Mexican Plum	1, 2, 3, 5	Medium	Fragrant flowers, trunks
<i>Zizyphus jujube</i>	Chinese Date	6	Medium	Fruit
<b>Smaller Trees</b>				
<i>Cornus florida</i>	Dogwood	1	Medium	Flowers, fruit, form, acid soil
<i>Cercis spp.</i>	Redbud	6	Fast	Flowers
<i>Chionanthus virginicus</i>	Fringe Tree	1	Medium	Flowers
<i>Crataegus spp.</i>	Hawthorn	6	Medium	Flowers, fruit
<i>Crataegus opaca</i>	Mayhaw	1	Medium	Flowers, fruit
<i>Cordia boissieri</i>	Wild Olive	2	Medium	Flowers, trunk form
<i>Chilopsis linearis</i>	Desert Willow	2, 3, 5	Medium	Flowers, drought tolerant
<i>Diospyros texana</i>	Mexican Persimmon	2, 3, 5	Medium	Trunks, evergreen foliage, drought tolerant
<i>Diospyros kaki</i>	Japanese Persimmon	6	Medium	Fruit
<i>Elaeagnus angustifolia</i>	Russian Olive	6	Fast	Shade, windbreak, silver foliage
<i>Ilex opaca</i>	American Holly	1	Slow	Form, fruit, evergreen, acid soil
<i>Ilex decidua</i>	Possumhaw Holly	1, 2, 3, 5	Medium	Fruit
<i>Ilex vomitoria</i>	Yaupon Holly	6	Medium	Fruit, evergreen
<i>Koelreuteria bipinnata</i>	Southern Golden Raintree	1, 2, 5	Fast	Flowers, fruit
<i>Koelreuteria paniculata</i>	Panicled Golden Raintree	3, 4, 5	Medium	Flowers, fruit
<i>Lagerstroemia indica</i>	Crapemyrtle	6	Medium	Flowers
<i>Lagerstroemia fauriei</i>	Japanese Crapemyrtle	1, 2, 5	Medium	Trunks, flowers
<i>Magnolia soulangeana</i>	Japanese Magnolia	1	Medium	Flowers
<i>Malus spp.</i>	Crabapple	1, 3, 4, 5	Medium	Flowers
<i>Olea manzanilla</i>	Manzanilla Olive	1, 2, 3, 5	Medium	Gray foliage
<i>Parkinsonia aculeata</i>	Jerusalem Thorn	1, 2, 3, 5	Fast	Flowers, fine texture, green stems
<i>Pithecellobium flexicaule</i>	Texas Ebony	2	Medium	Flowers
<i>Prosopis glandulosa</i>	Mesquite	1, 2, 3, 5	Fast	Fast growth rate, form and leaf color
<i>Prunus caroliniana</i>	Cherry Laurel	1, 6	Medium	Evergreen foliage
<i>Prunus mexicana</i>	Mexican Plum	1, 2, 3, 5	Medium	Fragrant flowers, trunks
<i>Prunus persica</i>	Flowering Peach	1, 3, 4, 5	Fast	Spring flowers, short life
<i>Rhamnus caroliniana</i>	Carolina Buckthorn	1, 2, 5	Medium	Fruit and foliage
<i>Sophora secundiflora</i>	Texas Mountain Laurel	2, 3, 5	Fast	Evergreen, fragrant flowers
<i>Zizyphus jujuba</i>	Chinese Date	6	Medium	Fruit

1—East Texas; 2—South Texas; 3—West Texas; 4—North Texas; 5—Central Texas; 6—Adapted to most areas of Texas

#### Selecting Species for Windbreaks

Some of the species appropriate for windbreak plantings in various parts of Texas are:

##### 1. Upper Panhandle of Texas

Oriental Arborvitae (*Thuja orientalis*)  
 Eastern Red Cedar (*Juniperus virginiana*)  
 Austrian Pine (*Pinus nigra*)  
 Ponderosa Pine (*Pinus ponderosa*)  
 Scotch Pine (*Pinus sylvestris*)

Russian Olive (*Elaeagnus angustifolia*)  
 2. North and West Texas  
 Eastern Red Cedar (*Juniperus virginiana*)  
 Rocky Mountain Juniper (*Juniperus scopulorum*)  
 Aleppo Pine (*Pinus halepensis*)  
 Oriental Arborvitae (*Thuja orientalis*)  
 Arizona Cypress (*Cupressus glabra*)  
 Russian Olive (*Elaeagnus angustifolia*)  
 3. Central and South Texas

Arizona Cypress (*Cupressus glabra*)  
 Salt Cedar (*Tamarix aphylla*)  
 Japanese or Tree Ligustrum (*Ligustrum lucidum*)  
 Elaeagnus (*Elaeagnus pungens*)  
 Eastern Red Cedar (*Juniperus virginiana*)  
 Rocky Mountain Juniper (*Juniperus scopulorum*)  
 Yaupon (*Ilex vomitoria*)  
 Oriental Arborvitae (*Thuja orientalis*)



TABLE 5. Shrubs, Vines and Ground Covers Adapted to Vegetative Regions of Texas.

Scientific Name	Common Name	Best Adapted For	Outstanding Characteristics
<b>GROUP I — VINES</b>			
<i>Antigonon leptopus</i>	Coralvine	1, 2, 5	Late summer/fall flowers
<i>Bignonia capreolata</i>	Crossvine	6	Evergreen, clings to walls
<i>Campsis radicans</i>	Trumpet creeper	6	Flowers
<i>Clematis paniculata</i>	Sweet Autumn Clematis	6	Fragrance
<i>Doxantha unguis-cati</i>	Cats-claw	1, 2, 5	Clings to walls
<i>Ficus pumila (repens)</i>	Climbing Fig	1, 2, 5	Clings to walls
<i>Gelsemium sempervirens</i>	Carolina Jessamine	6	Evergreen foliage flowers
<i>Hedera canariensis</i>	Alerian Ivy	6	Evergreen foliage flowers
<i>Hedera helix</i>	English Ivy	6	Evergreen foliage flowers
<i>Lonicera sempervirens</i>	Coral Honeysuckle	6	Coral Flowers
<i>Lonicera japonica chinensis</i>	Honeysuckle	6	Evergreen
<i>Lonicera japonica halliana</i>	Hall's Japanese Honeysuckle	6	Evergreen
<i>Lonicera japonica purpurea</i>	Purple Japanese Honeysuckle	6	Evergreen
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	6	Fall color, clings
<i>Parthenocissus tricuspidata</i>	Japanese Creeper	6	Foliage
<i>Passiflora caerulea</i>	Bluecrown Passionflower	6	Flowers
<i>Polygonum aubertii</i>	Silverlace vine	6	Flowers
<i>Rosa banksiae</i>	Lady Banksia	1, 2, 3, 5	Spring Flowers
<i>Trachelospermum asiaticum</i>	Japanese Star Jasmine	1, 2, 5	Evergreen
<i>Trachelospermum jasminoides</i>	Confederate Jasmine	1, 2, 5	Evergreen, fragrant
<i>Wisteria spp.</i>	Wisteria	6	Flowers
<b>GROUP II — GROUND COVERS (9 to 12 inches in height)</b>			
<i>Ajuga reptans</i>	Carpet Bugle	6	Flowers, foliage
<i>Euonymus fortunei</i>	Wintercreeper Euonymus	3, 4, 5	Evergreen
<i>Festuca glauca</i>	Blue Fescue	3, 4, 5	Foliage
<i>Gelsemium sempervirens</i>	Carolina Jessamine	6	Evergreen, foliage, flowers
<i>Hedera canariensis</i>	Algerian Ivy	6	Evergreen
<i>Hedera helix and varieties</i>	English Ivy	6	Evergreen
<i>Iberis sempervirens</i>	Evergreen Candytuft	3, 4, 5	Flowers
<i>Juniperus horizontalis douglasii</i>	Waukegan Juniper	3, 4, 5	Foliage
<i>Lantana camara</i>	Lantana	6	Flowers
<i>Liriope muscari</i>	Liriope	6	Foliage, flowers
<i>Lonicera japonica chinensis</i>	Honeysuckle	6	Evergreen
<i>Lonicera japonica halliana</i>	Halls Honeysuckle	6	Evergreen
<i>Lonicera japonica purpurea</i>	Purpleleaf Honeysuckle	6	Evergreen
<i>Ophiopogon japonicum</i>	Lily Turf	6	Evergreen
<i>Potentilla verna</i>	Spring Cinquefoil	3, 4, 5	Evergreen
<i>Santolina chamaecyparissus</i>	Santolina	2, 3, 4, 5	Foliage
<i>Santolina virens</i>	Green Santolina	2, 3, 4, 5	Foliage
<i>Sasa pygmaea</i>	Pigmy Bamboo	6	Foliage
<i>Trachelospermum (Rhynchospermum) asiaticum</i>	Asian Jasmine	1, 2, 5	Evergreen
<i>Trachelospermum jasminoides</i>	Confederate Jasmine	1, 2, 5	Fragrant, evergreen
<i>Vinca major</i>	Vinca	6	Flowers, foliage
<i>Vinca minor</i>	Running Myrtle	6	Flowers, foliage
<b>GROUP III — DWARF SHRUBS (1 to 3 feet high)</b>			
<i>Abelia grandiflora postrata</i>	Dwarf Abelia	6	Flowers, foliage
<i>Aspidistra elatior</i>	Aspidistra	6	Evergreen foliage
<i>Azalea (Rhododendron) obtusum japonicum</i>	Kurume Azalea	1	Flowers
<i>Berberis thunbergii</i>	Crimson Pigmy		
<i>atropurpurea nana</i>	Barberry	1, 3, 4, 5	Foliage
<i>Cotoneaster horizontalis</i>	Rock Cotoneaster	1, 3, 4, 5	Foliage, forms
<i>Cuphea hyssopifolia</i>	False Heather	1, 2	Flowers
<i>Gardenia radicans</i>	Dwarf Gardenia	1	Fragrant flowers, forms
<i>Hesperaloe parviflora</i>	Red Yucca	6	Flowers
<i>Hypericum moserianum</i>	St. John's Wort	2, 3, 5	Flowers
<i>Hypericum patulum henryi</i>	Henry's Hypericum	2, 3, 5	Flowers
<i>Iberis sempervirens</i>	Evergreen Candytuft	3, 4, 5	Flowers
<i>Ilex cornuta rotunda</i>	Dwarf Chinese Holly	6	Foliage
<i>Ilex cornuta rotunda burfordii</i>	Dwarf Burford Holly	6	Evergreen
<i>Ilex vomitoria nana</i>	Dwarf Yaupon Holly	6	Evergreen

Scientific Name	Common Name	Best Adapted For	Outstanding Characteristics
<i>Juniperus chinensis</i> Compact Pfitzer	Compact Pfitzer Juniper	6	Evergreen
<i>Juniperus chinensis</i> hetzi glauca	Hetzi Juniper	6	Evergreen
<i>Juniperus horizontalis</i> and varieties	Creeping Juniper	6	Evergreen
<i>Juniperus procumbens</i>	Procumbens Juniper	6	Evergreen
<i>Juniperus sabina</i>	Savin Juniper	6	Evergreen
<i>Juniperus sabina tamariscifolia</i>	Tamarix Juniper	6	Evergreen
<i>Lavandula officinalis</i>	Lavender	3, 4, 5	Gray foliage, flowers
<i>Myrtus communis compacta</i>	Dwarf True Myrtle	1, 2, 3, 5	Evergreen foliage
<i>Nandina domestica nana</i>	Dwarf Nandina	6	Foliage, form
<i>Nandina harbor dwarf</i>	Harbor Dwarf Nandina	1, 2	Foliage, form
<i>Pittosporum tobira 'Wheeler's'</i>	Wheeler's Dwarf	1, 2	Foliage, form
<i>Rosemarinus officinalis</i>	Rosemary	6	Fragrant foliage, flowers
<i>Salvia greggi</i>	Autumn Sage	1, 2, 3, 5	Fragrant foliage, flowers
<i>Santolina chamaecyparissus</i>	Lavender Cotton	2, 3, 4, 5	Grey foliage
<i>Santolina virens</i>	Green Lavender - cotton	2, 3, 4, 5	Green foliage
<i>Sasa pygmaea</i>	Pigmy Bamboo	1, 2, 5	Foliage
<i>Teucrium chamaedrys</i>	Germander	6	Foliage
<i>Yucca filamentosa</i>	Adams needle	6	Foliage, flowers

#### GROUP IV — SMALL SHRUBS (3 to 5 feet high)

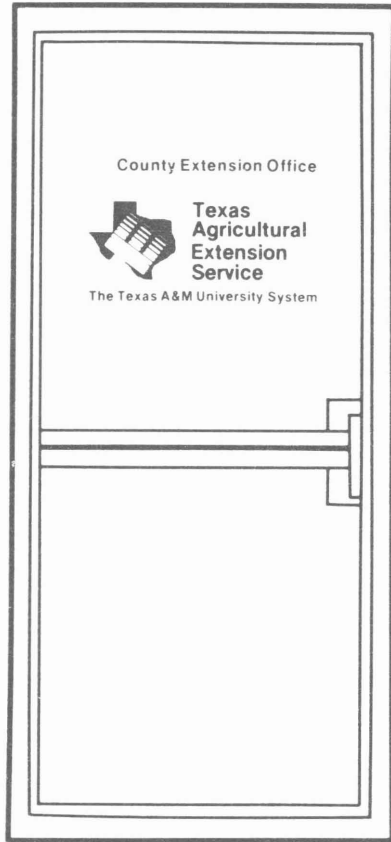
<i>Abelia grandiflora</i>	Glossy Abelia	6	Flowers, foliage
<i>Abelia Goucher</i>	Edward Goucher Abelia	6	Flowers, foliage
<i>Acuba japonica</i> and varieties	Aucuba	6	Foliage
<i>Berberis thunbergii</i> atropurpurea	Red Leaf Japanese Barberry	1, 3, 4, 5	Foliage
<i>Buxus harlandi</i>	Korean Boxwood	6	Evergreen
<i>Buxus japonica</i>	Japanese Boxwood	6	Evergreen
<i>Callicarpa americana</i>	American Beauty Berry	6	Purple or white berries
<i>Chaenomeles japonica</i>	Flowering Quince	6	Early spring flowers
<i>Cleyera japonica</i>	Cleyera	1, 5	Foliage
<i>Cotoneaster glaucophylla</i>	Grayleaf Coton-easter	1, 3, 4, 5	Foliage, form
<i>Dasylerion texanum</i>	Sotol	2, 3, 5	Foliage, flowers
<i>Deutzia crenata</i>	Deutzia	1, 3, 4, 5	Flowers
<i>Gardenia jasminoides Fortuniana</i>	Fortune Gardenia	1	Fragrant flowers
<i>Gardenia jasminoides 'Mystery'</i>	Mystery Gardenia	1	Fragrant flowers
<i>Hydrangea macrophylla</i>	Hydrangea	1	Blue, pink or white flowers
<i>Jasminum floridum</i>	Italian Jasmine	1, 2, 3, 5	Flowers, form
<i>Juniperus chinensis Pfitzer</i>	Pfitzer Juniper	6	Foliage
<i>Juniperus sabina Tamarix</i>	Tamarix Juniper	6	Foliage
<i>Mahonia aquifolium</i>	Oregon grape	6	Foliage, fruit
<i>Nandina domestica</i>	Nandina	6	Foliage, fruit
<i>Poinciana gilliesi</i>	Paradise Poinciana	2, 3, 5	Flowers
<i>Prunus glandulosa</i>	Flowering Almond	1, 3, 4, 5	Flowers
<i>Punica granatum nana</i>	Dwarf Pomegranate	6	Flowers
<i>Pyracantha koidzumii</i>	Santa Cruz Pyracantha	6	Berries
<i>Pyracantha crenato-serrata</i>	Dwarf Pyracantha	6	Berries
<i>Raphiolepis indica</i>	Indian Hawthorne	6	Spring flowers
<i>Rosmarinus foresteri</i>	Rosemary	1, 2, 5	Fragrant foliage, flowers
<i>Spiraea bumalda</i>	Dwarf Pink Bridal Wreath	4	Flowers
<i>Spiraea reevesiana</i>	Reeve's Spirea	6	Flowers
<i>Spiraea prunifolia</i>	Bridal Wreath Spirea	6	Flowers
<i>Virburnum burkwoodii</i>	Burkwood Virburnum	4, 5	Flowers
<i>Viburnum japonicum</i>	Japanese Viburnum	1, 2	Foliage
<i>Viburnum suspensum</i>	Sandankwa Viburnum	1, 2	Foliage
<i>Viburnum tinus robustum</i>	Roundleaf Viburnum	1, 3, 4, 5	Foliage, flowers
<i>Yucca filamentosa</i>	Adams Needle Yucca	6	Foliage, flowers

#### GROUP V — MEDIUM SHRUBS (6 to 9 feet high)

<i>Azalea (Rhododendron) Indicum</i>	Indica Azalea	1	Flowers
<i>Berberis julianae</i>	Wintergreen Barberry	1, 3, 4, 5	Foliage
<i>Buddleia spp.</i>	Butterfly Bush	1, 3, 4, 5	Flowers
<i>Camellia japonica</i>	Camellia	1	Flowers, foliage
<i>Camellia sasanqua</i>	Sasanqua	1	Flowers, foliage
<i>Cortaderia selloana</i>	Pampasgrass	6	Flowers, foliage
<i>Cotoneaster parneyi</i>	Red Clusterberry	1, 3, 4, 5	Foliage, form
<i>Elaeagnus fruitlandii</i>	Silverberry	6	Foliage, form
<i>Euonymus atropurpureus</i>	Wahoo Bush	1, 4	Fall color, fruit
<i>Fatschedera lizei</i>	Botanical Wonder	6	Foliage
<i>Feijoa sellowiana</i>	Pineapple Guava	1, 2, 5	Evergreen

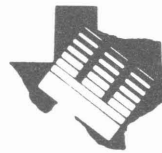
Scientific Name	Common Name	Best Adapted For	Outstanding Characteristics
<i>Forsythia intermedia spectabilis</i>	Golden Bell	1, 3, 4, 5	Spring flowers
<i>Hibiscus syriacus</i>	Shrub althea	6	Summer flowers
<i>Ilex cornuta</i>	Chinese Horned Holly	6	Evergreen
<i>Ilex cornuta burfordii</i>	Burford Holly	6	Evergreen, fruit
<i>Ilex aquipernyi</i>	Brilliant Holly	6	Evergreen, fruit
<i>Jasminum humile</i>	Italian Jasmine	1, 2, 3, 5	Flowers, form
<i>Jasminum mesnyi</i>	Primrose Jasmine	1, 2, 3, 5	Flowers, form
<i>Juniperus chinensis pfitzeriana</i>	Pfitzer Juniper	3, 4, 5	Evergreen
<i>Juniperus chinensis</i>	Many Cultivars	6	Foliage
<i>Lagerstroemia indica "dwarf"</i>	Dwarf Crepe Myrtle	6	Flowers, long season
<i>Leucophyllum frutescens</i>	Cenizo	1, 2, 3, 5	Flowers, gray foliage
<i>Ligustrum texanum</i>	Wax Ligustrum	1, 2, 3, 5	Evergreen
<i>Lonicera fragrantissima</i>	Winter Honeysuckle	6	Winter fragrant flowers
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	4	Flowers
<i>Mahonia aquifolium</i>	Oregon Grape	6	Foliage, fruit
<i>Mahonia bealei</i>	Leatherleaf Mahonia	6	Foliage, fruit
<i>Mahonia trifoliolata</i>	Agarita	2, 3, 5	Flowers, fruit, foliage
<i>Myrtus communis</i>	True Myrtle	1, 2, 3, 5	Flowers, fruit, foliage
<i>Nandina domestica</i>	Nandina	6	Flowers, fruit, foliage
<i>Osmanthus fragrans</i>	Sweet Olive	1	Flowers, foliage, fragrance
<i>Pittosporum tobira</i>	Pittosporum	1, 2, 3, 5	Foliage, form
<i>Pittosporum tobira variegata</i>	Variiegated Pittosporum	1, 2, 3, 5	Foliage, form
<i>Philodendron selloum</i>	Split Leaf Philodendron	2	Foliage
<i>Photinia glabra</i>	Red Top Photinia	6	Evergreen foliage
<i>Poncirus trifoliata</i>	Trifoliata-Orange	6	Flowers, thorns, fragrance
<i>Pyracantha coccinea and varieties</i>	Scarlet Firethorn	6	Fruit
<i>Pyracantha fortuneana</i>	Pyracantha	6	Fruit
<i>Thus sempervirens (virens)</i>	Evergreen Sumac	3, 5	Foliage, form
<i>Spiraea vanhouttei</i>	Vanhoutte Spirea	6	Flowers, form
<i>Syringa chinensis</i>	Chinese Lilac	3, 4	Flowers, fragrance
<i>Syringa persica</i>	Persian Lilac	3, 4	Flowers, fragrance
<i>Vitex agnus-castus</i>	Vitex (lilac Chaste tree)	6	Flowers, form
<i>Weigela florida</i>	Weigelia	1, 3, 4, 5	Flowers
<i>Xylosma senticosa</i>	Shiny Xylosma	2	Foliage
<b>GROUP VI — LARGE SHRUBS (10 to 25 feet high)</b>			
<i>Cassia corymbosa</i>	Flowery Senna	1, 2, 5	Flowers
<i>Diospyros texana</i>	Texas Persimmon	2, 3, 5	Trunks, fruit
<i>Eriobotrya japonica</i>	Loquat	1, 3, 5	Foliage, fruit
<i>Ilex cassine</i>	Cassine Holly	1	
<i>Ilex decidua</i>	Possumhaw	6	Fruit
<i>Ilex opaca</i>	American Holly	1	Form, foliage, fruit
<i>Ilex cassine X opaca</i>	Foster Holly	1	Form, foliage, fruit
<i>Ilex vomitoria</i>	Yaupon Holly	6	Form, foliage, fruit
<i>Ilex altaclarensis</i>	Wilson's Holly	1	Form, foliage, fruit
<i>Juniperus virginiana</i>	Canaert Redcedar	6	Form, evergreen
<i>Juniperus scopulorum</i>	Blue Haven	6	Form, evergreen
<i>Lagerstroemia indica</i>	Crepe Myrtle	6	Flowers, form, trunks
<i>Ligustrum lucidum</i>	Glossy Privet	1, 2, 3, 5	Evergreen
<i>Nerium oleander</i>	Oleander	1, 2,	Flowers
<i>Philadelphus virginialis</i>	Mock Orange	6	Spring flowers
<i>Photinia "Fraseri"</i>	Frazer Photinia	6	Red spring foliage
<i>Photinia serrulata</i>	Chinese Photinia	1, 3, 4, 5	Red spring foliage
<i>Podocarpus macrophylla</i>	Yew Podocarpus	1, 2, 3, 5	Foliage, form
<i>Prunus carolina</i>	Cherry laurel	1, 2, 3, 5	Foliage, form
<i>Sophora secundiflora</i>	Mescalbean sophora	2, 3, 5	Flowers, foliage, form
<i>Thuja orientalis</i>	Arborvitae	3, 4, 5	Evergreen

1—East Texas; 2—South Texas; 3—West Texas; 4—North Texas; 5—Central Texas; 6—Adapted to most areas of Texas.



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