

# SMARTscapes

**Save Money And Resources Today {S.M.A.R.T.}**  
by creating a truly Central Texas landscape





# Introducing SMARTscapes



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Xeriscape™ is a trademark of the Denver Water  
Utilities.

**Top: Consideration of plant size at maturity  
is an important factor of the plan.**

**Bottom: A well planned landscape should  
complement your home.**





## What is a SMARTscape?

A SMARTscape emphasizes a simple approach to landscaping that is based on climate, topography, soil type, and lifestyle. Using water conserving techniques/methods and matching the climate with well-chosen plants and landscape designs, a SMARTscape will look beautiful and offer enjoyment without unwisely depleting water resources.

The unique natural beauty of Central Texas is no longer a well-kept secret. Blanketed with wildflowers, our hills and woodlands with winding spring-fed creeks are attracting more new residents each year. This new wave of settlement challenges all of us to balance new development with protecting the natural features we found so attractive: Save Money And Resources Today by creating a truly Central Texas landscape.

The type of landscaping you choose has a profound effect on the region's resources, especially on available water and water quality. This booklet is intended to generate enthusiasm for landscaping the SMART way. It emphasizes a simple approach that allows you to achieve a successful landscape, based on climate, topography, soil type, and lifestyle. Your landscape project can build on the successes of many area landscapers while avoiding the pitfalls and failures of unsuccessful attempts. SMARTscapes save money and resources today, so that future generations will be able to appreciate the Central Texas we now enjoy.

Your landscape must endure the feast and famine cycle of wet and dry Central Texas weather, or you will be wasting money and resources. The local climate is typical of Texas' mild winters with occasional ice storms and hard freezes, coupled with long, hot, dry summers. Springs are erratic, with early warm spells sometimes interrupted by a hard, late freeze. The growing season is divided into two parts, split by a period of dormancy induced by hot, dry weather in mid to late summer. Rainfall averages around 34 inches a year, but it can vary widely, from 19 inches one year to 46 the next. Plants do not understand average rainfall. Some of the rainfall is not available to the landscape because much of hard spring and summer rains end up as runoff instead of soaking into the soil.

True, you can grow even the most exotic, tropical plant in this climate, but only by lavishing water on it. Landscape watering typically doubles overall water consumption in the summer months. Adopt our SMARTscapes methods and match the climate with well-chosen plants and landscape designs that will look beautiful and offer enjoyment. We can accomplish this without unwisely depleting water resources, plus we can reduce the use of chemical fertilizers and pesticides that can easily run off into our creeks, rivers, and lakes in sudden storms.

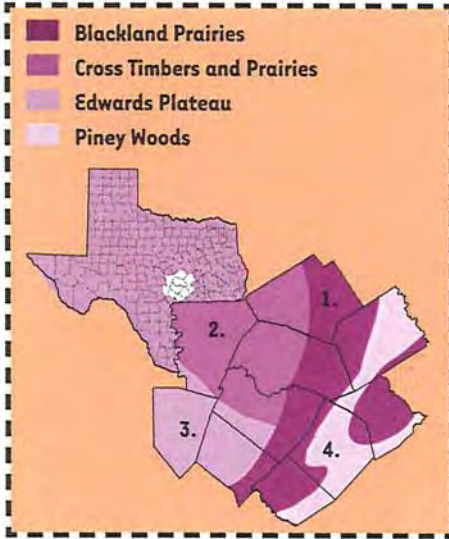
**Market availability of ornamental grasses has added new textures to SMARTscapes.**





# Begin at the Beginning

By determining where you are in Texas, you can identify the important plant species and soil types that are the foundation for your landscape. For example, the loblolly pines and deep sandy soils of Bastrop are a sharp contrast to the live oaks and limestone west of IH-35. In the Central Texas area, we have four major ecological areas.



**1. Blackland Prairies:** Located in the northeast corner of Central Texas to Bastrop County, the Blackland Prairies are characterized by fertile, dark clay soils. This is a true tall grass prairie and is dominated by little bluestem. Other grasses include big bluestem, sideoats grama, Indiangrass, and eastern gammagrass.

**2. Cross Timbers and Prairies:** Located in the northwest corner of Central Texas, this region is composed of prairies crossed by bands of wooded habitat. Grasses include little bluestem, Indiangrass, and big bluestem. Other plants are American elm, Osage orange, American beautyberry, and fragrant sumac.

**3. Edwards Plateau:** Think "Central Texas" and pictures of the Edwards Plateau come to mind. The eastern edge of the plateau begins at IH-35 and expands westward. The plateau is beautiful and rugged, with thin limestone soils dominated by live oak, ashe juniper, and springtime wildflowers.

**4. Piney Woods:** Tucked away in Bastrop county are the renowned and picturesque "lost pines." This area of rolling hills and sandy soils is home to towering loblolly pines, redbuds, and Mexican plum. Bird species normally confined to east Texas explore their western boundary here and pine warblers fill the air with song.

## Evaluation: So, what do you have to start with?

If you are fortunate, your builder or the previous owner of your home might have given you a wonderful foundation landscape to build upon, and you'll just need to add a few native or adapted ornamentals. Or you might want to completely renovate an old-fashioned, water-sucking landscape. Use the following categories to help you determine what is worth saving and what would be better in the compost pile:

**The Good:** These are areas that are already valuable in a SMARTscape. Things to look for include: native grassland or wildflower areas (but not aggressive exotics like Bermudagrass, Johnsongrass, or KR bluestem); established native woodland areas; native shrubs and vines, especially those with fruit, nuts, flowers, etc. valuable to wildlife; plenty of leaf litter to act as a natural mulch.

**The Bad:** Perhaps you don't need quite so much turfgrass! Determine whether the lawn has a use (play area, barbecue area) or is just there by default.

**The Ugly:** Some exotic or aggressive plants are harmful because they take over native habitat.



Consider the good, the bad and the ugly in your landscape evaluation. See "Texas Wildscapes: Gardening for Wildlife" to help you identify undesirables in your landscape.



## Start with a plan: Planning leads to a successful landscape

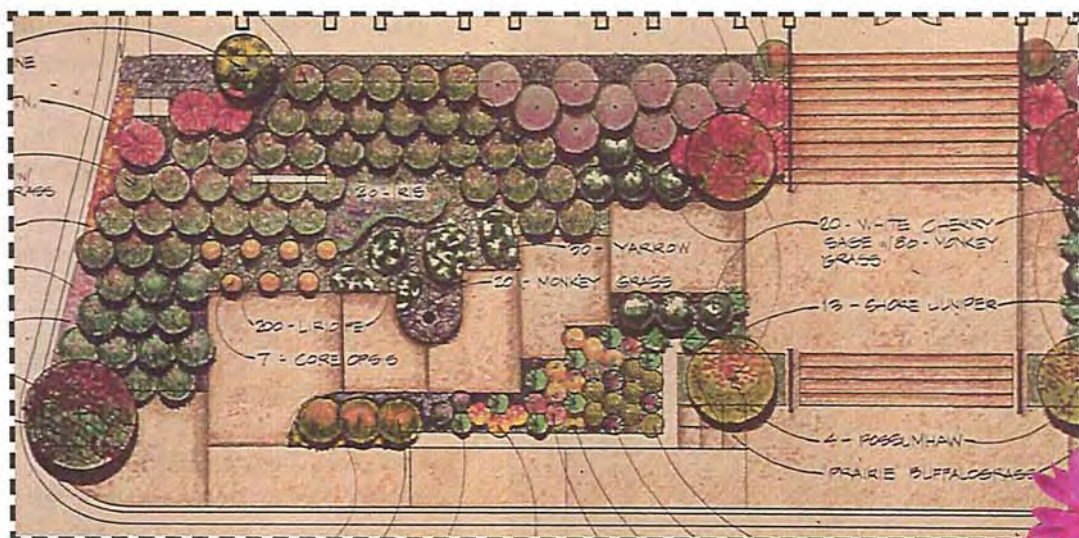
**T**hink of your landscape as a series of rooms. Plan for a place to relax, a place to play, a place to observe nature, and a place for equipment storage. Perhaps each of these uses needs a separate "room." Where is the best location for a bench or a table and chairs? Is there enough shade? Is it safe for children? This space can be your "living room." Does it need steps or a path? Do you need a temporary shade structure until the trees mature? What are the best views from this area

and can you emphasize the view by placement of benches or plants? Do you need to camouflage an unsightly view with a tall hedge? Is your view obstructed by a fence or is there a greenbelt or a woodland? Use this same evaluation process for the other rooms or spaces in your landscape.

### Know your limitations and evaluate the challenges and opportunities of your property.

How big is your budget? What are your

physical, monetary, and time resources? It is better to identify "do-able" areas and get them established, and add on new areas season by season. If you are doing the work yourself, plan the scope of the project to unfold in stages with enough immediate rewards so that you don't get discouraged and overwhelmed. Schedule the heavy work of soil preparation, plant removal, and construction during the spring and fall when the weather tends to be milder.



Your landscape plan can be done by a landscape architect, a landscape designer, a talented friend, or even by you! From rough sketches to full color plans.

## HYDROZONING

**"Any plant can be appropriate in a Xeriscape, if it is located in the correct place."**

**Doug Welsh, Ph.D., former executive director of the National Xeriscape Council**

Different plants require different watering schedules. By grouping together plants with similar water requirements (hydrozoning), you can water accordingly. Permanently installed irrigation systems designed with hydrozoning in mind can be programmed to water more efficiently.

**Regular Watering Zone:** Traditional landscapes have large areas that require frequent watering. SMARTscapes reduce this zone to a very small area near the front or back door. Think of these limited areas as an "oasis" where high maintenance exotic plants (if you just must have them), potted plants, and hanging baskets would be located. Hand watering is the best way to water this area.

**Occasional Watering Zone:** Large, sunny areas of St. Augustinegrass, hybrid Bermudagrass, or fine-bladed Zoysiagrass fall into this zone. In a traditional landscape, this is the largest zone and may require watering every five days. SMARTscapes have limited turf in sunny areas, or use a drought tolerant turfgrass. A summer watering calendar is included on page 14 of this publication; copies are also available from the City of Austin Water Conservation office (or your water provider) to plan your summer five-day schedule.

**Natural Rainfall Zone:** This should be the largest and most dominant planting zone for SMARTscapes. Many lush, green native and adapted plants can flourish with very little supplemental summer watering. The larger you make your natural rainfall zone, the greater your water savings. The City of Austin encourages the use of these plants with the WaterWise Landscape Rebate. Call 499-3514 for an application.



## New Construction: A blessing or not?

**W**ork with your builder to protect the site during construction. This will give you more options for landscaping when the house is completed. Minimizing damage to existing plants allows you the opportunity to start with a more mature landscape. This is especially true with construction on rocky or sloping sites, where soils are easily eroded and plants have difficulty establishing roots.

**Minimize soil compaction** by restricting the use of heavy equipment, parking of worker's vehicles, and the stockpiling of materials or trash on your future landscape. Cushion soil around all trees during construction by applying 4–6" of coarse mulch around the trunks out to the drip line.

**Encourage your builder to "harvest" existing topsoil** and stockpile it for use later when the

rough grades are re-established. Pay attention to the type of soil brought in later: sometimes cheap, clayey, weed-infested "sandy loam" is dumped and spread. Specify 6–8" of SMARTscape mix instead: 70% high-quality loam, 20% 'Dillo Dirt, and 10% coarse grit sand.

**Protect tree groves or clusters with the existing native understory shrubs intact.** Don't just select isolated trees. Identify the native plants growing beneath the trees. Often people remove the "brush" on their site only to spend money later to have the same plants replanted. Many existing shrubs can be pruned to develop a more robust final appearance. These plants already have established roots and are therefore more resistant to droughts. New plants can always be added to the existing vegetation to fill out the bed.

**Make decisions about which trees and plants to "edit" or remove AFTER construction.** Existing trees and plants help hold the soil, prevent erosion and can offer protection to new plants. Junipers and hackberries are often considered undesirable and can gradually be subtracted from the site as other plants become established. It is important to note these so-called "undesirables" have great value to wildlife and hold important roles in the overall ecosystem of the region.



**Save money and resources by establishing the value of your existing vegetation.**

### CONSTRUCTION, DESTRUCTION, REDUCTION

- Establish ground rules between you and your contractors.
- Avoid confrontation with contractors by having written documents establishing the obligations and interests of both parties.
- Prohibit parking within driplines of desirable vegetation.
- Do not allow disposal of any chemicals (paint, thinner, solvent, concrete, etc.) on the site.
- Reduce scraping and leveling to only the footprint of the building and driveway.
- Remove scraps and sawdust of "treated" lumber.
- Establish a monetary value for existing vegetation and provide a compensation method for damage or removal.
- Install capped 3" PVC sleeves under patios, sidewalks and driveways to allow for future electrical or irrigation access.
- Request more hosebibs than the typical two or three to make it easier to water various areas.
- Locate air-conditioning compressors and other noisy equipment away from bedrooms and outdoor entertainment areas.
- Visit the site frequently during construction and avoid going at the same time each day.
- Avoid bringing in "sandy loam" top soil. It is referred to as "red death" in the landscape trade.
- Specify a soil mix such as: 70% high quality loam, 20% 'Dillo Dirt, 10% coarse grit sand.
- Select the best native and adapted plants from those available in the builder's standard landscape "package."
- Require an "as built" plan for all underground utilities, septic tanks, drain fields, and irrigation equipment.



## *Reconstruction:* Renovation of an existing landscape



Right and below: Before and after photos of Doris and Wilber Davis' landscaping demonstrate Xeriscape techniques years ahead of the popular Xeriscape wave.

**E**valuate which plants are successful and which are not thriving. Do not be afraid to thin or remove crowded, older plants. Do not feel obligated to maintain a former owner's mistakes. Some plants can be "recycled" by transplanting them in winter.

**Simplify your planting**, and fill in gradually as plants become established.

**Look for ways to minimize grass areas** (which use more water than shrubs) by combining beds below trees into groves or clusters rather than several individual "donut" rings around

separate plants. When the lawn area is reduced, shape it as an "island" in the center of the yard to use as a path or as a way of balancing shrub borders.

### **Choosing the best new plants**

Your best plant choices come from regionally specific lists of native or well-adapted species. Although any plant can be appropriate if it is planted in the proper location, the largest number of plants in a SMARTscape should be drought-tolerant, low water users, even in our hot, dry summers. Our Best Plants list can go a long way in creating a beautiful,

low maintenance landscape. Proper placement is also extremely important. Group together plants with similar sunlight and water requirements. Watch for the mature height and spread of plants you select and place them accordingly. A rampant grower placed in front of a window or near a path will either become an obstruction or require constant pruning.

Consider the use of other materials such as gravel or finely shredded bark mulch as alternatives to grass in patio or "utility" areas (i.e., where the trashcans are kept or where the pool and AC equipment are located).



**SMARTscapes build on the seven principles of Xeriscape. SMARTscapes are Xeriscapes for the new millennium.**



*Various design styles:* Formal, informal, cottage, wildscape, oriental—anything goes!

There is no “approved” style for SMARTscapes. Perhaps your home’s architectural style lends itself to a particular landscape look, but mostly it is up to you. Home tours, gardening magazines, and our resource list can suggest ideas. Different landscape “rooms” might even have different styles. There is no right or wrong style. It’s entirely up to you. Perhaps some of these gardens will give you inspiration.

Right: One “room” in a larger landscape.  
Below: The historic Case Mill Homestead,  
headquarters for the American Botanical  
Council, features rainwater irrigated  
demonstration gardens.











Wildflower meadows are appropriate for some homeowners.





## Installation: Implementing your plan

**A**fter evaluating your site, making a plan, and deciding on your plants, you are finally ready to install your landscape.

With plan in hand, begin with "hardscape" (walkways, patios, decks, berms, pools, ponds, etc.) and, if necessary, an irrigation system. With proper plant selection and hydrozoning, large areas of SMARTscapes can be without an irrigation system, reducing overall system cost.

After the hardscape elements are installed,

you can now lay out the planting areas shown on your plan. Use a garden hose to lay out curving beds or stakes and string for straight-sided areas. Now may be the time to revise your paper plan, based on the actual look of the site.

**Select one area of your plan to work on.** A good place to start is near your front entrance, since visitors notice this area first (see Hydrozoning). Move or remove existing vegetation within new bed areas. Removal of

weeds and grass by hand-digging has minimal negative impact on the environment. Organic or chemical herbicides are available to eliminate larger areas, but should be a last resort. More herbicide is not necessarily better and can lead to problems with runoff in our waterways.

**Irrigation and hardscape should be installed prior to plant material.**



### HERBICIDES

When using herbicides, follow all the safety instructions on the bottle. Tip: add a few drops of dishwashing detergent to the solution so it will stick to the leaves better. Always wear protective gear like gloves and goggles, long pants and long-sleeved shirts, and rubber boots. You can use a pump-up or hose-end sprayer to apply it, but do NOT spray it any time it's windy, just before a rain, or on ANYTHING you don't want dead! And be VERY careful you don't spray those root suckers under your oak trees that look like baby oaks. Kill them, and you can kill the tree they're under.

There are some products on the market that are labeled as organic (ask your retailer for more information). Some gardeners choose to use an undiluted 20% (200 grain) pickling vinegar. It should work within four days. Another organic option is to utilize solarization by covering the area with sheets of clear plastic. This works only in the hottest part of the summer and takes a long time to be effective. Wet the area and be sure that the edges are sealed and covered with dirt. This creates a very hot pressure cooker effect. One problem with this method is that it sterilizes the soil to some extent, and it may take a while for the earthworms and beneficial microbes to re-establish. Of course, another organic method is manual removal with a spading fork or other hand tool. Most herbicides are not organic.

If you're trying to kill Johnsongrass, Bermudagrass, or nutsedge/nutgrass, plan on having to make several applications of whatever you use. These plants are insidious, and very difficult to get rid of. And if you till them or spread them around before killing them completely, you only multiply your problems.



## Installation



Shredded tree trimmings make good, economical mulch.



Biosolids (treated sewage sludge) are composted with yard trimmings to produce Austin's award-winning 'Dillo Dirt.

Soil amendments should be used to increase water-holding capacity in porous soils and improve drainage in clay soils, plus they add nutrients. Organic amendments, such as compost or 'Dillo Dirt, will improve soil "tilth" (or friability) and are, therefore, probably the best choice. Compost can be tilled into existing soil, spread on top of the bed, or added as filler when you dig the holes. It is important to incorporate the compost into the plants' root zone where the roots can utilize the nutrients. The cheapest way to buy compost may be in bulk, but compare the cost with the actual cost per yard and convenience offered by bags.

### HERE'S THE REAL DIRT!

Although it may look like a homogenous layer you think of as the "brown stuff," soil is a complex mix of organic material, nutrients, minerals, and rock fragments that holds the secrets for a fantastic garden. Your soil will house your plants' roots and, except for sunlight and air, will deliver all their basic needs.

An area's bedrock has a significant influence on the soil that is created. The area of south central Texas is geologically diverse. Western portions of Austin and into the Hill Country are characterized by thin, rocky soils, owing to the exposed limestone rock of the Balcones Escarpment. Rainfall in this area that isn't absorbed by plants can quickly run off the site. Some water percolates through the rocky soil to be stored underground in the Edwards or another aquifer. To the east, the region is more uniformly characterized by the deep, dark, and clayey soils of the Blackland Prairies. This region supports a variety of vegetation types and agricultural products; however, sporadic rainfall often limits plant growth and the number and type of crops that can be harvested.

Soils are classified into different types based on the proportions of different sized particles within them. The mixture of ground-up and broken-down rock in the soil influences how that soil will behave as a home for plants. Larger particles aerate the soil and allow water to move easily to the roots.

However, too much space between particles (such as in gravelly soils) can cause water to drain away too easily and quickly dry out. Conversely, smaller particles have smaller spaces between them (as in clayey or silty soils) that slow the movement of water. If a layer of clay hinders the movement of water, plant roots may be deprived of needed nourishment. Slow-moving water can also saturate all the spaces in the soil, limiting the amount of air available for roots to breathe. For healthy plants, air is as important as soil, nutrients, or water. This is why it is best to water deeply, but infrequently, allowing roots to grow deeper seeking water and allowing air to infiltrate behind the water.

Soil depth is an important factor. Many area homeowners are trying to keep water-thirsty lawns alive with a one or two inch layer of soil on top of a limestone shelf. It just will not happen! Not without gallons and gallons of wasted water. If you insist on planting grass in these areas, add at least six inches (8–12" preferred) of quality soil mix before laying the grass. If it is too late and the grass is already established, top-dress the lawn each spring with  $\frac{1}{2}$ –1" of organic material. Good choices are 'Dillo Dirt, compost, rice hull or cotton burr compost, or weedless screened topsoil. It is always best to use a product that has gone through the heat treatment provided by composting to reduce the presence of viable weed seed.

Top dressing is also valuable for clay soils. The addition of coarse sand, green sand, or granite sand is recommended. Core aeration prior to the top dressing allows more of the sand/organic mix to reach into the clay soil and also provides a channel for water to infiltrate deeper.



SMARTscape Mix: A top quality landscape mix incorporating 70% high quality loam, 20% 'Dillo Dirt and 10% coarse grit sand.



## Installation

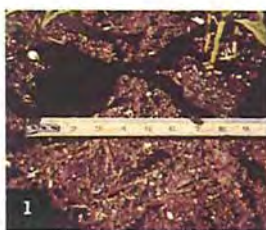
Make a master list of all the plants you need for your first area and take it with you to your local nursery. Consider very carefully the size of the plants and the season you're planting in.

Small container plants have small root systems, and bigger ones have larger root masses. In times of stress, whether from heat or cold, larger root systems stand a much better chance of surviving. If you are planting in early spring or fall, smaller plants have time to establish before a change in weather and soon catch up to larger plants. In the worst heat, cutting back the foliage of the plants you're installing by one third to one half will lower their stress level and their water demands. The ideal times to plant are in the spring or fall when temperatures are milder.

Buy plants that look full and healthy. Don't be afraid to slide them out of the pot at the nursery to see if they have a fully developed root system. A 4-inch plant recently "bumped up" to a one-gallon pot may not be a good deal. Although blooming plants are prettier to look at, the plants will be more stressed if they are transplanted while in full bloom. Consider carefully how big each plant will get when mature. Arrange the potted plants according to your plan. Stand back for a better perspective and make adjustments as necessary. Remember to allow for each plant's ultimate size. For plants you weren't able to purchase, use something to mark the spot where they will eventually be planted.

Now, you're finally ready to dig some dirt. **Make sure the holes you dig are "ugly," meaning a hole with jagged sides and bottom.** This will enable the roots to penetrate our hardpan dirt and not just spin around in circles in their new home. Dig only as deep as the soil level in the container, but 2-3 times the diameter of the root ball. Water the empty hole to wet the root zone and gently lower the plant into its hole. It is best to backfill planting holes with the material originally removed. Sooner or later the new roots need to reach out of the planting hole, and if they are planted in highly amended soil, they are reluctant to venture into the existing or lightly amended soil. Carefully tap the soil around the new arrival to eliminate large air pockets. Water thoroughly, sit back, and admire your handiwork.

Always loosen the burlap wire cage from the crown of balled and burlaped trees or the trunk will become strangled.



1. When staging your planting beds, allow for proper spacing (with mature size in mind).

2. Be sure the hole is the proper size for the plant.

3. Plant with the crown at or slightly above the grade and press the soil firmly to remove air pockets.

4. Mulch the area for moisture retention, staying away from the crown.



During periods of extended drought, postpone new landscape installations. Water shortages or restrictions could lead to a loss of plant material. Work on hardscape or bed preparation instead, and complete planting later.



## Installation

**Consider using steel, concrete or stone edging material to separate beds from lawn.** Plastic edging is cheaper, but it expands and contracts with seasonal weather and soon rises out of the earth.

**Consider using drip irrigation for your new beds.** High quality components are recommended. The good stuff will last for years, the cheap stuff mere months. There are drip tapes, drip hoses with integral emitters every 18-24", or hoses that you add emitters where you need them. Carefully lay out the system, make an "as-installed" diagram of the

layout, and test it thoroughly before covering with mulch.

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**Mulching is the single most important thing you can do to ensure the long-term health of your plants and reduce their dependence on water.**

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Mulch accomplishes this miracle by insulating the soil from temperature extremes, by slowing evaporation of soil moisture, and by helping to prevent germination of weed seeds that would compete with your plants for available moisture.

**Mulch can be just about any organic material,** but some are definitely better than others. Decomposed granite is the most expensive and difficult to apply, but it has to be applied only one time. Hay is the cheapest and easiest to apply, but it disappears in a matter of months. Shredded native hardwood is a good compromise, being readily available and easy to move and apply. The coarser the shred, the longer it will last. Pine bark mulch tends to decompose rapidly and can float away in a downpour. However, it is a good product for a new bed because the relatively fast

**Right: Hand trench for irrigation around your valuable existing trees.**  
**Below: As your mulch decomposes, add more in the spring and fall to maintain a 3 – 4" layer.**







**1999: An established SMARTscape requires very little supplemental water. This home is a 1992 Xeriscape Award winner.**

decomposition helps build the soil. The decomposition tends to rob the soil of nitrogen, so a little extra nitrogen is needed at first. Eventually, a locally produced product will be the best choice because it lasts longer. It is made of shredded hardwood and cedar (juniper) and referred to as "native" mulch.

**Your newly planted beds need consistent watering** to establish the roots deep within the soil. Depending on weather conditions, new plants may need to be watered daily for the first week or two. As the roots grow and penetrate deeper into the soil, they will need less and less supplemental water, especially if you planted native and adapted plants. Apply enough water to penetrate at least 6" into the soil (check it with a small shovel). Gradually wean new plants to once every 5 or 10 days watering over a period of weeks. In the summer, if the leaves show a noticeable droop, its time to water again. A plant that is stressed by over watering looks very similar to a plant that is under watered. Plants (and grass) need very little water in the cool seasons, even if they are newly planted, so don't overdo it.



**1986: Before Installation**  
The site under construction.  
Save that top soil!



**1986: After Installation**  
Newly planted sites  
require additional water  
to get established.



# Maintenance

All landscapes, even SMARTscapes, require some maintenance. There is no such thing as a "maintenance free" yard, except maybe a prairie. But wait! Even a prairie requires grazing or mowing or burning, otherwise it will soon be covered with water-sucking junipers. Since maintenance is a necessity, it may as well be enjoyable and less expensive. To have a successful program, it's good to know the ongoing needs of your landscape. It's also good to know your own abilities. It may be worthwhile to hire a reputable yard service company to do the work you'd prefer not to do. You can be smart by knowing the needs of your yard as well as your own abilities.

The SMARTscape consists of many living things — including you. Know the needs and conditions of these living things. Like us, the plants and animals with whom we share our space need AIR, WATER, LIGHT, and FOOD.

**AIR:** There's nothing like a breath of fresh air.

- Don't smother plants with too much soil (piled up over stems).
- Don't drown plants with too much water.
- Do trim and prune plants regularly to improve shape and foster proper growth (natural is OK too!).
- Do remove unwanted weeds before they crowd out desirable plants.

**WATER:** Using less water means saving money!

- Don't water to the point of runoff.
- Do water before 10 a.m. or after 7 p.m.
- Do water on your assigned day, but only if your landscape needs it. See schedule below.
- Don't water during the hottest part of the day when evaporation is highest.
- Do choose a turfgrass that is drought tolerant — like Buffalograss.
- Do install 3 — 4" of mulch around plants to retain moisture and reduce soil temperature.
- Do encourage wildlife to visit by providing a source of water. Place containers at various levels to accommodate frogs, toads, small mammals, birds, and other wildlife.



## Summer Watering Calendar

**WATERING HOURS:** Hose-end sprinklers Midnight–10 am, plus 7 pm–midnight    Underground systems Midnight–10 am



If your street address ends in ...	then your watering days are:				
... 0 or 9	May 6,11,16,21,26,31	June 5,10,15,20,25,30	July 5,10,15,20,25,30	Aug. 4,9,14,19,24,29	Sept. 3,8,13,18,23,28
... 1 or 8	May 2,7,12,17,22,27	June 1,6,11,16,21,26	July 1,6,11,16,21,26,31	Aug. 5,10,15,20,25,30	Sept. 4,9,14,19,24,29
... 2 or 7	May 3,8,13,18,23,28	June 2,7,12,17,22,27	July 2,7,12,17,22,27	Aug. 1,6,11,16,21,26,31	Sept. 5,10,15,20,25,30
... 3 or 6	May 4,9,14,19,24,29	June 3,8,13,18,23,28	July 3,8,13,18,23,28	Aug. 2,7,12,17,22,27	Sept. 1,6,11,16,21,26
... 4 or 5	May 5,10,15,20,25,30	June 4,9,14,19,24,29	July 4,9,14,19,24,29	Aug. 3,8,13,18,23,28	Sept. 2,7,12,17,22,27





**LIGHT:** All growing things need light.

- Don't try to grow lawn grasses in shady areas. Most grasses need light and lots of it.
- Don't plant shade plants in the sun and vice versa. Know each plant's light requirement.
- Do prune your trees regularly to allow for filtered light.
- Do provide shelter for birds at night, and bats during the day. Bats and birds help to keep unwanted insects under control.

**FOOD:** Food is needed for health and growth.

- Do feed your lawn and plants the natural way. Use compost, 'Dillo Dirt, or other

organic products. Reduce dependence on chemical fertilizers. Well fed, healthy plants are the best defense against diseases and harmful insects.

- Do feed twice a year for good growth and many blooms and fruit.
- Do attract butterflies and birds with your blooms and fruits. Encourage regular visits with feeding stations for different diets. For example, use nectar feeders for hummingbirds, thistle feeders for finches, and sunflower seeds for cardinals and chickadees.

The SMARTscape encourages plants and living things to "do their thing," naturally. Trimming and thinning still need to be done, usually to remove spent flower heads or to encourage more blooming. Weeding must also be done. A good, thick mulch will help to discourage weeds and also make weeding easier.

A SMARTscape is easy and less expensive to maintain. Getting to know and care for the trees, plants, sod, and wildlife can be enjoyable and therapeutic as well. SMART landscaping and SMART gardening are the way to go.



## Responsible Water Use

How can you conserve water with your existing landscape? We have all heard of ripping out and starting over with Buffalograss and native (or adapted) plants. This still may be the best alternative. But, what if you are not prepared to start over completely? You can still train your existing landscape to conserve water. It takes a little planning and work, but it is worth the effort. It will repay your investment year after water-conserving year.

**Hydrozone existing plants.** You know which plants in your landscape require regular watering and which plants seem to do fine with nothing more than average rainfall. If you have mixed these plants together, consider transplanting those with similar water requirements next to each other.

**Use native or adapted plants.** Select new plants that succeed in your climate, soil, and maintenance regime. Plant lists are available

from your county extension agent, locally owned nurseries, or from your water supplier.

**Reduce watering after establishment.** Most trees and shrubs are well established after two growing seasons. They need watering only once a month.

**Use organic mulches.** A three or four inch layer of pine, cypress, or native Texas bark mulch will greatly reduce evaporation, prevent erosion, and stabilize soil temperature.

**Reduce fertilizing schedule.** With the current emphasis on environmental issues, along with more demand for free time, you have more reasons to reduce your fertilizing schedule. In early spring and late fall, apply one-half the amount recommended on the fertilizer bag. Choose those brands with slow release nitrogen. Better yet, try one of the organic based products or the City's 'Dillo Dirt. Your lawn will require less water and less mowing, giving you more free time to enjoy your landscape.

A 10' by 10' garden shed can harvest over 60 gallons of water in a 1" rain. The Natural Gardener has a 750 gallon rainwater system.





## Responsible Water Use

**Use free fertilizer.** You buy fertilizer in bags, and then you take it away in trash bags. "Don't bag it." Convert your existing mower to mulching or recycling. Grass clippings are about 90% water; the remainder is free fertilizer. Leave grass clippings on the lawn and they quickly decay into nutrient-rich organic matter. Raise your mower to a higher setting in mid-summer.

**Reduce watering schedules.** Even St. Augustinegrass can become more drought tolerant. Water in the early morning when evaporation is low. Water only when your grass shows signs of stress (leaf blades begin to curl and footprints show 10 minutes after walking across the grass). Water deeply, but infrequently. Let the grass roots grow deeper, searching for soil moisture. Avoid watering driveways, sidewalks, and streets—they will never grow!

**Repair leaks.** A slow, steady drip from a leaking faucet will waste 75 gallons of water per week. A fast drip increases the waste to over 200 gallons per week. Promptly repair leaks when they are first noticed. The small repair cost is quickly recovered in water savings.

New water treatment plants are very expensive. The main reason new facilities will need to be built is to provide for summer lawn watering. Taxpayers will pay for a new plant, then "mothball" the equivalent of the new plant's capacity for 10 months of the year. Water conservation in the landscape can postpone costly plant expansion for many years. Regardless of where your water comes from, one way or another, additional water costs you money. If you plan changes to your landscape, use water conservation as a deciding factor. Your landscape and your pocketbook will both appreciate it!



A typical lot (60' x120') uses 3,000 gallons of water to apply the maximum weekly recommended 1" of water. The water we use in the landscape is high-quality drinking water, just like bottled water from the store. What if you had to buy bottled water to irrigate your lawn? 600 five-gallon bottles at \$6.00 per bottle would cost almost \$15,000 per month. If you had to buy water for your lawn by the bottle, water conservation in the landscape would be the norm.



This 37,000-gallon wooden tank provides water for a family near Oak Hill.





## Responsible Water Use



Above: Everyone uses rainwater. Sometimes it infiltrates the soil, where it is filtered by natural processes, and returns to the surface in springs. Some rainwater recharges aquifers (underground rivers) that supply drinking water from wells. Right: Rainwater can also be harvested in cisterns, to allow later use in the landscape.

### RAINWATER HARVESTING

Urban rainwater harvesting is an old idea that is new again. Many early Central Texas homes had underground cisterns and some are still in use today. Some of the larger cisterns served several homes. Farmers and ranchers know the value of rainwater as evidenced by today's sources for water tanks: feed and seed stores, farm and ranch stores, and rural fencing suppliers. There is enough demand for rainwater systems that there are now contractors who specialize in rainwater installations. Many of these contractors are located near Dripping Springs where ground water is becoming less dependable and the water quality is sometimes unacceptable. When the costs of drilling a well are compared with a complete rainwater harvesting/treatment system, rainwater has become the frequent choice. The City of Austin does not recommend using rainwater for drinking when City water is available.

Rainwater harvesting for landscape use is a practical and easy approach to water conservation. **A 1000 sq. ft. roof can collect 625 gallons of water in a one-inch rain.** This "gift from the sky" may be stored in recycled 55-gallon drums, rainbarrels, or tanks made of polyethylene, wood, cement, rock, or metal. City of Austin water customers may qualify for rebates on rainwater harvesting equipment when certain guidelines are followed.

Most water suppliers are required to add chlorine to make water safe for consumption. The chlorine is there to protect us from harmful bacteria, but when it is used in the landscape, it tends to sterilize the soil. One of the best things about rainwater is that it doesn't contain chlorine. In order to be healthy, soil needs to have many different forms of microbes, bacteria, and fungi. Fortunately, rainwater is microbe friendly, and actually aids in sustaining and promoting the microbial activity that is necessary for plant health.

There is a high percentage of elemental nitrogen in our rainfall, especially during thunderstorms. This nitrogen is responsible for quickly turning a neglected brown lawn green. Rainwater is also slightly acidic, and many plants thrive better on rainwater than our alkaline tap water.



## Best Plants for SMARTscapes: Favorite plants of the Xeriscape Advisory Board

### Shrubs for Sun

Buddleia  
Butterfly Bush  
Cotoneaster  
Lantana  
Nandina\*  
Texas Sage  
Red Yucca  
Rosemary  
Wax Myrtle

### Shrubs for Shade

American  
Beautyberry  
Bay Laurel  
Dwarf Yaupon Holly  
Germander  
Shrimp Plant  
Silver Bush  
Turks's Cap



### Perennials for Sun

Artemisia  
Coreopsis  
Damianita  
Hymenoxys  
Mealy Blue Sage  
Mexican Oregano  
Oxeye Daisy  
Purple Coneflower  
Salvia Greggii  
Verbena



### Perennials for Shade

Butterfly Weed  
Cedar Sage  
Fall Aster  
Columbine  
Mexican Marigold  
Mint  
Pink Skullcap  
Plumbago  
Yarrow  
Ruellia  
Zexmenia



### Groundcovers for Sun

Asian Jasmine\*  
Damianita  
Oregano  
Santolina  
Stonecrop (Sedum)  
Trailing Lantana  
Tropical Sage  
(Mown)  
Verbena

### Groundcovers for Shade

English Ivy\*  
Pidgeonberry  
Inland Seaots  
Lirope\*  
Little Bluestem  
Monkey Grass\*  
Sedge  
Vinca  
(Major and Minor)

### Ornamental Grasses

Big Muhly  
Sideoats Gramma  
Feather Grass  
Inland Seaots  
Little Bluestem



### Shade Trees

American Elm  
Burr Oak  
Cedar Elm  
Chinese Pistache  
Chinquipin Oak  
Drake Elm  
Lacy Oak  
Live Oak  
Monterey Oak  
Red Oak  
Texas Ash

### Understory Trees

Anacacho Orchid  
Kidneywood  
Mexican Plum  
Mountain Laurel  
Sumac  
(Flameleaf or  
Evergreen)  
Texas Pistasche  
Texas Redbud  
Vitex\*  
Yaupon Holly



## Best Grass Choices for Lawns In Order of Drought Tolerance

**Buffalograss:** Drought tolerant and can go for weeks without rain and rejuvenate. Thrives on abuse, hates to be pampered. Over watering, over fertilizing and mowing more than twice a year will result in weeds and Bermudagrass infiltration. Not the choice for lush, green summer lawns, but nothing is!

**Zoysiagrass (Japonica):** Wide-bladed zoysias can shut down like buffalo and still come back strong.

**Bermudagrass (common)\*:** Available from seed, can go for several weeks without rain.

**Zoysiagrass (Matrella):** Narrow-bladed zoysias need more maintenance and do best with a reel-type mower.

**Bermudagrass (hybrid):** Best left to the golf greens because of the need for high maintenance.

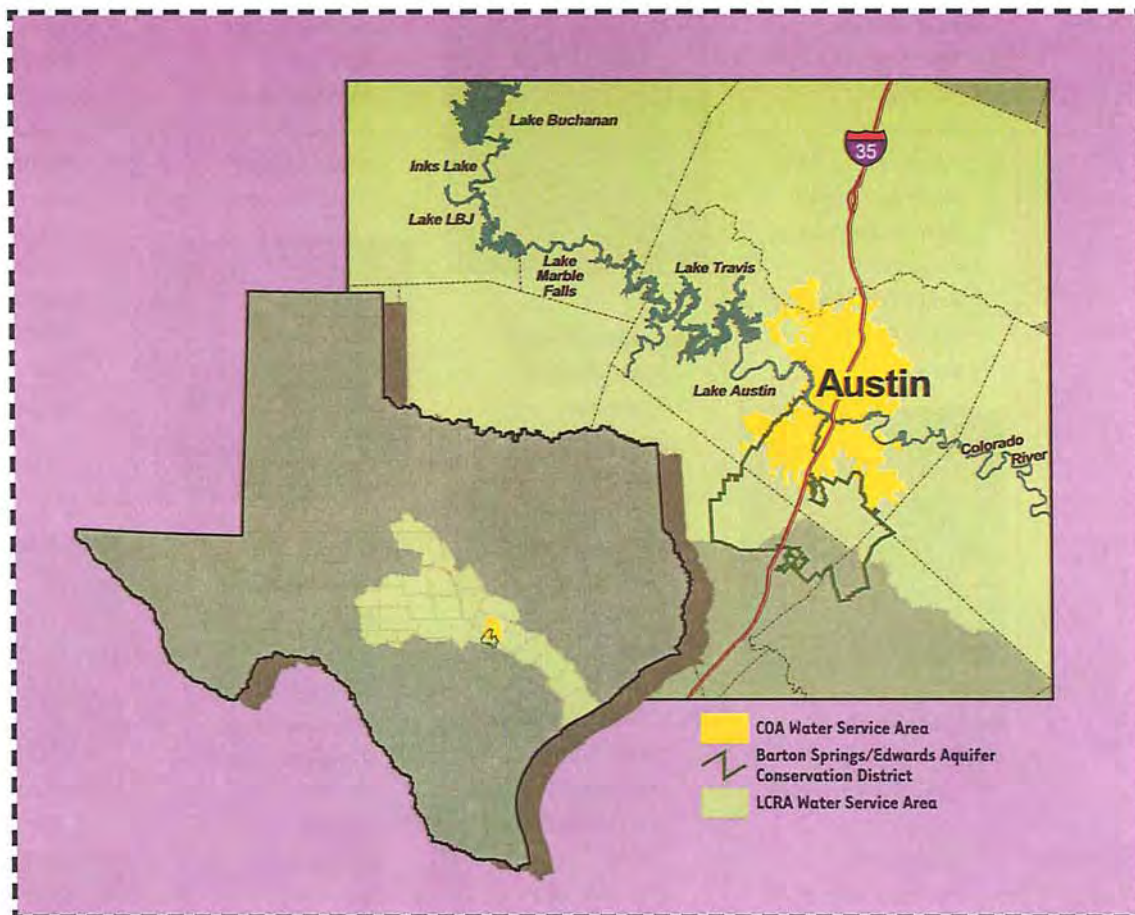
**St. Augustinegrass:** Can be trained to be more drought tolerant by infrequent, but deep watering. Will not come back from an extended period of drought without supplemental water.



\* The Texas Parks and Wildlife Department acknowledges that these plants may escape the garden environment into natural habitat.



## Why encourage SMARTscapes? A call to action from area water suppliers and regulators



Central Texas is a drought-prone, semi-arid region that attracts thousands of new residents every year. Our water is a precious, but limited, resource that is shared by over one million people. Demands on our water supplies are increasing, and there are few new sources that can be developed. It is clear we can no longer take our water for granted.

The City of Austin (COA), the Barton Springs/Edwards Aquifer Conservation District (BS/EACD), and the Lower Colorado River Authority (LCRA) share a common mission to protect the region's water resources and ensure an adequate water supply for future generations. To do this, we strive to educate the public to use water efficiently and to be good stewards of our water resources.

**Where your water comes from:** If you live in or near Austin, your water supply probably comes from one or more of the area lakes. City of Austin water comes from both Lake Austin and

Town Lake. The LCRA manages the Highland Lakes in the lower Colorado River basin to make the best use of this surface water supply. The dams along the Colorado were designed primarily to reduce flooding, but they create important resources for drinking water and hydroelectric power.

Groundwater is another important water source in Central Texas and throughout the lower Colorado River basin. Groundwater from the Barton Springs segment of the Edwards Aquifer—managed by the BS/EACD—supplies drinking water to the 45,000 residents of Buda, Hays, and San Leanna, to name a few. Cities north and east of Austin utilize groundwater from other aquifers. In addition, many individuals have their own wells that pump directly from underground aquifers.

Regardless of where it originates, who regulates it, or who supplies it, water is becoming an even more precious natural resource. SMARTscapes use sustainable landscaping methods that can

reduce the human impact on the region. Conserving water for future generations is a goal toward which each of us can contribute. An admirable goal indeed!

### SMARTscapes—Benefit You, Benefit Everyone!

- Save money on water bills and fertilizers
- Save time on landscape maintenance
- Improve the health of plants and turf
- Provide a beautiful landscape for your enjoyment
- Protect your landscape against drought conditions
- Conserve precious water resources
- Improve the health of our rivers, streams, and groundwater
- Extend the water supply for future generations
- Reduce the risk of water shortages and the need for mandatory water use restrictions
- Save tax dollars by delaying or avoiding the construction of new treatment facilities or the development of new supplies



## Additional Resources

### Local Organizations:

City of Austin Water Conservation, 625 E. 10th St. #615, Austin, TX 78701, 512-499-2199, [www.ci.austin.tx.us/watercon](http://www.ci.austin.tx.us/watercon)  
Barton Springs/Edwards Aquifer Conservation District, 1124 Regal Row, Austin, TX 78748, 512-282-8441, [www.bseacd.org](http://www.bseacd.org)  
Lady Bird Johnson Wildflower Center, 4801 LaCrosse Ave., Austin, 512-292-4100, [www.wildflower.org](http://www.wildflower.org)  
Lower Colorado River Authority, P. O. Box 220, Austin, TX 78767, 800-776-5272, [www.lcra.org](http://www.lcra.org)  
Native Plant Society of Texas, P. O. Box 891, Georgetown, TX 78627, [www.npsot.org](http://www.npsot.org)  
Native Prairies Association of Texas, 3503 Lafayette Ave., Austin, TX 78722  
Riverside Nature Center, 150 Lemos St., Kerrville, TX 78028  
Urban Wildlife Program, Texas Parks and Wildlife, 4200 Smith School Road, Austin, TX 78744, 512-389-4974  
Williamson County Extension Grass Demonstration, 3151 S. E. Inner Loop, Georgetown, TX 78626, 512-930-4400

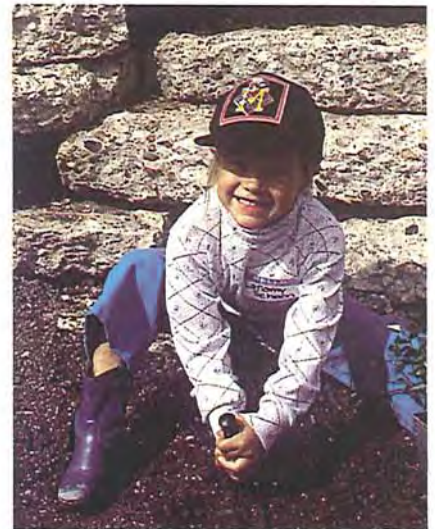
### On the Internet:

SMARTscapes: [www.smartscapes.org](http://www.smartscapes.org)  
Hill Country Wild: [www.hcwild.org](http://www.hcwild.org)  
Texas A&M Xeriscape: <http://extension-horticulture.tamu.edu/extension/xeriscape/xeriscape.html>  
Texas A&M Wildflower Photo Album: <http://aggie-horticulture.tamu.edu/wildseed/wildflowers.html>  
Texas A&M Benny Simpson Native Trees Album: <http://dallas.tamu.edu/native>  
Texas A&M Horticulture: <http://aggie-horticulture.tamu.edu>  
Texas A&M Turf Information: <http://aggie-turf.tamu.edu>  
TNRCC Information System: [www.tnrcc.state.tx.us](http://www.tnrcc.state.tx.us)  
Texas Parks and Wildlife Wildscapes: [www.tpwd.state.tx.us/nature](http://www.tpwd.state.tx.us/nature)  
Tree Folks: [www.treefolks.org](http://www.treefolks.org)

### At Your Local Libraries and Bookstores:

*Complete Guide to Texas Lawn Care, The*, William E. Knoep, 1986, Texas Gardener Press  
*Encyclopedia of Ornamental Grasses, The*, John Greenlee, 1992, Rodale Press  
*Gardening Success with Difficult Soils: Limestone, Alkaline Clay and Caliche*, Scott Ogden, 1992 Taylor Publishing  
*How to Grow Native Plants*, Jill Nokes, 1986, Texas Monthly Press  
*J. Howard Garrett's Organic Manual*, Howard Garrett, 1989, Lantana Publishing Co.  
*Landscape Design: Texas Style*, Howard Garrett, 1986, Taylor Publishing Co.  
*Landscaping with Native Texas Plants*, Sally Wasowski, Julie Ryan, 1983, Texas Monthly Press  
*Native Texas Plants, Landscaping Region by Region*, Sally and Andy Wasowski, 1998, Texas Monthly Press  
*New Central Texas Gardener, The*, Cheryl Hazeltine, Barry Lovelace, 1999 Texas A&M University Press  
*Perennial Garden Color*, Dr. William C. Welch, 1989, Taylor Publishing Co.  
*Plants for Texas*, Howard Garrett, 1996, University of Texas Press  
*Rainwater Harvesting for the Mechanically Challenged*, Suzy Banks, Richard Heinichen, Tré Arenz, 1998, Tank Town  
*Neil Sperry's Complete Guide to Texas Gardening*, Neil Sperry, 1991, Taylor Publishing Co.  
*Sunset Western Garden Book*, 1999, Sunset Gardening Co.  
*Taylor's Guide to Water-Saving Gardening*, Ken Ball, 1990, Houghton Mifflin Co.  
*Texas Wildscapes: Gardening for Wildlife*, Noreen Damude and Kelly Bender, 1999. Texas Parks and Wildlife Press  
*Trees, Shrubs, and Woody Vines of the Southwest*, Robert A. Vines, 1960, University of Texas Press  
*Wildflowers of Texas*, Geyata Ajilvsgi, 1984, Shearer Publishing  
*Wildflowers of the Texas Hill Country*, Marshal Enquist, 1987, Lone Star Botanical  
*Woody Plants of Austin and the Hill Country*, Brother Daniel Lynch, C.S.C., 1981, Acorn Press  
*Xeriscape for Central Texas*, Xeriscape Garden Club of Austin, 1998, City of Austin Water Conservation  
*Xeriscape Gardening*, Ellefson, Stephens, and Welsh, 1992, MacMillan Publishing Co.  
*Xeriscape: Gardening for Austin*, Video, City of Austin Water Conservation

*Everyone can make a difference with SMARTscapes.*







**SMARTscapes**

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